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V. N. KARAZIN KHARKIV NATIONAL UNIVERSITY

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«Library of Ecologist»*

**N. I. Cherkashyna  
N. V. Maksymenko**

**ENGLISH BACHELORS' COURSE IN ECOLOGY  
IN 2 PARTS**

**PART 1**

TEXTBOOK

Kharkiv – 2024

UDC 811.111 (0750.8)

Ch 45

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The textbook is for students majoring in "Ecology" who want to improve general and professionally oriented oral communication skills as well as professional writing skills in accordance with the requirements of the Council of Europe Recommendations regarding the study, teaching and assessment of foreign languages. All educational materials are based on authentic English texts on the history of ecology, general issues of ecology and nature conservation activities.

The textbook is the 3rd revised and supplemented edition, which was awarded the Stamp of the Ministry of Education and Science of Ukraine in 2008. It is for students of the 1st year of study at the bachelor's level. However, the book can be useful for any specialist working in the field of ecology.

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## ПЕРЕДМОВА

Цей підручник є першою частиною університетського курсу з англійської мови для підготовки бакалаврів зі спеціальності «Екологія».

Однією з цілей цього підручника є розвиток навичок читання, перекладу, письма, анотування та реферування автентичних текстів з основних напрямків екології. Інша ціль – це навчання як професійному, так і побутовому спілкуванню англійською мовою, чого вимагає програма з англійської мови для немовних факультетів.

Велика увага приділяється розвитку мислення студентів на основі різноманітних лексико-граматичних вправ, а також завдань на виконання спонтанних та довгострокових проєктів за всіма темами, які вивчаються в університетському курсі. Значна увага приділяється розвитку та поширенню лінгвокраїнознавчих знань, що пов'язано з цілями, визначеними Болонською декларацією, а саме розвитком співробітництва між європейськими вищими навчальними закладами та мобільністю студентів.

**Структура.** Підручник складається з восьми тем, побудованих згідно з вимогами Рекомендацій Ради Європи стосовно вивчення, викладання та оцінювання знання іноземних мов. Всі теми пов'язані між собою та побудовані за принципом наростання граматичних, лексичних та мовних труднощів. Він складається з трьох взаємопов'язаних частин. Перша частина містить основний лексико-граматичний матеріал 8 тем, тест-контроль, а також завдання для виконання проєктної роботи. Друга частина – додатковий матеріал для самостійної роботи країнознавчого та наукового характеру. Третя частина – додаток, таблицю неправильних дієслів, таблицю формул та хімічних елементів англійською мовою.

Підручник розраховано на 180 годин аудиторної та самостійної роботи студентів першого курсу.

Перша частина курсу складається з 8 уроків за такими напрямками екології:

1. Ecology
2. Environmental Damage through History
3. Pollution
4. Air Pollution
5. Water
6. Liquid Assets
7. Soil
8. Formation of Soil.

Кожний урок закінчується тест-контролем, який містить лексичний, граматичний матеріал вивченої теми, а також відповідний матеріал професійного та побутового спілкування.

У другому розділі подаються тексти для додаткового читання, які є матеріалом для самостійної роботи та відповідають темам основних розділів і одночасно є матеріалом науково-популярного, газетного, літературно-художнього жанрів. Ці тексти є основою для складання доповідей, рольових ігор та проектних завдань, вони підвищують мотивацію навчання, стимулюють пізнавальний та професійний інтерес майбутніх екологів, передбачають індивідуальне навчання. Тексти до всіх уроків добиралися відповідно до задач навчання та виховання, які стоять перед предметом «Іноземна мова», а також із урахуванням вікових особливостей та інтелектуального рівня студентів. Усі тексти несуть лінгвокраїнознавчу інформацію за спеціальностями «Екологія» та «Екологія в природоохоронній діяльності». Основними критеріями відбору матеріалів підручника є інформативність, пізнавальність, науковий інтерес.

# PART I

## UNIT 1. ECOLOGY



*Fig. 1. The River Vorskla (Ukraine)*

### I. GLOSSARY

**Activity 1. Read and remember the following words, compose sentences of your own with them.**

1. annual (adj) – річний, щорічний
2. appear (v) – з'являтися
3. breathe (v) – дихати, вдихати
4. breath (n) – дихання
5. by-product (n) – побічний продукт
6. consumption (n) – споживання
7. contribution (n) – внесок
8. decrease (v) – зменшувати
9. disappear (v) – зникати
10. distribution (n) – розповсюдження, розподіл
11. environment (n) – навколишнє середовище
12. exhaust (v) – виснажувати
13. fuel (n) – паливо
14. harm (v) – шкодити
15. harm (n) – шкода
16. heat (v) – опалювати
17. increase (v) – збільшувати

18. influence (on, upon) (v) – впливати
19. involve (v) – залучати, порушувати
20. moisture (n) – вологість, сирість, волога
21. nutrient (n) – їжа, поживні речовини
22. poison (n) – отрута
23. poison (v) – отруювати
24. pollution (n) – забруднення
25. pollute (v) – забруднювати
26. predict (v) – прогнозувати
27. soot (n) – кіпоть
28. sustain (v) – підтримувати
29. wastes (n) – відходи

## **II. VOCABULARY CHECK**

### **Activity 1. Give English equivalents of the following.**

1. біологічне та фізичне навколишнє середовище
2. співвідношення між організмами
3. непов'язані науки
4. збільшення рослинності
5. адаптація організмів
6. повітря, яким ми дихаємо
7. негативний вплив
8. речовини, що отруюють
9. порушувати баланс
10. проблеми, які стоять перед нами
11. скорочення споживання

### **Activity 2. Match the following words with their explanations.**

to face	strong desire of more
to exceed	a measurement of the speed at which smth happens
to sustain	to support
consumption	recognize the existence of
rate	to be greater than
to imply	using up
contribution	to make less or smaller
steaming	to give or to have a meaning of
to reduce	serving as nourishment
nutrients	release surplus energy
greed	act of contribution

### III. GRAMMAR REVIEW

#### Порядок слів у реченні

Будь-яка мова складається з окремих слів і граматичних механізмів, які показують, як складати ці слова у великі значущі словосполучення. Кожне слово має свій зміст, але слова не пов'язані одне з іншим якимось особливим способом.

Можна побачити цей принцип, як він працює на прикладах:

e. g. The hunter injured the wolf.	Мисливець поранив вовка.
The wolf injured the hunter.	Вовк поранив мисливця.
My old friend bought a new car.	Мій старий приятель купив нову машину.
My new friend bought an old car.	Мій новий приятель купив стару машину.

#### Порядок слів у розповідному реченні

В англійському розповідному реченні, на відміну від українського, спостерігається фіксований порядок членів речення. Це зумовлено тим, що показником синтаксичної функції слова є його місце в реченні, а не система відмінкових закінчень, яка характерна для української мови.

0	1	2	3	4	5	6
Обстави на часу	підмет	присудок (іменникова частина)	додаток	обставини способу дії	Обстави ни місця	Обстав ини часу
When?	Who? Which? What?	Action	Who? Which? What?	How?	Where?	When?
Last week	I	went			to the theatre	
	I	had	a very good seat.			
	The play	was	very interesting.			
	I	did not enjoy	It.			
	A young man and a young woman	were sitting			behind me.	
	They	were talking		loudly.		

**(1) Дієслово + додаток**

Дієслово та доповнення до нього звичайно стоять разом, інші слова не ставляться між ними:

	Дієслово	+	додаток
I	like		children very much.
Did you see			Norman yesterday?
Ann often	plays		tennis.

**(2) Місце та час**

Ми вказуємо місце (де?) перед часом (коли? як часто? як довго?)

Tom walks	to work	Місце	every	Час	morning.
She has been		in Canada		since April.	
We arrived		at the airport		early.	

Часто можливо ставити обставини часу на початку речення:

e.g. On Monday I'm going to Paris.

Every morning Tom walks to work.

**Примітка:** На початку речення не можна ставити слова *early* або *late*.

**(3) Прислівники з дієсловом**

Деякі прислівники (наприклад, *always, also, almost, hardly, often, probably*) ставляться з дієсловом у середині речення:

e.g. Tom always goes to work by car.

We were feeling very tired. We were also hungry.

**(а)** Якщо дієслово – одне слово (*goes, cooked*), тоді прислівник ставимо перед дієсловом :

	Прислівник	Дієслово	
Tom	always	goes	to work by car.

**Exercise 1.**

**Arrange the words correctly in the seven columns.**

1. Major gases because activities human concentrations atmospheric of long-lived greenhouse increasing are of.
2. Account for power stations per cent 34 emissions current of dioxide carbon.
3. UK are currently emissions carbon dioxide of are around 2.7 per cent total global of from combustion fuel fossil.
4. Why increasing is greenhouse of concentration gases?
5. A tree in the corner of the garden he planted.
6. UK is stable emission carbon of dioxide in?

7. There a lot of people are at the bus-stop.
8. What to lead will global warming?
9. Is covered Earth's by surface the rock of called thin crust layer a.
10. Above sea Rocky level crust islands forms and continents.

### Запитальні слова

Люди	Речі/ тварини	Місце	Час	Кількість	Спосіб	Причина
Who	What	Where	How long	How many	How	Why
Whose (possession)	Which (of)		How often	How much		
Which (of)			What time			
What			when			

### Типи питальних речень

1. загальні питання	Do you work? Is she reading?	Yes, I do. No, I don't. Yes, she is.
2. спеціальні питання	Where do you live? What are you doing? Who saw the Venus?	I live in Kharkiv. I am reading a special text. He did.
3. розділові питання	Ecology is an important science, isn't it? We can't stop polluting our cities, can we?	Yes, it is. Yes, we can.
4. альтернативні питання	Is this a liquid or a solid substance?	This is solid.

### **Exercise 2. Fill in question words.**

1. ...discovered penicillin?
2. ...calories do you consume every day? "About 1,800."
3. ...do you go to the gym? "About once a week".
4. ...is your favourite colour?
5. ...are you going on holiday this year?
6. ...is the fastest way to get to Poltava from here?
7. ...do you leave home in the morning?
8. ...didn't you call me earlier?
9. ...your lessons start?
10. ...weather forecast for tomorrow?

## Present Simple vs Present Continuous

### Present Simple:

I/ you/ we they work	Do I / you/ we/ they work?
He/ she/ it works	Does he / she/ it work?
I/ you/ we/ they/ do not work. He/ she/ it does not work.	

### Present Continuous (Progressive) Tense:

I am working	Am I working?
You/ we/ they are working	Are you/ we/ they working?
He/ she/ it is working	Is he/ she/ it working?
I am not working He/ she/ it is not working. You/ we/ they are not working.	

### Вживання:

Present Simple	Present Continuous
1. постійна, звичайна дія або дія, яка властива особі чи предмету, який позначає підмет. e.g. She works in a bank. Загальні положення безвідносно до часу e.g. The sun rises in the east.	1. тимчасові ситуації e.g. He is spending the week with his students. 2. ситуації, що змінюються чи розвиваються e.g. She is getting more and more impatient.
2. дії, які постійно повторюються (особливо з прислівниками неозначеного часу) e.g. He always goes to bed at 11 o'clock.	3. дії, які часто повторюються із словами always, constantly, continually, які виражають роздратування або критику e.g. He's always getting into trouble.
3. для вираження майбутньої дії в підрядних реченнях умови й часу, які вводяться сполучниками when-коли, if –якщо, after- після, till,until – поки не, before – перш ніж. e.g. He will do the test if he has all the necessary equipment. 4. розклад руху поїздів, програм e.g. The train leaves at 8.00.	4. дія збігається з моментом мовлення або близько до нього e.g. The sun is shining now. He is doing his course paper. 5. заплановані дії у близькому майбутньому e.g. I'm going to the theatre this evening.
6. часто вживається з словосполученнями : every day/week/month/year, usually, sometimes, always, rarely, never, often, in the morning/evening/afternoon, at night, on Mondays, etc.	6. часто вживається з виразами: now, at the moment, at present, nowadays, today, tonight, always, still, etc.

У Present Continuous не вживаються дієслова feel, hear, see, smell, taste, adore, detest, dislike, enjoy, forgive, hate, like, agree, believe, suppose, understand, belong, concern, depend, know, mean, own, possess, need, prefer, want.

### ***Exercise 3.***

**Complete the sentences using the correct form of the verbs in brackets:**

1. The earth (to go) round the sun.
2. South America ( to be) rich in laterite soils .
3. World population (to reach) critical levels.
4. The environmental crisis we are facing today (to destroy) even a tiny corner of the earth.
5. If we (not take) action soon, the environmental crisis may cause irreversible damage to the entire planet.
6. There (to be) two important differences between ancient civilization and the world today.
7. Since the soil is porous, it (subject) to leaching.
8. Government (to have) an impact on the population growth.
9. Many people prefer a small car now because it (to be) economical to operate and it (to conserve) energy.
10. Animal fat (contain) cholesterol.

### ***Exercise 4.***

**The following sentences all refer to the present. Put the verbs in brackets into the correct tense, Continuous or Simple Present:**

1. You (see) the house on the corner? That is where I was born.
2. You (listen) to what I am saying? You (understand) me?
3. I (notice) the weather (to change) now.
4. She (not understand) what you mean.
5. A lemon (not contain) much sodium.
6. California (to be) a large state with large population.
7. It still (rain), but it (look) as if it will soon stop.
8. Ask him what he (want).
9. Japanese people (not to consume) a lot of fat, but Americans (to do).
10. You (to think) fruit juice (to be) nutritious?

### ***Exercise 5.***

**Fill in the blank spaces of the following proverbs and sayings:**

1. Actions ..... louder than words (to speak).
2. Still tongue ..... a wise head (to make).
3. Birds of a feather ..... together (to flock).

4. A watched pot never .....(to boil).
5. All work and no play .....Jack a dull boy (to make).

### ***Exercise 6.***

**Translate into English. Mind the correct use of tense forms.**

1. Здорова їжа стає все популярнішою у світі.
2. Проблеми навколишнього середовища дуже важливі для майбутнього всього людства.
3. Видобуток нафти скорочується , бо її запаси вичерпуються.
4. Молоді люди повинні дбати про збереження лісів, бо вони є легенями нашої планети.
5. З кожним роком у Китаї зростає виробництво автомобілів, які забруднюють атмосферу.
6. Вчені стривожені тим фактом, що льодовики на полюсах швидко тануть.
7. Велосипед – найекологічніший вид транспорту.
8. Нестача води у світі може бути причиною нових війн.
9. Екологічна катастрофа Чорнобиля вивела великі площі орної землі з сільськогосподарського використання.
10. Вчені працюють над отриманням пального з пальмової олії.

## ***IV PRE-TEXT DISCUSSION***

### **Activity 1. Do you know that:**

- Modern ecology began with Charles Darwin
- Chief Seattle in his speech at a tribal meeting in 1854 said: “Every part of this earth is sacred. Every shining pine needle, every mist in the dark woods, every humming insect is holy in the memory and experience of people”
- Ecologists have developed the declaration of Interdependence – awareness of everything in the world being interdependent and to save the planet from the ecological crises
- Our home, planet earth is finite: all life shares its resources and its energy from sun and therefore has limits to growth
- “Greenpeace” started functioning in 1971
- Nowadays there are many pressure and interesting groups in many countries, trying to find solutions to the problems of pollution

**Activity 2. Make up dialogues of your own, discussing the information given in the part “Do you know that”.**

**Activity 3. Give your opinion on the following**

1. The term “ecology” appeared together with the industrial revolution of the 19th century.
2. Motor-transport influences both positively and negatively on the big cities' environment.
3. Poisoned substances pollute everything around a man: air, land, water, plants, animals and harms his life.

**V. READ AND TRANSLATE TEXT 1A****Text 1A.**

*Fig. 2. The Alpine mountains*

**“Ecology”**

Ecology is a very popular word today. But what does it mean? Ecology is a science which studies the relationship between all forms of life on our planet and the environment.

The physical environment includes light and heat or solar radiation, moisture, wind, oxygen, carbon dioxide, nutrients in soil, water, and atmosphere. The biological environment includes organisms of the same kind as well as other plants and animals. Because of the diverse approaches required to study organisms in their environment, ecology draws upon such fields as climatology, hydrology, oceanography, physics, chemistry, geology, and soil analysis. To study the relationships between organisms, ecology also involves such disparate sciences as animal behaviour, taxonomy, physiology, and mathematics.

The term ecology was introduced by the German biologist Ernst Heinrich Haeckel in 1866; it is derived from the Greek oikos ("house"), sharing the same

root word as economics. Thus, the term implies the study of the economy of nature. Modern ecology, in part, began with Charles Darwin. In developing his theory of evolution, Darwin stressed the adaptation of organisms to their environment through natural selection. Also making important contributions were plant geographers, such as Alexander von Humboldt, who were deeply interested in the "how" and "why" of vegetation distribution around the world.

The idea of "oikos" "home" includes the whole planet of ours, it's population, the Nature, animals, birds, fish, insects, all other living beings and even the atmosphere around our planet.

Since ancient times Nature has served Man. It gives everything he needs: air to breathe, food to eat, water to drink, wood for building and fuel for heating his home. For thousands of years people lived in harmony with the environment and it seemed to them that the resources of nature had no end or limit. With the industrial revolution our negative influence on Nature began to increase. Large cities with thousands of steaming, polluting plants and factories can be found nowadays all over the world. The by-products of their activity are polluting the air we breathe, the water we drink, the fields where our crops are grown. That's why those who live in cities prefer spending their days off and their holidays far from the noise of the city, to be closer to nature. Perhaps they like to breathe fresh air or to swim in clear water because the ecology there is not so poor as in the cities.

So, pollution is one of the most burning problems nowadays. Now millions of chimneys, cars, buses, trucks all over the world are exhausting fumes and harmful substances into the atmosphere. These poisoned substances are polluting everything: air, land, water, birds and animals. So, it is usually hard to breathe in large cities where there aren't lots of plants. Soot and dirt cover everything there. All these things have a harmful effect on the environment and human health. Every year the atmosphere is polluted by about 1000 tons of industrial dust and other harmful substances. Big cities suffer from smog. Cars with their engines have become the main source of pollution in industrial countries. Vast forests are being cut down for the need of industries in Europe and the USA. The loss of the forests upsets the oxygen balance of the new wastelands. As the result some species of animals, birds, fish and plants have disappeared and keep disappearing.

Water pollution is very serious, too. Ugly rivers of dirty water polluted with factory wastes, poisoned fish all round us. Polluted air and poisoned water lead to the end of the civilization. Nowadays a lot of dead lands and lifeless areas have appeared. So our human activity can turn the land to a desert.

Scientists now predict that by the year 2050 the population will double. The fact is that the rate of food production falls behind population growth in many developing countries. The annual fish catch already exceeds what the world's oceans can successfully sustain. If we go on using our natural resources

at today's rates, we will have used up the entire reserves of copper, natural gas and oil till the year 2054.

But the problem ahead lies not so much in what we use but in what we waste. We face not only a resource crisis but a pollution crisis as well. The only solution is to try to change the areas of consumption, technology and population. Changes in technology must be taken by slower population growth, which can be achieved by education. There is little hope of reducing consumption over the next half century.

## **VI. COMPREHENSION CHECK**

### **Activity 1. Do the false/true activity**

1. The term ecology was introduced by a Greek philosopher in ancient times.
2. Modern ecology starts with Darwin's theory of evolution.
3. Ancient people lived in harmony with nature and they thought that the resources of nature were unlimited.
4. The by-products of today's man activity don't harm the nature seriously.
5. Pollution is one of the most burning problems nowadays.
6. The rate of food-production is rather high and will be enough for coming generations.
7. Cars have become the main source of pollution in industrial countries.
8. We will use up half of all copper reserves in 50 years.
9. Soon we'll face not only a resource crisis but a pollution crisis as well.
10. With the industrial revolution started the era of positive influence on Nature.

**Activity 2. Look through text 1A carefully. Then complete the following to make suitable sentences according to the meaning of the text.**

1. Chimneys, vehicles exhaust harmful \_\_\_\_\_.
2. Many species of animal and birds have disappeared and \_\_\_\_\_.
3. \_\_\_\_\_ for the need of industries all over the world.
4. Human activities can turn \_\_\_\_\_.
5. Ecology draws upon such fields of science as \_\_\_\_\_.
6. \_\_\_\_\_ solar radiation, wind, oxygen, water and so on.
7. \_\_\_\_\_ relationship between all forms of life and the environment.
8. \_\_\_\_\_ as climatology, hydrology, chemistry, soil analysis.
9. \_\_\_\_\_ the adaptation of organisms to their environment.
10. Ecology implies \_\_\_\_\_.

## VII. DISCUSSION

**Activity 1. Define the logical parts of text 1A entitling each of them.**

**Activity 2. Work in pairs. Ask and answer the questions on the text 1A.**

**Activity 3. Translate in writing and reproduce.**

- Добрий день.
- Добрий день.
- Я давно тебе не бачила. Чим ти займаєшся?
- Я навчаюся в університеті.
- На якому факультеті?
- На екологічному.
- Яка твоя майбутня професія?
- Я буду екологом.

\*\*\*

- Добрий вечір.
- Добрий вечір.
- Що ти читаєш?
- Я читаю статтю про Чарльза Дарвіна.
- Ти навчаєшся на біологічному факультеті?
- Ні, на екологічному, але я цікавлюсь Ч.Дарвіном як основоположником сучасної екології.

\*\*\*

- Дайте відповідь на запитання, будь ласка. Що таке екологія?
- Екологія – це наука, яка вивчає відношення між формами життя та навколишнім середовищем.
- З яких наук екологія черпає дані?
- Екологія бере дані з кліматології, гідрології, океанології та ін.
- Цілком правильно. А з якого вчення бере початок сучасна екологія?
- З теорії еволюції Ч.Дарвіна.

\*\*\*

- Привіт! Куди ти поспішаєш?
- Я поспішаю на лекцію про забруднення навколишнього середовища.
- Як цікаво! Я теж цікавлюсь цією проблемою.
- А чим саме?
- Я працюю над джерелами забруднення.
- Ти маєш на увазі автотранспорт, промислові підприємства, чи не так?
- Так, це найбільш серйозні джерела забруднення. Вони особливо шкідливі для тих, хто живе у великих містах.
- Можна я піду на лекцію з тобою?
- Звичайно.

\*\*\*

- Лекція була дуже цікавою.
- Так. Я навіть і не знала, що забруднення навколишнього середовища бере початок з давніх часів (ancient times).
- І воно продовжується до сьогоднішнього дня.
- Я дуже хвилююся за наше і за майбутні покоління (generations).
- Саме тому я досліджую проблему забруднення навколишнього середовища.
- Я згодна з тобою (I agree with you), треба боротися з забрудненням повітря, води, землі, щоб бути здоровими.
- Повністю розділяю твою точку зору (I share...).

**Activity 4. Make up your own dialogues on the theme “Ecology”.**

## ***VIII. SKIM TEXT 1B AND GET READY TO SPEAK ABOUT THE MOST IMPORTANT PROBLEMS***

### **Text 1B**



*Fig. 3. Plastic in the ocean*

### **A torrent of plastic: how to cope?**

1. Five hundred tonnes of Christmas tree lights and at least 25m bags of plastic sweet wrappers, turkey coverings, drinks bottles and broken toys were thrown away by UK homes this Christmas and new year. But only a tiny proportion will be recycled. Even at other times of year, only a little

under a quarter of the UK's plastic waste is recycled, according to a survey by home drinks maker Soda-Stream, Globally, the rate of recycling of plastics is even lower.

2. The outcome is a belief that the Earth is being slowly strangled by a gaudy coat of impermeable plastic waste that collects in great floating islands in the world's oceans; clogs up canals and rivers; and is swallowed by animals, birds and sea creatures. In many parts of the developing world it acts as a near ubiquitous outdoor decoration, along roads in India, around villages in Africa and fluttering off fences across Latin America. And when it is not piling up, it is often burned, releasing noxious smoke.

3. There are no global figures on the true scale of the problem but, according to PlasticsEurope, the European trade association for plastics manufacturers, 265m tonnes of plastic are produced globally each year. In the UK, about two-thirds of this is for packaging; globally, this would translate to 170m tonnes of plastic largely created to be disposed of after one use. Even at the EU recycling rate of 33%, two-thirds of that would end up in landfill, being burned or cluttering up the environment. Such a figure, almost certainly a huge underestimate, would be enough to cover the 48 contiguous states of the US in plastic food wrapping. If the world recycled packaging at the rate the US does, 15%, it would generate more than enough plastic to cover China in plastic wrap. Every year.

4. Japan is one of the most successful countries in the world for recycling plastics. The country has passed recycling laws to address the disposal and treatment of plastic waste since 1997, when businesses and consumers were obliged to separate plastic waste for the first time. The list of plastic items that can be recycled has grown to include boxes and cans, wrappings, cups and containers, plates and trays, tube-shaped containers, etc.

5. Globally, 47 industry groups have united to fund research to stop plastic getting into the seas. On land, countries could adopt a system used in several European nations where manufacturers are responsible for covering a percentage of the plastic they make.

**I. Read the text. Choose the most suitable heading from the list (A-G) for each part (1-5) of the text. There are two extra headings which you do not need to use.**

- A. The future of plastic wrappings.
- B. World Ocean's pollution with plastic.
- C. Research as a solution to the problem of plastic pollution.
- D. Plastic recycling in Japan.
- E. The scale of global plastic pollution.
- F. UK faced a plastic waste disposal problem after holidays.
- G. Our planet is being strangled by plastic waste.

**II. Read the text. For statements (6-15) choose "True" if the statement is true according to the text, "False" if the statement is false:**

6. Most part of Christmas decorations will be recycled this year.
7. More than half of the UK's plastic waste is recycled.
8. In the UK the rate of plastics recycling is quite low.
9. Plastic accumulates in huge floating islands in the ocean.
10. Floating plastic islands threaten marine life.
11. In some countries burning plastic does not emit dangerous substances.
12. Packaging requires a lot of plastic.
13. Japan is a leading country in plastic recycling.
14. Every year the list of plastic item to be recycled shortens.
15. Industrial groups unite to find way out of plastic catastrophe.

**III. Read the text. For questions (16-20) choose the correct answer (A, B, C or D).**

16. But only a tiny proportion of the plastic waste will be \_\_\_\_\_  
a) recycled b) burnt c) dumped d) transported to other countries
17. The Earth is \_\_\_\_\_  
a) thriving under the load of plastic waste b) is slowly suffocating under plastic  
c) is fighting back by worsening people's life d) is getting warmer
18. In the UK, about two-thirds of plastic is \_\_\_\_\_  
a) used at home b) used for packaging  
c) used for making other useful things d) is burned in dumps.
19. Japan has passed recycling laws to address \_\_\_\_\_  
a) the disposal and treatment of plastic waste b) dumping waste into the oceans  
c) sending its waste to Ukraine d) production of disposable syringes.
20. In Europe manufacturers should \_\_\_\_\_  
a) use plastic economically b) find the ways to dispose of plastic  
c) recover a percentage of the plastic they make d) sell the excess of their produce.

**IV. Match (21-30) with their definitions (A-L). There are two definitions that you do not need to use.**

- |                 |                |
|-----------------|----------------|
| 21. tiny        | A. study       |
| 22. survey      | B. to kill     |
| 23. outcome     | C. result      |
| 24. to strangle | D. very small  |
| 25. gaudy       | E. to block    |
| 26. impermeable | F. very common |
| 27. to float    | G. bright      |
| 28. to clog up  | H. poisonous   |

29.ubiquitous

30.noxious

I.to allocate

J.resistant

K.to swim

L.bad

## ***IX. LONG-TERM PROJECT WORK***

**Prepare projects on the following topics.**

1. Why I study ecology.
2. Ecological situation in Ukraine.
3. Ecological movement in Ukraine.
4. Influence of today's by-products of man's activity on his lifestyle.

## ***X. SPOKEN ENGLISH (EVERY DAY ENGLISH)***

### **1. Remember!**

Існує багато варіантів привітань, але вибір кожного з них залежить від того, з ким ви вітаєтесь. В українській мові – так само: своєму викладачу чи керівнику ми не скажемо: “Привіт!”, хоч таке привітання буде природнім на адресу друзів та близьких родичів.

Заповніть таблицю привітань в залежності від ситуацій

Привітання:

	Малознайома людина, керівник, викладач, офіційна особа	Родичі, близькі друзі, товариші
Good day. Good evening. Evening. Good morning. Good afternoon. Afternoon. How are you doing? Hi. Hello. How do you do?		

Деякі привітання як в українській, так і в англійській мовах можна використовувати при розставанні. Так само, як на прощання ми можемо сказати “Привіт!”, англійською можна сказати “Good evening”, “Good morning”, “Good afternoon”.

Зазвичай у тому випадку, коли ви вітаєтесь з близькими людьми, однієї фрази привітання буває недостатньо. Як правило, за нею йде слідом

етикетна репліка типу **How are you, How are you getting on**, та інші. Усі вони приблизно означають: “Як справи?”. Але не потрібно на це питання давати докладну відповідь, особливо у тому випадку, коли справи йдуть не досить добре. Перш за все потрібно відповісти так само коротко:

“I’m fine, thanks”

або

“Not too good”

(Добре, дякую)

(Не дуже добре)

Якщо не має гострої необхідності поділитися своїми проблемами, краще у будь-якому настрої дати оптимістичну відповідь. Але на цьому церемонія привітання не закінчується. Якщо вас запитали про справи, значить і ви маєте поцікавитися, чи все добре у вашого співрозмовника:

“How are you”

або

“And you”

(Як ти?)

(А ти?)

Часто після привітання йдуть дві етикетні фрази, перша з котрих передає задоволення від зустрічі.

## 2. Speech patterns.

### Hello! Meeting, Getting acquainted.

Good morning!	Доброго ранку!
Good afternoon!	Доброго дня!
Good evening!	Доброго вечора!
Hello!	Привіт!
Hello, everybody!	Привіт, усім!
Hi!	Привіт!
How do you do!	Здоровенькі були!
Good night!	На добраніч!
How are you?	Як ви?
How are you getting on?	Як справи?
How is your family getting on?	Як сім'я?
How are things with you? (your sister, parents)	Як у тебе справи? (у твоєї сестри, у батьків)
How's life?	Як життя?
How are you doing?	Як ся маєте?
How have you been?	Як ся маєте?
How's life treating you?	Як ся маєте?
How are you this morning?	Як справи йдуть з ранку?
How about you?	А як у Вас?
I'm fine, thank you.	Чудово, дякую.
Not too bad, thank you.	Непогано, дякую.

Not too good.	Не дуже добре.
It is great! Thank you.	Прекрасно! Дякую.
Nothing to complain about.	Нема на що скаржитися.
Nothing to boast of.	Нічим хвалитися
Life is going its usual way.	Життя йде своїм шляхом.
Nothing new, same old things.	Нічого нового, усе як і раніше

to introduce, to allow, to acquaint, to meet, to get acquainted, to be acquainted, an acquaintance.

Let me introduce myself	Дозвольте відрекомендуватися.
Let me introduce my friend to you	Дозвольте відрекомендувати Вам мого друга.
Let me introduce you to my aunt	Дозвольте відрекомендувати Вас моїй тітці.
Allow me to acquaint you with my assistant	Дозвольте познайомити Вас з моїм асистентом.
Do you know Mr. Brown?	Ви знайомі з містером Брауном?
Let me acquaint you with Mr. Brown	Дозвольте познайомити Вас з містером Брауном.
Is this face (name) familiar to you?	Вам знайоме це обличчя (ім'я)?
Meet Helen, she is my groupmate	Познайомтеся з Оленою, вона моя однокласниця.

### 3. Dialogues to be remembered

\*\*\*

- Good morning, Sam!
- Hello, Frank. It's good to see you. How are you?
- I'm fine, thank you. And you?
- I'm doing very well, thanks.
- How's your new job?
- Nothing to complain about.

\*\*\*

- Good afternoon, Mr. Robinson.
- Good afternoon, Mrs. Smith.
- How are you this morning?
- Not too bad, thank you. How about you?
- The same. Did you have a nice week-end?
- It was great, thank you!

\*\*\*

- Hi, Liudmyla! How are things with you?
- Nothing new. Same old things. And you?

- Same here. It's a beautiful day, isn't it?
- Oh, yes, great.
- Would you like to go out of town?
- With pleasure.
- \*\*\*
- Good evening, Helen! I was very sorry to hear about your mother's illness. How is she now?
- Nice meeting you, Victor. Thank you, I appreciate your concern. She's much better.
- Is she? Happy to hear it.
- \*\*\*
- How are you doing? I hope you are enjoying your new apartment.
- Oh, yes, I really do.
- \*\*\*
- Hello, Mark! Nice meeting you again. How have you been?
- I've been quite well and I'm happy to see you too.
- Have you been at home all this time?
- I was on vacation in Spain.
- Did you like it there?
- "Like" is not the right word. It was terrific!
- What about the rain in Spain?
- No rains at all. The weather was ideal.
- \*\*\*
- Let me introduce myself. I'm Kate Smith.
- I'm Iryna, an ecologist-researcher from Kyiv.
- \*\*\*
- How do you do, Mr. Moris? Glad to get acquainted with you.
- \*\*\*
- My name's Bush, Robert Bush. I'm a university teacher.
- Nice meeting you, Mr. Bush, I hope I'm not late.
- No, just in time.
- \*\*\*
- Good evening, sir. I'm Ivan Petrov from Kharkiv Aviation Company Ltd.
- Good evening. Pleased to meet you.
- May I ask you some questions?
- You're welcome.
- Your face is familiar to me, haven't we met before?
- \*\*\*
- What's the idea of your new computer program?
- Have you got acquainted with it?
- Not yet, it's too sophisticated.

\*\*\*

- My name is Justin Luis. Who are you?
- Well, my name is well-known you could see me in movies.
- Where do you usually sit there?

\*\*\*

- Excuse me, are you Charlie?
- No, you've mistaken me for someone else.
- (in a minute) I'm sorry, are you sure you are not Charlie?
- O.K. Let me introduce myself I'm Robert.
- (in a minute) And still, let me ask you again, are you Charlie?
- Damn it! Yes, I'm Charlie if you want it.
- Strange. You don't even resemble him.

#### 4. Translate in writing

\*\*\*

- Таню, познайомся з моїм братом Михайлом.
- Рада познайомитися, Михайле, якщо ви не проти, щоб я називала вас так.
- Аніскільки. Рад зустрічі з вами, Таню. Я дуже багато чув про вас від Катерини.
- Сподіваюсь, тільки добре.
- Звісно.
- Вам подобається Київ?
- Подобається – не те слово. Це своєрідне історичне місто.
- Ви вже були в Печерській Лаврі?
- Ще ні.
- Бажаєте подивитись? Це близько.
- Дякую, дуже люб'язно з вашого боку.

\*\*\*

- Добрий день, пане Браун.
- Добрий день, пані Райт.
- Як справи (йдуть зранку)?
- Непогано. Дякую. А як у вас?
- Так само. Добре провели уікенд?
- Чудово, дякую.

\*\*\*

- Привіт, Сашо! Як справи?
- Нічого нового. Усе так само.
- І у мене теж. Чудовий день, вірно?
- О так, чудовий.
- Не хочеш поїхати за місто?

\*\*\*

- Добрий день, пане Сміт!
- Вітаю, пане Холдер, дуже радий вас бачити. Як справи?
- Нічого нового, а в цілому (in general) скаржитися нема на що.
- Де ви були весь цей час?
- Я був у відпустці у Празі у своїх чеських друзів.
- Правда? Вам сподобалося?
- Не те слово! Було просто здорово. Мої друзі – дуже компанійські люди, а Прага – чудове європейське місто. А я чув, що ви змінили квартиру. Це правда?
- Абсолютно вірно (absolutely). Наша нова квартира нам дуже подобається. Не бажаєте подивитися (to have a look)? Це близько (near here).
- Гарна думка, чому б ні.

### 5. Situation for spontaneous projects

1. You are going to enter a higher school but you haven't yet chosen which one. You meet a friend of yours who is a first year student of Kharkiv Automobile and Highway University. You ask him a lot of questions about the University, about student's life, about sport and sporting activity at the university. And he helps you to make your choice.
2. You study in Oxford. Your new British friend is asking you about sports, games, hobbies and past time of the youth in Ukraine.
3. You don't feel well. You attend the lecture of a well-known doctor about healthy ways of life in order to be "healthy, wealthy and happy". You are asking him for some pieces of advice.

## TEST-REVIEW I

### Task I. Максимальна кількість балів: 5

*Choose the correct word to complete the sentences.*

1. The Earth ... round the Sun

- |          |         |
|----------|---------|
| A) walks | C) go   |
| B) went  | D) goes |

2. We ... facing the environmental crisis today.

- |        |         |
|--------|---------|
| A) is  | C) am   |
| B) are | D) were |

3. I ... to read the article on the ecological problems t tonight.

- A) was going            C) am going  
B) are going            D) were going

4. The term “ecology” ... together with the industrial revolution of the 19th century.

- A) appears            C) have appeared  
B) appeared            D) is appearing

5. The physical environment ... light, heat, water, wind, carbon dioxide.

- A) includes            C) involved  
B) consists            D) excludes

### **Task II. Total 5**

*Make the following sentences negative.*

1. Modern ecology began with Charles Darwin.
2. Nature has always served Man.
3. Water pollution is very serious.
4. The annual fish catch already exceeds the capabilities of the world oceans.
5. He is testing samples of soil now.

### **Task III. Total 5**

*Choose the necessary word or expression to complete the sentences.*

1. I think that fruit juice is ...

- A) fattening            C) nutritious  
B) poisonous            D) dangerous

2. Polluted air is the cause of many ...

- A) emissions            C) melting of icebergs  
B) diseases            D) lost civilizations

3. With the industrial revolution negative influence on Nature began to ...

- A) decrease            C) low  
B) increase            D) stop

4. Greenpeace is a very famous pressure ...

- A) circle            C) movement  
B) group            D) venture

5) Death from cancer increases people's ....

- A) health                      C) awareness  
B) problems                    D) concern

#### **Task IV. Total 10**

*Give English equivalents of the following:*

1. біологічне та фізичне навколишнє середовище
2. порушувати баланс
3. скорочення споживання
4. я ціную вашу турботу.
5. дозвольте відрекомендуватися
6. як справи?
7. нема на що скаржитися.
8. життя йде своїм шляхом.
9. дозвольте познайомити Вас з моїм асистентом.
10. як ся маєте? (3 expressions).
11. прекрасно, дякую
12. нічим похвалитися.
13. нічого нового, усе як і раніше.
14. повітря, яким ми дихаємо.
15. адаптація організму
16. вихлопні гази
17. шкодити
18. відходи
19. розповсюдження
20. джерела забруднення

#### **Task V. Total 5**

*Compose sentences with proposed question words.*

1. Our planet is not limitless. (What ...?)
2. All life shares its resources and energy from the Sun. (What...?)
3. The term ecology was introduced by Charles Darwin. (By whom...?)
4. The worldwide movement Greenpeace started functioning in 1971 (When...?)
5. There are several ecological pressure and interest groups in our country. (Where...? ... What...?)

#### **Task VI. Total 5**

*Compose sentences using the following words.*

1. futurologists, the, and, of, the, planet prospects, problems, blue, interest, scientists, and.

2. the, in, headquarters, of, Amsterdam, Greenpeace, are.
3. movement, this, in, 25, operates, countries.
4. Aim, of, the, is, Greenpeace, to, wildlife, from, wastes, toxic, protect, tests and nuclear.
5. Are, of, and, plants, in, of, animals, danger, extinction, all, of.

**Task VII. Total 5**

*Give 3 forms of irregular verbs and compose 5 sentences with them.*

- |               |                  |
|---------------|------------------|
| 1) to feel    | 6) to know       |
| 2) to hear    | 7) to understand |
| 3) to see     | 8) to mean       |
| 4) to smell   | 9) to take       |
| 5) to forgive | 10) to find      |

## UNIT 2. ENVIRONMENTAL DAMAGE THROUGH HISTORY



*Fig. 4. Easter Island*

### I. GLOSSARY

**Activity 1. Read and remember the following words, compose sentences of your own with them.**

1. airborne (adj) – той, що переноситься повітрям
2. ancestor (n) – предок
3. ancient (adj) – древній
4. apparently (adv) – очевидно
5. befoul (v) – забруднювати
6. cedar (n) – кедр
7. damage (n) – шкода
8. deliberately (adv) – навмисно
9. destitution (n) – злидні
10. deterioration of the environment – забруднення навколишнього середовища
11. eliminate (v) – знищувати, усувати
12. eradicate (v) – викорінювати, знищувати
13. extinction (n) – вимирання
14. fragile (adj) – слабкий, крихкий
15. hunter-gatherer (n) – мисливець-збирач
16. imposes an important stress – викликає сильне напруження

17. landscape (n) – ландшафт, пейзаж
18. literally (adv) – буквально, без перебільшення
19. odour (n) – запах
20. predator (n) – хижак
21. predecessor (n) – попередник
22. scrubland (n) – чагарник
23. shelter (v) – покрівля, притулок
24. soil contamination (n) – забруднення ґрунту
25. sophisticated (adj) – складний
26. staple crop (n) – основна культура
27. tame (n) – ручний
28. thrive (v) – процвітати, квітнути
29. waterlogging (n) – затоплення
30. woodland (n) – ліс

## **II. VOCABULARY CHECK**

**Activity 1. Give English equivalents of the following.**

1. критична точка
2. геологічні докази
3. древні люди
4. випалювати ліс
5. руйнівний вплив
6. керувати вогнем
7. вигляд землі
8. релігійні споруди
9. ручний
10. полив
11. голод
12. свідоцтво
13. тривалість життя
14. крихка споруда
15. надмірна іригація (полив)

**Activity 2. Match the following words with their explanations.**

savannah	an open flat stretch of grassy land in a warm and sometimes wet part of the world
rainforest	wet tropical forest with tall trees growing thickly together
extinction	the state of being or becoming extinct

population growth	the accumulation of highly soluble sodium, magnesium and potassium salt in a soil
salinization	the accelerated removal of soil through various processes
soil erosion	a permanent increase in population size brought about by an increase in birth over deaths or immigration over emigration
tame	gentle and not afraid, trained to live with man
settler	remain alive
irreversible	chief material
survive	that cannot be reversed
staple crop	person who has come to live in a newly developing country

### III. GRAMMAR REVIEW

#### Утворення множини іменників

Множина іменників утворюється додаванням до форми однини закінчень –s, -es.

-s	<i>Shop- shops; day- days</i>
-es	після у з попередньою приголосною, при цьому у змінюється на <i>i</i> : <i>city-cities, country-countries</i>
	після о: <i>tomato – tomatoes</i> , але <i>piano-pianos; photo-photos</i>
	Після –s, -ss, -ch, -sh, -tch, -x, -z: <i>box-boxes; dress-dresses; bench-benches</i>
	Після -f, -fe, при цьому –f, -fe змінюються на <i>v</i> : <i>wife-wives, life-lives; leaf-leaves; loaf-loaves</i> . Усі інші іменники на –f, -fe - за загальним правилом : <i>safe-safes; roof-roofs</i> .

#### Вимова закінчення –s

Після глухих приголосних вимовляється [s]	a desk-desks a map-maps a month-months
Після дзвінких приголосних і голосних вимовляється [z]	a sea-seas a wall-walls
Після <i>ce, x, s, ss, sh, ch, ge</i> вимовляється [iz]	a box-boxes a bus-buses a family-families a place-places

### Незлічувані іменники

Вживаються тільки у формі однини Іменники, що мають форму однини, яка завжди узгоджується з дієсловом у формі множини.	Business, friendship, peace, money, ink, sugar, weather, advice, hair, information, knowledge, news, progress Police, committee, people, cattle, the poor, the rich, the youth, family.	His business is very successful. The weather is wonderful today.  Our family are all early risers.
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### Інші способи утворення множини іменників

Винятки	Man-men, woman-women, foot-feet, child-children, tooth-teeth, ox-oxen, goose-geese, mouse-mice
Однина=множина	A swine -many swine, a sheep-many sheep, a deer- many deer
Іменники грецького та латинського походження	Curriculum-curricula; datum-data; phenomenon-phenomena; basis-bases; thesis-theses; crisis-crises; radius-radii; nucleus-nuclei; stimulus-stimuli; index-indexes (indices)
Складені іменники	Mother-in-law- mothers-in-law; fellow-worker-fellow-workers; forget-me-not- forget-me-nots.

- **Note how certain nouns can be used in the singular and plural with a different meaning.**

Singular	Plural
Give me a <b>glass</b> of water, please.	I've been wearing <b>glasses</b> since I was 8 years old.
Has she always had short <b>hair</b> ?	There are so many <b>hairs</b> in the sink!
Have you got any lined <b>paper</b> I could use?	He showed his <b>papers</b> to the customs officer.
I can't talk now; I have a lot of <b>work</b> to do.	A lot of Dali's <b>works</b> are on display in this museum.
We had at least 200 <b>people</b> at our wedding.	The <b>peoples</b> of Africa are fighting Covid-19.

The <b>rain</b> is falling really heavily now.	The villagers are hoping for the <b>rains</b> to come soon.
You need <b>experience</b> for this job.	I had a lot of interesting <b>experiences</b> visiting Asia.

### *Exercise 1.*

#### **Underline the correct verb form:**

1. Ecology is/are my favourite subject.
2. Wood come/comes from trees.
3. The news was/were interesting this evening.
4. His advice was/were useful.
5. Your furniture is/are made from precious wood.
6. Butter contain/contains a lot of fat.
7. Your knowledge of environment problems is/are quite impressive.
8. Japanese is/are difficult to learn.
9. Most people is/are worried about the future.
10. Water is/are necessary for our survival.

### *Exercise 2.*

#### **Write the correct form of the verbs in brackets:**

1. The people of Asia ... (believe) in various religions.
2. 20 years ... (be) a long time.
3. SkyUp ... (be) a new Ukrainian airline.
4. Flu ... (make) you feel miserable.
5. A loaf of bread ... (cost) more now than it did ten years ago.
6. I think olive oil ... (add) a lot of flavour to cooking.
7. Half the sheep ... (be) killed because there was so much snow in the mountains.
8. Some people think French ... (sound) so romantic.
9. Physics ... (involve) a lot of theoretical study.
10. Gravity ... (pull) things towards the centre of the Earth.

## **Present Perfect Simple and Present Perfect Continuous**

### **Present Perfect Simple**

#### **Вживання**

1. Закінчена дія у вашому житті до теперішнього часу  
У реченнях без обставин часу  
Have you ever been to the USA?  
She's lived in China and Japan.  
We've reduced the prices.
2. У реченнях з прислівниками або обставинними фразами:  
Have you had a holiday this year?  
He has never seen the rainbow.

*already, ever, never, yet, always, often, seldom, rarely, several times, today, just, this evening, for a long time, for, since, how long?, up to now, up to the present, lately.*

We haven't met since 2000.

3. У ситуаціях, які почалися в минулому і все ще продовжуються

He's been an architect since 1992.

4. Дії у минулому, які продовжуються до тепер, коли ми вказуємо кількість

How long have you known her?  
She has designed a lot of fashion items for this company.

How many tests have you done?

### Present Perfect Continuous

#### Вживання

1. Дії, які почалися у минулому і все ще продовжуються, включаючи теперішній час.

We've been producing pens since the 1980s.

This plant has been polluting the air since it was built in 1995.

He's been living here for five years.

2. Дії, які почалися у минулому і щойно закінчились .

You look very tired. Have you been working?

I'm hot because I've been running.

\*The Present Perfect Continuous і Present Perfect Simple мають подібне значення. Яку форму вибрати, залежить від того, що нас більше цікавить: сама дія, чи її результат.

e.g. I've been fixing the car (My hands are dirty).

e.g. I've fixed the car (Now I can drive to work).

### For and since

We use **for** with the period of time      we use **since** with a point in time

For	three days	since	Tuesday
	five hours		8 August
	a month		4 o'clock
	ten minutes		last summer
	a long time		1995
	ages		I last saw you

**Exercise 3.****Underline the correct verb form:**

1. Life expectancy is/has been growing in modern world.
2. She has made/has been making three business trips to Lviv this month.
3. Recently the ozone layer over the poles depletes/ has been depleting
4. She has travelled/has been travelling to Europe many times since 2019.
5. Some countries have made/have been making a lot of efforts to reduce CFCs emissions since 1992 when the Kyoto protocol was signed.

**Exercise 4.****Put the verbs in brackets into the correct form.****An exciting trip.**

I just (to receive) a letter from my brother. He (to be) in Australia. He (to be) there for six months. He (to be) an engineer. He (to work) for a big firm and he already (to visit) a great number of different places in Australia. He (to go) to Alice Springs, a small town in the centre of Australia. He soon (fly) to Perth. My brother never (to be) abroad before, so he (to find) this trip very exciting.

**Exercise 5.****Use the words in capitals to form a word that fits in the space in the same line.****Choosing a car**

There comes a time when not having a car becomes ... . Choosing your first car is an ...experience. Most men's ...is so vivid that they see themselves speeding along in a...sports car, attracting... looks from those they pass. In ...this does not happen that often. More practical and...aspects have to be considered when choosing a car. The...is normally between a small city car which is...to run and easy to park and a larger family car which would be more...and probably be fitted with more...features.

Practical  
Excite  
Imagine  
Power  
Envy  
Real  
Finance  
Choose  
Economy  
  
Comfort  
Safe

**Exercise 6.****Translate into English**

1. Сьогодні дуже холодно; цілу ніч падав сніг.
2. Ми познайомились місяць тому назад, але з того часу я нічого про нього не чула .

3. – Ви коли-небудь були в Австралії?  
– Ні, але я завжди мріяла там побувати.
4. Потепління клімату змінює рівень світового океану.
5. Дякую вам за все, що ви зробили для мене.
6. Вирубка вологих тропічних лісів веде до знищення крихкої рівноваги у природі.
7. Багато цінних порід дерев були винищені заради людської пихи.
8. Коли ви останній раз їздили до Туреччини? – Я взагалі ніколи не був у Туреччині.
9. Дощ закінчився, і знову світило сонце.
10. Через людську діяльність Аральське море висохло майже наполовину.

#### ***IV PRE-TEXT DISCUSSION***

##### **Activity 1. Do you know that:**

- Modern man did much damage to the environment due to the development of civilization.
- In ancient Babylon garbage accumulated in the houses and human wastes were rarely carried further than the nearest street.
- Modern man did much damage to the soil by intensive farming.
- The problem of soil erosion appeared in ancient European countries.
- World population is reaching critical levels.
- Rapid increase in the rate of soil erosion occurred about 4 000 years ago.
- We discovered how to manipulate fire about a million years ago.
- The elephant and the buffalo were animals who suffered from our ancestors.

**Activity 2. Make up dialogues of your own, discussing the information given in the part “Do you know that”.**

##### **Activity 3. Give your opinion on the following:**

1. Modern life style ruins the environment.
2. Soil erosion is spreading in Ukraine now.

## ***V. READ AND TRANSLATE TEXT 2A***

### **Text 2A.**

#### **“Environmental damage through history”**

The world has reached a crisis point. Our modern lifestyle is destroying the fragile environment. We tend to imagine that ancient people were “environmentally friendly” and lived in harmony with nature. Some people (such as the American Indians) did indeed respect and protect their environment. But there are many historical examples of ancient people who destroyed the land they inhabited. In doing this, some of them destroyed their livelihood.

Many communities today have been burning down trees to clear land for growing crops. Some of the earliest human communities also burned large areas of woodland for this purpose.

Human societies evolved from small groups of hunter-gatherers to larger societies based around agriculture and domestic animals. According to many anthropologists, this was the beginning of "civilization." But it was also the beginning of mankind's destructive influence on the environment. We probably discovered how to manipulate fire about a million years ago. Until that time, most of the earth's land surface was covered in thick forests. Large forest fires created a new type of landscape in many parts of the world – the savannah. The world's population then was only five or ten million. But these people literally changed the face of the earth.

Several centuries later, the inhabitants of Easter Island in the Pacific Ocean cut down all their trees in order to erect huge religious statues. They apparently forgot that the trees were their major source of food, fuel and shelter. Within a few years, the rich and sophisticated society on Easter Island was reduced to destitution and starvation.

Speaking about environmental damage, we should mention the threat of extinction, which affects many animal and plant species in the world today. We first demonstrated our ability to eradicate other species several centuries ago. The dodo was a large bird, rather like a turkey, that lived on the island of Mauritius in the Indian Ocean. The bird had no natural predators and never developed the ability to fly. Despite this the dodo population thrived on the island for thousands of years. When the first humans arrived in Mauritius in the early 16th century, they found that the dodos were very tame. The birds walked right up to the human settlers and did not try to run away. The settlers killed the dodos, partly for food and partly for sport. By 1680, less than 200 years after the first human settlement on Mauritius, the last dodo was dead. Only the expression "as dead as a dodo" lives on in the English language.

Other animals who suffered at the hands of our ancestors included the elephant and the buffalo.



*Fig. 6. The ancient Mesopotamia*

Modern man has done much damage to the soil by intensive farming methods. One problem is salinization from excessive irrigation. But salinization is not entirely a problem of modern, high-technology agriculture. Our ancestors probably discovered irrigation about 5,500 years ago. The ancient Mesopotamians, who lived about 4,500 years ago, were enthusiastic farmers. They built extensive irrigation channels in river valleys to try to increase their crop yields. Unfortunately, this led to waterlogging and salinization of the soil. The yield of the staple crop, barley, fell dramatically and a prolonged famine occurred. The people who survived the famine had to change their staple crop from barley to wheat, which tolerated the salty soil better. The problem of soil erosion has occurred ever since man began to destroy forests.

There is geological evidence that a rapid increase in the rate of soil erosion occurred about 4,000 years ago in the northern European countries, particularly Britain, France and Germany.

The problems of urban expansion, industrial pollution and waste disposal should be mentioned as well. Ever since humans first tried to live together in towns, there have been problems providing food, fuel, water and sanitation for urban communities. The great city of Ur (the biblical home of Abraham) was partially destroyed by floods after the inhabitants removed the trees around the headwaters of the river Euphrates to use as fuel for their fires. Although the Bible says that the cause of the flood was the anger of God, the real cause was probably environmental damage by man.

The world is now a global village. World population has been reaching critical levels. During the past 200 years, humankind has invented powerful technology that multiplies each individual's destructive impact on the

environment. One man with an ax can cut down one or two large trees in a day, with modern machinery the same man can cut down a whole forest. Population growth and modern technology mean that we cannot afford to repeat the mistakes of our ancestors. The environmental crisis we are facing today will not just destroy a tiny corner of the earth. If we do not take action soon, it may cause irreversible damage to the entire planet.

## **VI. COMPREHENSION CHECK**

### **Activity 1. Do the false/true activity**

1. The birds were afraid of people and never walked right up to the human settlers, they always run away.
2. The expression "as dead as a dodo" lives on in the English language.
3. You can hardly find many historical examples of ancient people who destroyed the land they inhabited.
4. Large forest fires created a new type of landscape in many parts of the world.
5. The great city of Ur was fully destroyed by fires.
6. The today's environmental crises will destroy every tiny corner of the earth.
7. One man with an ax can cut down one or two large trees in a year.
8. The dodo was a tiny bird rather like a sparrow.
9. To erect huge religious statue ancient inhabitants cut down all their trees.
10. We who live today repeat the mistakes of our ancestors concerning the environment.

**Activity 2. Look through text 2A carefully. Complete the following to make suitable sentences according to the meaning of the text.**

1. Man first began to destroy the environment when \_\_\_\_\_
2. A million years ago the size of the world's population was \_\_\_\_\_
3. The reason why the inhabitants of Easter Island cut down their trees was \_\_\_\_\_
4. The dodo became extinct because settlers on Mauritius \_\_\_\_\_
5. Elephants were common in most parts of the world \_\_\_\_\_
6. Salinization means that the soil \_\_\_\_\_
7. When man started to destroy forests, soil erosion \_\_\_\_\_
8. Poor sewage disposal has always caused \_\_\_\_\_
9. If nothing is done about the environment crisis today, \_\_\_\_\_
10. During the last two hundred years the two main factors, which have destroyed the environment were \_\_\_\_\_

**Activity 3.**

*Translate into English.*

1. З давніх часів Природа служила людині.
2. Забруднення довкілля – одна з найважливіших проблем сьогодення.
3. Великі міста страждають від смогу.
4. Автомобілі стали головним джерелом забруднення довкілля у промислових країнах.
5. Великі міста з заводами та фабриками, які забруднюють повітря, можна побачити у всьому світі.
6. Зараз ми намагаємося зменшити забруднення довкілля.
7. Кожна людина може вплинути на рішення проблеми забруднення довкілля.
8. З кожним роком зростає кількість парникових викидів у атмосферу.
9. Велосипед – найекологічніший вид транспорту.
10. Європа хоче заборонити використання бензинових автомобілів до 2030 року.

## **VII. DISCUSSION**

**Activity 1. Define the logical parts of text 2A entitling each of them.**

**Activity 2. Work in pairs. Ask and answer the questions on text 2A.**

**Activity 3. Work in pairs. Read, translate and learn the following dialogues.**

\*\*\*

- What does the word „pollution” imply, please?
- It implies deterioration of the environment — the air we breathe, the water we drink or bathe in; the soil contamination that befouls the country; the aggressive noise that imposes an important stress on the nervous system; the odour nuisance (injurious or obnoxious to the community" or members of it) which has a strong bearing on the comfort of life. All that may be the cause of health hazards.

\*\*\*

- What is suggested by the words “continental pollution”?
- Well, when we speak of continental pollution we mean that pollution knows no boundaries, whether it is airborne, waterborne, noise or smell.
- Could you give an example to support this statement?
- Sulphur dioxide, for instance, has been reduced nearly to the ground level in Britain but it is airborne from high chimneys smoke to damage the

forests of Norway. Rivers common to several nations carry all sort of garbage downstream.

\*\*\*

- They say that pollution is an indispensable «partner» of economic progress. Is that so?
- Well, it is true in a way, if it is not attacked properly. Today, the most widely discussed aspects of the pollution problem are those caused by industrialization, urbanization and motorization. At present, most highly developed countries are taking steps to fight pollution. Many countries cope with pollution in any form, and the problem is being successfully solved.
- What is the role of WHO in the matter?
- With the creation of WHO the efforts to prevent deterioration of the environment have acquired a global dimension.
- What aspects of the pollution problem have received priority of attention at WHO?
- The problem of air and water pollution.

\*\*\*

- What were you doing the whole evening yesterday? I couldn't get you on the phone.
- Really? I was reading a very interesting article "Environmental damage through history".
- Who is the author of this article?
- The article was written by a well-known English ecologist Mr. Turbines.
- And what is the essence of the article?
- The article describes the damages to the environment caused by our ancestors.
- I see.

\*\*\*

- Do you think that ancient people were "environmentally friendly" and lived in harmony with nature?
- I don't think so. As far as I know from the history of ecology, the destruction of nature had started since ancient times.
- I know that many countries today burn down trees to clear land for growing crops.
- You see, some of the earliest human communities also burned large areas of woodland for this purpose.
- And it was the beginning of environmental pollution, wasn't it?
- Yes, it was. But this was one of the ways in ancient society to grow crops and to get food.

\*\*\*

- Our lecturer has told us that there is still the threat of extinction of many animal and plant species of the world today.
- Yes. I know about it. And I also know that we first demonstrated our ability to eradicate other species several centuries ago.

\*\*\*

- Have you ever heard such word as “dodo”?
- No, and what does it mean?
- It means “дронт”.
- “Дронт”? what is it?
- Dodo was a large bird, rather like a turkey.
- And where did it live?
- It lived on the island of Mauritius (Маврикий) in the Indian Ocean. When the first humans arrived in Mauritius in the 16th century they started killing the dodo for their food.
- Are there any dodos now?
- No, only the expression “as dead as a dodo” lives in the English language.
- I am sorry to hear this.

**Activity 4. Make up your own dialogues on the theme “Environmental damage through history”.**

## ***VIII .SKIM TEXT 2 B AND GET READY TO SPEAK ABOUT THE POLLUTION PROBLEM***

**Text 2B.**

**Our plastic pollution crisis is too big for recycling to fix**



*Fig. 6. Plastic products*

1. Every minute, every single day, the equivalent of a truckload of plastic enters our oceans. In the name of profit and convenience, corporations are literally choking our planet with a substance that does not just “go away” when we toss it into a bin. Since the 1950s, some 8.3bn tons of plastic have been produced worldwide, and to date, only 9% of that has been recycled. Our oceans bear the brunt of our plastics epidemic – up to 12.7m tons of plastic end up in them every year.

2. For years, we've been conned into thinking the problem of plastic packaging can be solved through better individual action. We're told that if we simply recycle we're doing our part. We're told that if we bring reusable bags to the grocery store, we're saving the world. We think that if we drink from a reusable bottle, we're making enough of a difference. But the truth is that we cannot recycle our way out of this mess.

3. Recycling alone will never stem the flow of plastics into our oceans; we have to get to the source of the problem and slow down the production of all this plastic waste. Think about it: if your home was flooding because you had left the faucet on, your first step wouldn't be to start mopping. You'd first cut the flooding off at its source – the faucet. In many ways, our plastics problem is no different. We need corporations – those like Coca-Cola, Unilever, Starbucks and Nestlé that continue to churn out throwaway plastic bottles, cups, and straws – to step up and show real accountability for the mess they've created. Drink companies produce over 500bn single-use plastic bottles annually; there is no way that we can recycle our way out of a problem of that scale.

4. Municipal bag, cup and straw bans like those in Morocco, Iceland, Vancouver and some US cities are a great start, but also not enough. While clean-up efforts are helpful in addressing litter problems, they can't begin to touch the problems created by microplastics – the tiny particulates of plastic that now permeate our waterways and broader environment.

5. Not long ago, we existed in a world without throwaway plastic, and we can thrive that way again. The world's largest corporations – with all their profits and innovation labs – are well positioned to help move us beyond single-use plastics. All over the world people are already innovating toward solutions that focus on reusing and reducing plastics. It's time to accelerate this process and move beyond half measures and baby steps. Corporations are safe when they can tell us to simply recycle away their pollution.

***1. Read the text. Choose the most suitable heading from the list (A-G) for each part (1-5) of the text. There are two extra headings, which you do not need to use.***

- A. The way we are used to think about recycling.
- B. Plastic epidemics on the rise.
- C. The main threat to our waterways.

- D. Real steps are needed from the corporations.
- E. A world without throwaway plastic.
- F. Time to find new ways to fight plastic pollution.
- G. Water problem should have a political solution.

**II. Read the text. For statements (6-15) choose “True” if the statement is true according to the text, “False” if the statement is false.**

- 6. Our planet is dying because of corporations’ profit and convenience.
- 7. 8.3bn tons of plastic have been produced worldwide for the last 70 years.
- 8. The problem of plastic packaging can be solved individually.
- 9. Recycling alone can stop the flow of plastic into the oceans.
- 10. Nestlé continues to produce throwaway plastic bottles, cups, and straws.
- 11. Drink companies recycle over 500bn single-use plastic bottles annually.
- 12. In some countries there are bans on disposable cups and straw.
- 13. Clean-up efforts can help in addressing litter problems.
- 14. Microplastics, permeating our waterways, is not an acute problem today.
- 15. People are looking for solutions that focus on reusing and reducing plastics.

**III. Read the text. For questions (16-20) choose the correct answer (A, B, C or D).**

- 16. Corporations are \_\_\_\_\_
  - A. literally choking our planet
  - B. helping poor people to survive
  - C. producing less waste
  - D. using new production technologies
- 17. Our oceans \_\_\_\_\_
  - A. are becoming cleaner
  - B. experience plastics epidemic
  - C. deplete more and more
  - D. are getting warmer
- 18. Big corporations \_\_\_\_\_
  - A. must show real accountability for the mess they’ve created
  - B. are producing a lot of waste
  - C. are monopolies
  - D. occupy a large share of the world market
- 19. Microplastics – the tiny particles of plastic \_\_\_\_\_
  - A. are produced in laboratories
  - B. can be recycled
  - C. permeate our waterways
  - D. are very dangerous for marine life

20. People are looking for solutions \_\_\_\_\_

- A. to the problem of climate warming
- B. to pollution problem
- C. that focus on reusing and reducing plastics
- D. to the problem of just and fair world

**IV. Match words (21-30) with their definitions (a-l). There are two definitions that you do not need to use.**

- |                   |                              |
|-------------------|------------------------------|
| 21 profit         | a to reprocess               |
| 22 to choke       | b recyclable                 |
| 23 to recycle     | c to diminish                |
| 24 reusable       | d to throw in large quantity |
| 25 to stem        | e a financial gain           |
| 26 to churn out   | f to suffocate               |
| 27 accountability | g waste                      |
| 28 litter         | h responsibility             |
| 29 to permeate    | i to develop well            |
| 30 to thrive      | j to direct                  |
|                   | k spread through             |
|                   | l to restrict                |

**Activity 5. Translate into English using the dictionary.**

Людина своєю діяльністю на планеті все більше впливає на природу, на жаль, переважно негативно.

На території нашої держави екологічна криза почала виявлятися ще з середини 50-х років ХХ ст. Саме цей час умовно можна вважати початком безконтрольного періоду експлуатації природи, а отже, і її забруднення. Щорічно у природний обіг вводилося близько 1,5 млрд тонн первинної сировини. Це майже 30 тонн на кожного громадянина України. У результаті цього обсяг накопичених відходів від добувної, енергетичної, металургійної та деяких інших галузей промисловості становить уже близько 15 млрд тонн. Набагато більше їх потрапило у воду та повітря, які є первинною основою життя. Причина цього – відсутність природоохоронних інституцій та застарілі технології. На додаток – в Україні найбільша у світі розораність земель, безконтрольне використання великої кількості пестицидів, дві третини яких мають чіткий мутагенний ефект. І це за умов, коли близько 40% усіх сільськогосподарських угідь мають слабку здатність до самоочищення, тобто сприяють накопиченню отруйних речовин у життєво важливому шарі орного ґрунту.

## ***IX. LONG-TERM PROJECT WORK***

**Prepare projects on the following topics.**

1. During the past two hundred years humanity has invented powerful technologies having destructive impact on the environment.
2. Environmental damage through Ukrainian history.
3. Kharkiv through history and its natural environment.

## ***X. SPOKEN ENGLISH (EVERY DAY ENGLISH)***

### **1. Remember!**

Від вміння прощатися багато залежить. Можна так розлучитися, що вашому співрозмовнику більше не захочеться з вами зустрічатися, або, навпаки, він буде всіляко прагнути нової зустрічі.

Що треба пам'ятати:

Ніколи не прощайтеся різко, раптово. Співрозмовника треба підготувати до закінчення розмови. Звичайно на прощання кажуть один одному що-небудь приємне на зразок:

It was nice meeting you. (Було приємно зустрітися)

або:

I've really enjoyed talking to you. (Мені було так приємно поговорити з вами).

Зверніть увагу на те, що останню фразу можна використовувати тільки в тому випадку, коли співрозмовники зустрічаються вперше. А зараз наведемо приклад „найвищого пілотажу” в мовному етикеті. Уявіть собі, що ваш співрозмовник дуже балакучий і вам треба якось зупинити його та попрощатися. Яку фразу ви би використали?

I'm afraid I need to be leaving. (Боюся, що мені треба йти)

I'd better be going, it's 6 o'clock. (Я, мабуть, піду, вже 6 година)

Мабуть, обидва варіанти не будуть досить ввічливими. Проте такі фрази як:

I've taken up too much of your time already.

(Я і так забрав у вас багато часу)

або:

Let me leave you so you can get back to your work.

(Мабуть, залишу вас, щоб ви могли повернутися до своєї роботи) будуть досить коректними. Ну, а способів сказати „до побачення” дуже багато:

Good bye. Good bye for now. Bye-bye. Bye. So long. See you later (next week). Later. Good night. Keep well. Take care. Take it easy.

Якщо ви прощаєтесь з офіційною особою або людиною старшою за вас віком або положенням, не витончайтесь у красномовстві, скажіть просто **Good bye** і тоді вже, напевно, не потрапите в незручне положення.

## 2. Speech patterns.

### Parting (Good-bye).

Good bye. Bye-bye. See you. Keep well. Take care. Good luck. So long.  
Bye for you! I kiss you good-bye. Give my love to ...

Thank you for coming.	Спасибі, що прийшли.
Thank you for a wonderful evening.	Спасибі за чудовий вечір.
Thank you for the invitation.	Спасибі за запрошення.
Let's meet next week, Sunday!	Давайте зустрінемося наступного тижня в неділю.
Let's keep in touch.	Давайте підтримувати зв'язок.
Let's hope for the meeting.	Давайте сподіватися на зустріч.
Let's hope for the best.	Будемо сподіватися на краще.
Let's meet soon.	Давайте зустрінемося найближчим часом.
It was nice talking to you.	Було приємно поговорити з вами.
It was great meeting with you.	Я отримав незабутнє задоволення від зустрічі з тобою.
It was a pleasure to talk with you.	Було приємно поговорити з вами.
It was a pleasure to see you.	Було приємно побачити вас.
It was an enjoyable evening!	Ми чудово провели вечір!
It was a wonderful trip!	Була чудова поїздка.
It is really too late.	Дійсно, дуже пізно.
I am sorry to part with you.	Шкода розставатися з вами.
I am very sorry about it.	Мені дуже шкода.
I am afraid I need to be leaving.	Боюся, що мені потрібно йти.
I'm going to be late.	Я спізнююся.
I must hurry.	Я повинен поспішати.
I must be going.	Настав час іти.
I must be going, urgent business.	Настав час іти, термінова справа.
I should be going, it's getting late.	Настав час іти, уже пізно.
I'd better be going. It's 10 o'clock.	Мені пора. Уже 10 година.
I've taken too much of your time.	Я відняв у вас багато часу.
I kiss you. Good bye.	Цілую. До побачення.
Remember me to your aunt.	Передайте привіт вашій тітці.

Give my love to your uncle.	Передайте привіт вашому дядькові.
My best regards to your kids.	Привіт дітям.
Have a comfortable journey.	Щасливої подорожі!
Have a good time.	Бажаю добре провести час!
Have a happy holiday.	Гарних канікул!
Have a happy landing.	М'якої посадки!
Have a happy week end.	Бажаю добре провести уїк-енд!

### 3. Dialogues and jokes to be remembered

\*\*\*

- Thanks for a wonderful evening, Katia. I had a great time.
- Me too. Let's meet next week and see a new movie.
- Sure thing. See you later.
- Take care.

\*\*\*

- Gosh, I'm going to be late if I don't hurry. Nice talking to you, Irvin.
- Same here. Take it easy.
- You, too. Till tomorrow.

\*\*\*

- Have you seen Helen lately?
- Not since last party. I heard she went to India for a vacation.
- Really? I didn't know that.
- Well, let me run. Let's keep in touch. So long.
- Bye for now.

\*\*\*

- I must be going, urgent business. It was a pleasure.
- The pleasure was mine. Hope we'll meet soon. Remember me to Jane.
- She will be happy to hear from you. Do come and visit us next weekend.
- Thank you, by all means. I'll give you a ring on Friday and we'll finally agree.
- See you on Saturday.
- Till Saturday.

\*\*\*

- Dear colleagues! We are so sorry to part with you.
- Nothing can be done. The conference is over and we are leaving.
- Thank you so much, hope you'll come next year again.
- We'd like to. You've been most hospitable.
- Good bye!
- All the best.

\*\*\*

(The door bell rings)

- Who's there?
- It's me, your doctor.
- Sorry, I can't see you, doctor, I'm feeling not well. Good bye.

\*\*\*

- I hate saying good-bye, John.
- Do you? I can stay for while.
- I'd better say "See you later..."

#### 4. Translate in writing

\*\*\*

- Мені так не хочеться прощатися з тобою, але якщо я не поквалюсь, то запізнюсь.
- Нічого не поробиш (Nothing doing). Було приємно побалакати з тобою. Сподіваюсь, ти знову зайдеш наступного тижня.
- Добре, я зателефоную і ми домовимось.

\*\*\*

- Я повинна йти – термінові справи. Було дуже приємно поспілкуватися з вами.
- Мені теж було дуже приємно.
- Сподіваюся, ми незабаром побачимось.
- Будемо сподіватися на краще.
- Побачимось!
- Побачимось!

\*\*\*

- Ой! Я спізнююся. У мене зустріч з менеджером через годину.
- Нічого не поробиш (nothing doing). Щасливо!
- Я зателефоную тобі ввечері.
- Буду чекати з нетерпінням твого дзвінка. (I'll be looking forward to ... )

\*\*\*

#### 5. Situation for spontaneous projects.

1. You are the head of the Ukrainian department of the ecological pressure group "Young Generation". You have a sitting of your members to decide the list of those to be invited to the jubilee meeting of your group. You send invitation and call famous ecologists to participate in your jubilee meeting. Some accept invitation, some refuse.
2. You fall in love with a student of your group. But she doesn't pay attention to you. She is busy only with the studies and researching of greenhouse gases. You tried several times to invite her to different places, but you were not successful.

3. You are at the conference on the History of ecology. A number of scientists from different countries came to participate at the conference. During the coffee-break you get acquainted with many participants and invite them to Ukraine, Kharkiv, to visit this city and to get acquainted with ecological researches at your University.

## **TEST-REVIEW II**

### **Task I. Максимальна кількість балів:5**

*Choose the correct word to complete the sentences.*

1. Ecology ... my favorite subject.

- A) has                      C) was  
B) are                      D) is

2. Ancient people ... in various religions.

- A) believed              C) believe  
B) was believed      D) has been believed

3. Settler ... a person who has come to live in a newly developed country.

- A) are                      C) were  
B) is                        D) has been

4. Water ... necessary for survival.

- A) were                    C) is  
B) are                      D) will

5. The awareness of the ecological problems ... to survey the nature for future generations.

- A) helped                C) was helped  
B) is helping            D) will help

### **Task II. Total 5**

*Translate into English*

1. Екологія, як наука, почала розвиватися з часів промислової революції.
2. Я ніколи не приймав участі у міжнародній конференції з історії забруднення довкілля.
3. Людина почала руйнувати довкілля з давніх часів.
4. Населення землі зараз сягає критичного рівня.
5. Я вже прочитав розділ про ерозію ґрунту.



5. Butter contains a lot of ...

- A) pesticides                      C) milk  
B) fat                                D) hydrogen

### **Task V. Total 5**

*Compose questions with proposed question-words.*

1. Life expectancy has been growing in modern world. (Where...?)
2. The elephants and the buffalos almost disappeared thanks to our ancestors. (Who...? Why...?)
3. Many communities today burn down trees to clear land for growing crops. (Why...?)
4. The Dodo has no natural predators and never developed the ability to fly. (What...? Who...?)
5. Wood comes from trees. (What...?)(common)

### **Task VI. Total 5**

*Compose sentences using the following words.*

1. Since, times, many, 1999, to, the, UK, has, travelling, has, she, been.
2. Man, did, modern, civilization, to development, to, damage, much, environment, the, due, the.
3. Environment, ruins, style, life, the modern, the.
4. Ancient, were, people, friendly and lived, environmentally, nature, harmony with, in.
5. Global, the, world, a, village, now, is.

### **Task VII. Total 5**

*Give 3 forms of irregular verbs and compose 5 sentences with them.*

- |                  |             |
|------------------|-------------|
| 1) to be         | 6) to have  |
| 2) to understand | 7) to speak |
| 3) to burn       | 8) to leave |
| 4) to fly        | 9) to break |
| 5) to grow       | 10) to come |

## UNIT 3. KINDS OF POLLUTION



### I. GLOSSARY

**Activity 1. Read and remember the following words, compose sentences of your own with them.**

1. affect (v) – вражати; впливати
2. alarm (v) – піднімати тривогу; хвилювати; тривожити
3. annoying (adj) – той, що дратує
4. auditory sensation (n) – слухове сприйняття
5. be aware of – усвідомлювати; знати
6. cause (v) – викликати; бути причиною
7. constant exposure to noise – постійний вплив шуму
8. contaminate (v) – заражати; псувати; забруднювати
9. decibel = unit for measuring relative intensities of sounds – децибел
10. dispose of (v) – видаляти; позбуватися
11. disturb (v) – тривожити; порушувати рівновагу
12. diminish (v) – зменшувати; понижувати; слабшати
13. discharge (v) – випускати, зливати, викидати
14. hit (v) – ударяти; уражати
15. leak (v) – пропускати воду; просочуватися
16. litter (n) – сміття, бруд
17. noise (n) – шум; звук
18. omnipresent=widespread (adj) – розповсюджений
19. persuade (v) – переконувати (of; in); відговорювати (from)

20. plant (n) – рослина; завод, електростанція
21. ruin (v) – руйнувати; знищувати
22. restrict (v) – обмежувати; заключати (у межі)
23. release (v) – звільняти; спускати; скидати
24. scatter (on, over) (v) – розкидати; посипати (with)
25. sewage (n) – стічні води
26. sonic pathology (n) – звукова патологія
27. spill (spilt, spilled) (v) – проливати; розсипати
28. well (n) – свердловина
29. WHO – World Health Organization

## **II. VOCABULARY CHECK**

### **Activity 1. Give English equivalents of the following.**

1. забруднювати навколишнє середовище
2. не смітити
3. переконувати кинути палити
4. впливати на природу
5. видаляти пестициди
6. зливати нафту
7. отруювати воду
8. руйнувати навколишнє середовище
9. сира риба
10. викидати добрива в ріку
11. виділяти дим в атмосферу
12. шкідливий вплив на життя людини
13. озоновий шар
14. використовувати багато палива
15. порушувати баланс в живій природі

### **Activity 2. Match the following words with their explanations.**

concern (n)	get, make, say or given again
affect (v)	causing harm
restore (v)	run over the side
external (adj)	bring back into use
spill	outside, situated on the outside
renewable	to have an influence or impression on
harmful	smth. in which one is interested or which is important
facilities	throw or put in various directions

sewage	set free
to release	quality which make things easier
to scatter	waste organic matter, etc carried off in sewers

### III. GRAMMAR REVIEW

#### Види прикметників та утворення ступенів їх порівняння

Види прикметників	Позитивний ступінь	Вищий ступінь	Найвищий ступінь
<b>1. односкладові</b>	long	longer	the longest
	big	bigger	the biggest
	hot	hotter	the hottest
<b>2. двоскладові прикметники:</b>	easy	easier	the easiest
а) що закінчуються на -у, -er, -le, -ow	clever	clever	the cleverest
	simple	simpler	the simplest
	narrow	narrower	the narrowest
б) з наголосом на другому складі	polite	politer	the politest
	severe	severer	the severest
<b>3. багато-складові прикметники</b>	beautiful	more beautiful	the most beautiful
	important	more important	the most important
<b>4. винятки</b>	good (хороший)	better(кращий)	the best
	bad (поганий)	worse(гірший)	(найкращий)
	little(маленький)	less(менший)	the worst
	much,many(багато)	more(більший)	(найгірший)
	far(далекий)	farther(більш далекий)	the least
			(найменший)
			the most
			(найбільший)
			the furthest, farthest
			(найбільш далекий)

#### Форми вищого та найвищого ступенів прикметників, які відрізняються за своїм значенням

Позитивний ступінь	Вищий ступінь	Найвищий ступінь
old- старий	1) older-старіший за... 2) elder-старший (в родині)	1) the oldest-найстаріший 2) the eldest-найстаріший

late- пізній	1) later- пізніший 2) latter-останній з двох (по порядку)	1) the latest-найпізніший (за часом) 2) the last –найостанніший (по порядку)
far-далекий	1) farther - дальший (про відстань) 2) further –дальший (по порядку)	1) the farthest-найдальший (про відстань) 2) the furthest – найдальший (по порядку)
near -близький	nearer- ближчий	1) the nearest - найближчий 2) the next – найближчий (по порядку), наступний

### Exercise 1.

**Complete the descriptions. Use the comparative or superlative form of the adjective:**

South of Sydney, Bondi is the ... (easy) beach to reach. It has the ... (wide) range of facilities, but at weekends it's ... (crowded) and ... (noisy) than the other beaches. South of Bondi, Tamarama is one of Sydney's ... (beautiful) beaches, but also one of the ... (dangerous) for swimming. For children, Coogee Beach is both ... (safe) and ... (suitable) than Tamarama.

There are several beaches north of Sydney. Manly is the ... (accessible) and the ... (good) for surfing. Palm Beach is ... (far) from Sydney than Manly, and it takes ... (long) to get to, so it's not surprising that it's ... (peaceful) than the others.

### Порівняльні конструкції

As+	<b>П р и к м е т н и к</b>	+as	Такий самий+прикметник+ +як і...	This tree is as tall as that one.-Це дерево таке ж високе, як і те.
Twice as +		+as	Удвічі+прикметник у вищому ступені+ніж	This medicine is twice as effective as that one.- Ці ліки в два рази ефективніші, ніж ті.
As+		+as possible	Як можна+ +прикметник у вищому ступені	You must do your work as good as possible.-Ви повинні виконати свою роботу як най- краще.

Not so+	П Р И К М Е Т Н И К	+as	Не такий+прикметник+як	This way is not so long as the way to the West.-Цей шлях не такий довгий як на захід.
The +...		...+the +	Чим+прикметник у вищому ступені, тим+прикметник у вищому ступені	The higher they rise, the thinner the air becomes.- Чим вище вони підіймаються, тим більш розрідженим стає повітря.

### Exercise 2.

**Work in pairs. Compare Australia, Canada, and the USA, using the facts in the table. Use the comparative or superlative form of the adjective in the box:**

**Example:** *Washington has a lower population than Ottawa.*

big	high	low	many	small
-----	------	-----	------	-------

	<b>Australia</b>	<b>Canada</b>	<b>USA</b>
Area (sq.km)	7.6 million	9.9 million	9.3 million
Population	17.3 million	26.8 million	308 million
Population of the capital	250,000 (Canberra)	819,263 (Ottawa)	606,900 (Washington DC)

### Exercise 3.

**Think of a city you know well. Describe it to your class but don't give the name. Compare it to Sydney. The class must try to guess the city.**

### Exercise 4.

**Complete the following short texts by writing the appropriate form of the adjective or adverb and adding any other necessary words.**

- South America, the fourth (large) continent in the world, stretches from Point Gallinas on the Caribbean coast to Cape Horn,(southerly) point of Horn Island. Among its features are the Andes mountain range which, at over 7,000 kilometres, is (long) the distance from London to Bombay, the world's (high) city, La Paz in Bolivia, and one of the world's (important) resources – the Amazonian rainforest. With an area of seven million square kilometres, this is twelve times (big) than France. It is a major source of oxygen and is home to half of all known living species, including the anaconda, the world's (heavy) snake, and the two-toed sloth, (slow) animal. The continent experiences extremes of weather.

Parts of Columbia are among (wet) in the world, while the Atacama Desert in Chile, which has an average of only 0.5 mm of rain a year, is (dry) place on Earth.

2. Railways have several advantages over road transport. Running on tracks, they use (little) fuel than cars or lorries and allow heavy loads to be moved (efficiently). Trains can also transport goods and passengers at (great) average speeds and with (few) hold-ups than road transport, making journeys (short) and (stressful). Rail networks are (commonly) used in Japan and Europe than in the USA, and Russia has (high) passenger railway usage of all. The (fast) scheduled train service in the world is the French TGV's 254kph journey between Massy and St Pierre.

### Past Tenses.

#### Past Simple. Past Continuous.

##### Past Simple

I/ you/he/ she/ it/ we/ they **worked**

I/ you/he/ she/it/we/they/**did not work**

**Did I/ you/he/she/it/ we/ they work?**

I/he/she/it **was** late

You/ we/ they **were** late

**Was I/ he/ she/ it late?**

**Were you/ we/ they late?**

#### Вживання

1.Past Simple це форма для опису минулих подій, для вираження ряду послідовних або повторюваних дій у минулому, часто вживається зі словами: *yesterday- учора, last week- минулого тижня, the other day-на днях, і т.д.*

2.Past Simple вживається для вираження дії або властивості, що характеризувала підмет у минулому.

3.У додаткових підрядних реченнях у непрякій мові, коли дієслово у головному реченні стоїть у Past Simple.

The standard of living in Europe went up **during the 1960s.**

Ted Turner launched CNN **in 1980.**

Alexander Graham Bell **invented** the telephone.

He said he **didn't** understand the problem.

### Past Continuous (Progressive)

I was working.

You/ we/ they were

working.

He/she/it was working.

Was I working?

Were you/we/they working?

Was he/she/it working?

I was not working.

You/we/they were not working.

He/she/it was not working.

### Вживання

1. Дія відбувалася у визначений момент у минулому.

e.g. He was working on the report all day long.

During the 1990s computer scientists were trying to deal with the millennium bug.

2. У підрядних додаткових реченнях, якщо дієслово –присудок головного речення вжито у минулому часі. Past Continuous часто вживається з дієсловами, що означають рух (to go, to come) для позначення дії, яка була майбутньою стосовно минулого.

e.g. She said she was coming to see you.

### Exercise 5.

Put the verbs in brackets into the correct past forms:

Christopher Columbus ... (be/born) in Italy in 1451. He ... (work) as a woolen cloth weaver with his father before he ... (begin) his nautical career at the age of 22. After several merchant voyages he ... (settle) in Lisbon, Portugal in 1478. By this time he ... (teach) himself Portuguese and Latin and ... (read) many geographical and navigational books. In 1481 he ... (marry) Felipa Parestrell. They ... (have) one son, Diego. They ... (be/married) for two years when his wife ... (die). At this time he ... (work) for John II of Portugal. Columbus ... (always/ wish) to sail around the world westward but John II wouldn't agree. Finally King Ferdinand and Queen Isabella of Spain ... (decide) to finance the voyage. He ... (set off) for the first time in April 1492. There ... (be) three ships: the Nina, the Pinta and the Santa Maria and a crew of 90 men. They ... (have) many false alarms before they finally ... (spot) the "New World" at 02.00 on Friday the 12<sup>th</sup> of October, 1492. Columbus ... (make) three more voyages after this. He ... (retire) to Valladolid 12 years after his first voyage and in 1517 he ... (die) there.

### Exercise 6.

Translate into English.

1. Олександр Великий народився у 356 році до н.е. в Македонії.

2. Він став імператором , коли йому було 20 років, і продовжив роботу, яку починав його батько.

3. У 334 році до н.е. він вторгся у Персію, а до свого тридцятиліття він вже завоював більшу частину південно-західної Азії.
4. Але, поки він планував як захопити Аравію, у нього почалася гарячка, і незабаром він помер.
5. Спеціалісти з глобального потепління зробили перші невтішні прогнози впливу зміни клімату на основні шість біологічно багатих районів світу, які займають 20% суші.
6. Дослідження в Європі, Австралії та Південній Америці показали, що види рослин і тварин, які живуть у горах, мають більші шанси вижити, тому що вони можуть перебратися вище в гори, де холодніше.
7. Вчені дійшли до висновку, що глобальне потепління підвищить температуру землі на 7°C- 10°C , що значно вплине на запаси продуктів харчування та води.
8. Це озеро забруднювалось хімічними відходами паперово-целюлозного комбінату на протязі багатьох років, і тепер потребує захисту.
9. Грінпіс допомогла багатьом жителям Бразильських лісів зберегти свої землі.
10. Поки вони добирались додому, вони побачили великі темні хмари і через 10 хвилин пішов сильний дощ.

#### ***IV. PRE-TEXT DISCUSSION***

##### **Activity 1. Do you know that:**

- Even changes in distant parts of the world and its atmosphere affect us and our environment?
- The earth's climate is expected to heat by 1 to 3.6 degrees Celsius over the next century?
- Forests are disappearing at the rate of 20 hectares a day?
- Every tree absorbs an average of 4 kilograms of carbon dioxide from the air every day?
- Every tonne of recycled newsprint – about 2000 daily papers – is equivalent to 19 trees?
- The biggest cause of air pollution is the motor car?
- 95% of Britain's river length is of good or fair quality; the European Community average is 75%?
- Level of lead in the air can be reduced by pollution control in industry and by reductions in the use of lead in petrol?

**Activity 2. Make up dialogues of your own, discussing the information given in the part “Do you know that”.**

**Activity 3. Give your opinion on the following**

1. The influence of pollution on our life.
2. Why is environmental pollution becoming increasingly widespread ?
3. 70% of population in Ukraine live in environmentally dangerous areas.

## ***V. READ AND TRANSLATE TEXT 3A***

**Text 3A.**

### **“Environmental pollution”**

Mankind long believed that whatever we did, the Earth would remain much the same. We know now that it is untrue. Nature is under threat. One country's pollution can be every country's problem. We have a moral duty to look after our planet and hand it in good order to future generations. So we all need to work together to safeguard our environment.

Environment is everything that is external to an organism. A human being's environment includes such factors as temperature, sunlight, food supply, other people, etc.

Environmental pollution is a term that refers to all the ways by which people pollute their surroundings. The air is polluted with gases and smoke, the water is poisoned with chemicals and other substances, and the soil is damaged with too many fertilizers and pesticides. People also pollute their surroundings in other various ways. For example, they ruin natural beauty by scattering junk and litter on the land and in the water. They operate machines and motor vehicles that fill the air with disturbing noise. Nearly everyone causes environmental pollution in some way.

Environmental pollution is one of the most serious problems facing humanity today. Air, water, and soil – all harmed by pollution – are necessary to the survival of all living things. Badly polluted air can cause illness and even death. Polluted water kills fish and other marine life. Pollution of soil reduces the amount of land that is available for growing food. In addition, environmental pollution also brings ugliness to our naturally beautiful world.

People have always caused some environmental pollution. Since prehistoric times, they have put wastes in water and caused smoke by burning fuel. But early people did not live crowded together, and they had no machines that caused pollution. Thus, pollution was light and spread out over large areas.

Pollution problems first arose during ancient times, when large numbers of people began living together in cities. As cities grew, pollution grew with them.

The development of crowded industrial cities in the 1700s and 1800s made pollution a major problem. People and factories in these cities put huge amounts of pollutants into small areas. During the 1900s, urban areas continued to develop, and automobiles and other new inventions made pollution steadily worse.

Coal was used to power most of the factories and to heat most of the homes in the cities. As a result, the air over such industrial cities as London became filled with huge amounts of smoke and soot. In addition, poor sanitation facilities allowed raw sewage to get into water supplies in some cities. The polluted water caused different illnesses.



*Fig. 7. Coal mining pollution*

Since the 1950s, air pollution from coal burning has greatly reduced in most parts of the world. Nearly all railroads and many industries and home heating plants now use cleaner fuels, such as oil and natural gas. In addition, many industries that still use coal have taken steps to control the pollution from their furnaces.

Despite these improvements, environmental pollution has become increasingly serious and widespread. Technological advances have helped this increase. In addition, the population of urban areas has grown. More people means more wastes of every kind.

Since the late 1960s, millions of people have become alarmed by the dangers of pollution. Dramatic environmental tragedies have pointed up the seriousness of the problem.

During the late 1970s, an explosion at a local chemical plant in Sevesco, Italy released a poisonous gas called dioxin. Hazardous chemical wastes that leaked from a former disposal site in Niagara Falls, New York, caused many families to move from homes in the area. In 1994, a leak of poisonous gas from a pesticide plant in Bhopal, India, killed over 2,000 people.

In 1986, an explosion and fire occurred at a nuclear power plant in Chernobyl, near Kiev, in Ukraine. The accident released large amounts of radioactive wastes into the atmosphere and was a real environmental tragedy.

The largest oil spill in North American waters occurred in 1989. A United States tanker hit a reef near the port of Valdez, Alaska and spilled nearly 11 million gallons (42 million liters) of crude oil into the ocean, destroying wildlife. The world's largest oil spill occurred during the Persian Gulf war (1991), when Iraq deliberately released about 465 million gallons (1.75 billion liters) of oil into the Persian Gulf. In addition, Iraq set about 650 oil wells on fire, polluting the air over Kuwait. The last oil well fire was extinguished in November 1991.

As political changes swept across Eastern Europe in 1989, concern grew about the region's environmental problems. Heavy industries there have operated without pollution controls, resulting in dying forests, polluted rivers and lakes, and serious health problems.

Everyone wants to reduce pollution. But the pollution problem is as complicated as it is serious. It is complicated because much pollution is caused by things that benefit people. For example, exhaust from automobiles causes a large percentage of all air pollution. But the automobile provides transportation for millions of people. Factories discharge much of the material that pollutes air and water, but factories provide jobs for people and produce goods that people want. Too much fertilizer or pesticide can ruin soil, but fertilizers and pesticides are important aids to the growing of crops. Thus, to end or greatly reduce pollution immediately, people would have to stop using many things that benefit them. Most people do not do that. But pollution can be gradually reduced in several ways. Scientists and engineers can work to find ways to lessen the amount of pollution that such things as automobiles and factories cause. Governments can pass and enforce laws that require businesses and individuals to stop, or cut down on, certain polluting activities. And – perhaps most importantly – individuals and groups of people can work to persuade their representatives in government, and also persuade businesses, to take action toward reducing pollution.

Groups of citizens throughout the world have formed organizations to fight pollution. Most of these organizations are concerned with local problems. But many of them also work on regional, national, and international pollution problems. Private groups are responsible for much of the action governments and industries have taken to control pollution. They call public attention to pollution problems and put pressure on government and industry officials. Each year, millions of people celebrate Earth Day on April 22. The purpose of Earth Day is to increase public awareness of environmental problems.

## **VI. COMPREHENSION CHECK**

### **Activity 1. Do the false/true activity**

1. The problem of pollution became a major one at the end of the 20<sup>th</sup> century.
2. Environmental tragedies have pointed up the seriousness of the pollution problem.
3. Pollution is considered to be both a benefit and a killer.
4. The lack of pollution control has resulted in many tragedies.
5. The Earth day is celebrated on the 1<sup>st</sup> of January and only in Ukraine.
6. The pollution hasn't been stopped because of the idling of ecologists.
7. Groups of citizens have formed different social organizations to cope with pollution.
8. The largest oil spill happened in Ukraine in 1986.
9. Political changes in Eastern Europe in 1989 didn't concern the environmental problems.
10. Nearly all railroads and industries now use coal for their operation.

### **Activity 2. Look through text 3A carefully. Then complete the following to make suitable sentences according to the meaning of the text.**

1. ur natural beauty is \_\_\_\_\_.
2. People pollute the air with \_\_\_\_\_.
3. Many farmers use home heating plans operation on \_\_\_\_\_.
4. The "Greens" try to persuade the governments to draw \_\_\_\_\_.
5. Poisoned fish and dirty water are of \_\_\_\_\_.
6. Pollution of soil, air, water brings harm to \_\_\_\_\_.
7. Some companies damage the soil with \_\_\_\_\_.
8. Vehicles poison the air with the \_\_\_\_\_.
9. The purpose of the "Earth Day" is to increase public \_\_\_\_\_.
10. The polluted water \_\_\_\_\_.

## **VII. DISCUSSION**

### **Activity 1. Define the logical parts of text 3A entitling each of them.**

### **Activity 2. Work in pairs. Ask and answer the questions on text 3A.**

### **Activity 3. Translate in writing and reproduce.**

\*\*\*

- Does WHO consider noise pollution a big problem?
- Certainly. Nowadays noise is becoming a major pollutant. Of all forms of pollution, the most aggressive is the constant noise in the street, in the factory and even inside a building.

- What definition do the specialists give to the term of noise pollution?
- They say: «Although omnipresent, noise is a rather subjective phenomenon producing an auditory sensation considered to be annoying».
- Do they consider it to be simply a source of annoyance? Don't they think a constant exposure to noise is a potential cause of injury to one's health?
- You see, in short, we are chronically subjected to noise which usually varies between 35 and 60 decibels with occasional peaks of 90 to 100. But whether such a noise is harmful to health, no scientist has yet taken the responsibility of giving a definite or clear answer to it.
- But in what way do the specialists consider its effect harmful?
- Well, a series of investigations in the USA and Europe gave evidence that noise was a significant factor in certain affections. There doesn't appear to be any real syndrome due to noise, though it may be possible to speak of a so-called «sonic» pathology.

\*\*\*

- Привіт!
- Давно тебе не бачив(ла). Як справи?
- Життя йде своїм шляхом. А як ти?
- Все добре.
- А що ти читаєш?
- Я майбутній еколог і читаю публікації про екологічні катастрофи.

\*\*\*

- Які екологічні катастрофи ти знаєш?
- Що ти маєш на увазі? (What do you mean?) Катастрофи в нашій країні або в цілому світі?
- Я хотів(ла) би знати про великі катастрофи за кордоном (abroad).

\*\*\*

- Ти чув(ла) про Чорнобиль?
- Так, мені розповідала мама про цю страшну катастрофу.
- А мій батько приймав участь у ліквідації цієї катастрофи.
- А коли це трапилось?
- В 1986 році на Чорнобильській атомній електростанції трапився вибух і велика пожежа.
- А де це?
- Це поблизу Києва, в Україні. І це була страшна екологічна трагедія.
- Наша країна відчуває (feels) її наслідки і сьогодні, (consequences) через більш ніж 20 років.

**Activity 4. Make up your own dialogues on the theme “Environmental pollution”.**

## **VIII. SKIM TEXT 3B AND GET READY TO SPEAK ABOUT "KINDS OF POLLUTION"**

### **Text 3B.**

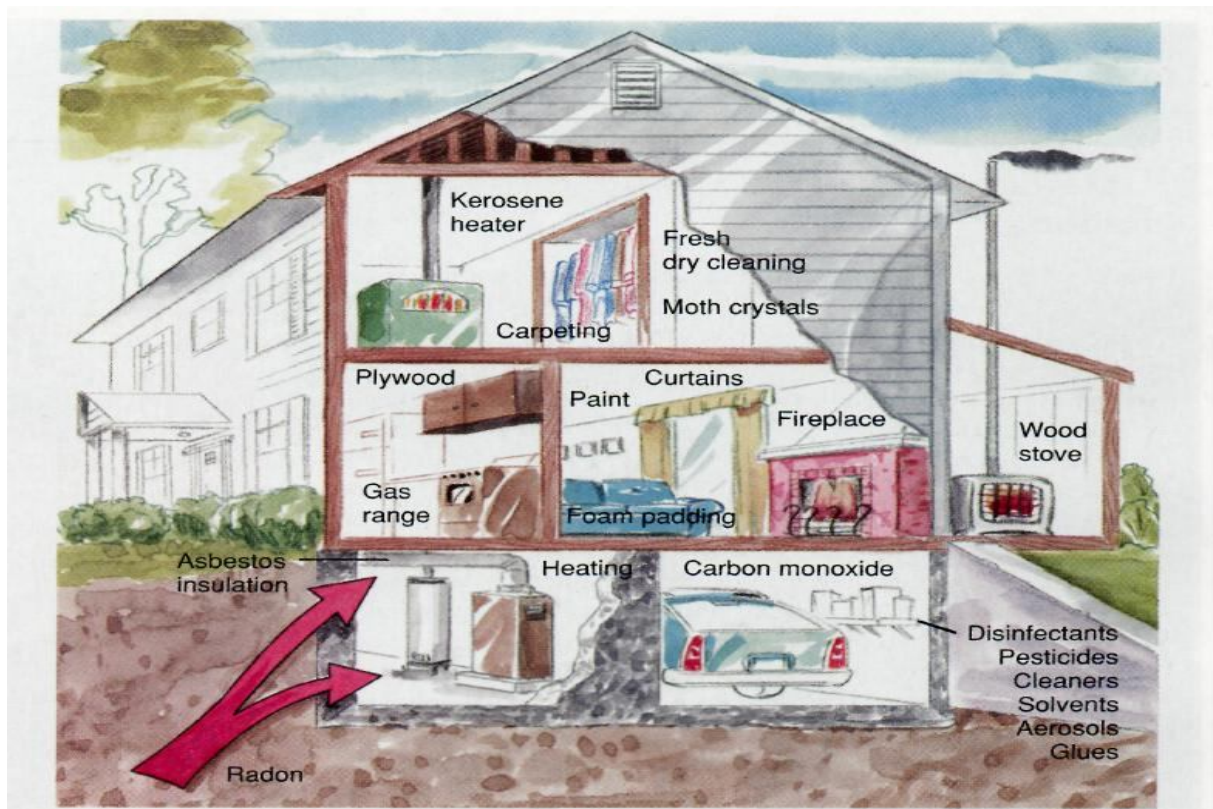
#### **Kinds of pollution**

There are several kinds of environmental pollution. They include air pollution, water pollution, soil pollution, and pollution caused by solid wastes, noise, and radiation.

All parts of the environment are closely related to one another. A kind of pollution that chiefly harms one part of the environment may also affect others.

For example, air pollution harms the air. But rain washes pollutants out of the air and deposits them on the land and in bodies of water. Wind, on the other hand, blows pollutants off the land and into the air.

Most common forms of air pollution are smog and cigarette smoke. In tightly sealed modern buildings, many small sources of air pollution can become a problem.



### **Sources of Indoor Air Pollution**

Most of the gases and particles that people put into the air come from *combustion* (burning) processes. The furnaces in factories, homes, and office buildings; the engines in automobiles, airplanes, and other motor vehicles; and the burning of trash are the chief sources of pollution from combustion. The pollutants from these sources have a wide variety of effects, one serious result

of air pollution is its harmful effect on human health. Both gases and particles harm people's eyes and irritate their lungs, worsen such respiratory diseases as asthma, bronchitis and pneumonia. In cities throughout the world, long periods of heavy air pollution dramatically increased illness and death rates.

Poisonous gases in the air can restrict and damage the growth of nearly all kinds of plants. Polluted air even harms such hard and strong materials as concrete and steel. In some cities, statues and other art objects that stood outdoors for centuries have been moved indoors because air pollution threatened to destroy them.

Air pollutants may also affect climate. Some gases, including carbon dioxide, may cause a phenomenon called the *greenhouse effect*. Carbon dioxide, like glass in a greenhouse, allows sunlight to warm the earth but prevents heat from escaping back into space. The greenhouse effect could permanently raise temperatures on the earth, partially melting polar ice caps and causing floods.

In addition, air pollutants may damage the layer of ozone in the atmosphere. The ozone layer protects animals and plants from the sun's harmful ultraviolet light.

Most of the pollutants that people put into water come from treated and untreated sewage, from agricultural drainage, and from industrial wastes. The pollutants reduce valuable supplies of pure, fresh water by upsetting the natural cycles that work to keep water clean. By upsetting the cycles, the pollutants harm animals and plants that live in the water.

Addition of heated water to a body of water also upsets cycles. Heated water can kill animals and plants that are accustomed to living at lower temperatures. It also reduces the amount of oxygen that water can hold. The addition of heated water is called *thermal pollution*. Most heated water comes from industries and power plants that use water for cooling.

Another major pollutant is fuel oil, which enters oceans mainly from oil tankers and offshore oil wells. Such spills ruin beaches and kill birds and marine life.

**Soil pollution** damages the thin layer of fertile soil that covers much of the earth's land and is essential for growing food. Natural processes took thousands of years to form the soil that supports crops. But people can destroy soil in a few years.

**Solid wastes** are probably the most visible forms of pollution. People throw away billions of tons of solid material each year. Much of this waste litters roadsides, floats in lakes and streams, and is collected in ugly dumps. Examples of solid wastes include junked automobiles, tyres, refrigerators, and stoves; cans and other packaging materials; and scraps of metal, paper, and plastic.

Solid wastes present a serious problem because most of the methods used to dispose of them result in some type of damage to the environment.

**Noise pollution** is a problem in urban areas. Loud noises annoy people and can cause damage to hearing. Some studies have linked loud noises with the development of high blood pressure and ulcers.

The amount of **radioactive waste** from nuclear weapons testing and nuclear power plants is increasing. Scientists are studying ways to dispose of these wastes safely and permanently.

**Acid rain** has become an increasingly serious problem. This pollutant forms when moisture in the air combines with nitrogen oxide and sulfur dioxide released by automobiles, by factories, and by power plants that burn coal or oil. The acids pollute lakes, streams, oceans, fish and contaminate drinking water. They also can damage crops, forests, soil, even buildings and statues. In addition, acid rain pollutants sometimes travel long distances, even from one country to another.

## ***SUMMARY WRITING***

**Activity 1. Rearrange and write the following sentences in a paragraph that summarizes the text.**

1. Solid wastes present a serious problem.
2. Most of the pollutants come from treated and untreated sewage.
3. The acids pollute lakes, streams, oceans, fish and so on.
4. Carbon dioxide, like glass in a green house, allows sunlight to warm the earth.
5. The greenhouse effect can cause floods because of polar ice caps melting.
6. Fuel oil enters oceans mainly from oil tankers and offshore oil wells.
7. There are several kinds of environmental pollution.
8. Air pollution harms the air.
9. Smog and cigarette smoke are the most common forms of air pollution.
10. Acid rains have become an increasingly serious problem.

**Activity 2. Translate into English using the dictionary.**

З появою людини на планеті Земля велику роль у глобальній екосистемі стали відігравати взаємовідносини суспільства і природи. Особливо швидко посилюється вплив суспільства на природу у зв'язку з розвитком машинного виробництва.

Завдяки цьому масштаби впливу суспільства на природу поширюються так швидко, що людство поступово перетворюється у потужну

геологічну силу, яка впливає на природні процеси. На всі кругообіги, що здійснюються у природі, людина прямо чи опосередковано має вплив. Під впливом антропогенних факторів відбуваються зміни у природі.

Завойовуючи природу, людство значною мірою підірвало природні умови власної життєдіяльності. Вся планета нині страждає від антропогенного тиску, він виявляється через забруднення навколишнього природного середовища, виснаження природних ресурсів і деградацію екосистем, ґрунтів, хижацьке винищення лісів.

До основних антропогенних забруднювачів докільля, крім шкідливих речовин, що викидаються промисловими підприємствами, пестицидів і мінеральних добрив, що застосовуються в сільському господарстві, забруднень усіх видів транспорту, належать також транспортні та виробничі шуми, іонізуюче випромінювання, вібрації, світлові та теплові впливи.

## ***IX. LONG-TERM PROJECT WORK***

**Prepare projects on the following topics.**

1. Second-hand smoke and its influence on people's life quality.
2. Renewable and nonrenewable sources of energy and their perspective in Ukraine.
3. Noise pollution – the problem that has been brought into sharp focus of attention.

## ***X. SPOKEN ENGLISH (EVERY DAY ENGLISH)***

### **1. Remember!**

Ніщо не коштує нам так дешево і не цінується так дорого, як ввічливість. Як же дякувати по-англійськи? Найпростіше сказати „Thank you” або „Thanks”, але іноді хочеться та і треба вкласти більше у виявлення почуття вдячності і сказати „Ви навіть не уявляєте, як я Вам вдячний ” (**You have no idea how grateful I am**).

Ну і, звичайно, ж дуже важливо слова подяки говорити щиро, дивлячись у вічі співрозмовнику.

Також зазначимо, що на відміну від, наприклад, привітань, слова подяки не треба вибирати в залежності від того, з ким ми говоримо. **Thank you** можна сказати і приятелю, і президенту США.

Але якщо подякувати багато хто вміє, то відповісти на подяку на свою адресу вміє далеко не кожний. І часто тут ми припускаємося однієї дуже грубої помилки: у відповідь на **Thank you** відповідають **Please**.

Запам'ятайте: **Please** – це будь ласка в проханні, пропозиції, пораді, але не в реакції на подяку.

- |                             |                                       |
|-----------------------------|---------------------------------------|
| - Give me your pen, please. | - Дайте мені, будь ласка, свою ручку. |
| - Here you are .            | - Ось, візьми будь ласка.             |
| - Thank you.                | - Дякую.                              |
| - Not at all.               | - Нема за що.                         |

**Not at all** – це лише один спосіб відповісти на подяку.

### 1. Speech patterns.

#### **Thank you very much!**

Thanks a lot, thank you very much, don't mention it, you are welcome, it's a mere nothing, to be grateful

It was my pleasure	Мені було приємно допомогти
You are very welcome	Мені було приємно допомогти
You are more than welcome	Мені було приємно допомогти
It was the least I could do	Нема за що, все що міг.
Think nothing of it	Не треба дякувати
It was nothing	Не треба дякувати
Don't mention it	Нема за що
Any time	Завжди прошу

### 2. Dialogues and jokes to be learnt

\*\*\*

- Would you like some more meat, Robert?
- Yes, thank you, it's really delicious.
- Well, thanks, I'm happy you like it. How about some more salad?
- Be so kind, please. You're a fantastic cook, Irene.
- I appreciate your compliment, but, to tell you the truth, I can cook a few things really well.
- Don't be so modest.

\*\*\*

- Well, I guess I'd better be going. Thanks for the invitation. You have no idea how grateful I am for your advice.
- It was the least I could do. You're more than welcome, Alex.
- And thanks a million for your terrific apple-pie.
- Not at all. By the way here are two pieces for your kids.
- It's so kind of you. They will be happy. Thanks once more and see you again.

\*\*\*

- Many thanks for inviting me to dinner, Mrs. Gray, but I'm afraid I won't be able to come.

- Oh, I'm sorry to hear that. May I ask you why?
- I have a previous commitment.
- We'll certainly miss you. Hope you'll be free next time.
- I hope so.

\*\*\*

- Lots of thanks for the invitation, Bob.
- How did you like the restaurant? Is it a good place to go?
- It's a good place to go, but a terrible place to eat.

\*\*\*

- Hello. Is that Mr. Green? Let me warn you that Billy Smith has a bad cold and he can't come to school.
- Thank you ever so much for warning. Who is this speaking?
- This is my father.

\*\*\*

- Oh, my dear, you have no idea how grateful I am for your present!
- Did you really want to have it?
- That's just what I needed to exchange for what I wanted.

\*\*\*

- Honey, thanks a lot for dinner.
- Don't mention it.
- Could you tell me what was on my plate, in case I have to describe it to the doctor?

\*\*\*

(Mabel returns home from a birthday party)

- Well, Mabel, I hope you kept saying "No, thank you" more often than "Yes? thank you".
- Yes, I did, Mum. When the hosts began saying "Aren't you afraid to get sick of cakes and candies?", I said: "No, thank you" every time.

### 3. Translate in writing

\*\*\*

- Дякую вам за чудовий обід. Все було дуже смачно. Ви чудово готуєте.
- Дякую за комплімент. Я рада, що вам сподобалось.
- Мені б дуже хотілось познайомити вас зі своєю подругою. У мене є ідея. Може, ви прийдете до мене на обід в суботу? Моя мати також непогано готує.
- Дякую за запрошення, Алекс, але у нас на цей час вже призначено зустріч.
- Дуже шкода! А як щодо (how about) наступної суботи?
- Гадаю, ми будемо вільні і прийдемо. Дуже дякую за запрошення. Дуже мило з вашого боку.

\*\*\*

- Ну, мабуть я піду. Дякую за запрошення. Ви навіть не уявляєте, як я вдячний за вашу пораду.
- Не треба дякувати. Завжди вам раді.

\*\*\*

- Я дуже радий, що був присутній на вашій лекції, професоре. Дякую за запрошення, лекція дуже актуальна.
- Я радий, що проблема боротьби із забрудненням повітря вас цікавить.
- Лекція була чудовою.
- Дякую за комплімент.
- Це не комплімент, так вважають усі.

#### 4. Situation for spontaneous projects.

1. You are present at the birthday party of your friend. It's time to part. You thank the hostess and all the guests present for the party, for communicating, for the interesting party.
2. We are at the concert with your friend who insisted on your attending this concert. The concert was wonderful. Your friend is seeing you off and you thank him for the concert, for the pleasure you received at the concert.

### **TEST-REVIEW III**

#### **Task I. Total: 5**

*Choose the correct word to complete the sentences.*

1. Addition of heated water to a body of water is called.....

- |                  |                      |
|------------------|----------------------|
| A) warming       | C) thermal pollution |
| B) cooling tower | D) warm reservoir    |

2. The biodiversity of the various species of life on Earth includes.....

- |                       |              |
|-----------------------|--------------|
| A) plants             | C) factories |
| B) plants and animals | D) food      |

3. Human activities have significantly.... 3/4 of the land surface.

- |                    |                      |
|--------------------|----------------------|
| A) are changing    | C) changed           |
| B) will be changed | D) has been changing |

4. Biodiversity is the source that ... life on land and under water.

- |                 |                  |
|-----------------|------------------|
| A) sustained    | C) is sustaining |
| B) will sustain | D) sustains      |

5. Uncontrollable fires ... many parts of India over the past decade.

- A) have devastated                      C) are devastating  
B) devastate                                D) will be devastating

### Task II. Total 5

*Translate into English*

1. Деградація лісів у країнах тропічних та субтропічних широт є важливим чинником глобальних викидів парникових газів.
2. Однак наслідки деградації лісів ще недостатньо досліджені та погано вивчені.
3. Міжнародні програми скорочення викидів зосереджені на вирубці лісів, яку легше виявити і, отже, більш легко контролювати.
4. Для кращого розуміння та використання можливостей для боротьби зі зміною клімату необхідно покращити знання про викиди парникових газів внаслідок деградації лісів.
5. Дуже важливо моніторити та розуміти лісові пожежі за допомогою супутникових даних, щоб ми могли успішно управляти ними у більш теплому світі.

### Task III. Total 10

*Give English equivalents of the following.*

- |                         |  |
|-------------------------|--|
| 1. процес горіння       | 11. захворювання органів дихання             |
| 2. транспортні засоби   | 12. астма, бронхіт та пневмонія              |
| 3. спалювання сміття    | 13. отруйні гази в повітрі                   |
| 4. джерела забруднення  | 14. знищення.                                |
| 5. забруднюючі речовини | 15) вдячний за вашу пораду                   |
| 6. наслідки             | 16) мені було дуже приємно з вами поговорити |
| 7. шкідливий вплив      | 17) боюся, мені потрібно йти                 |
| 8. здоров'я людини      | 18) Дуже мило з вашого боку                  |
| 9. подразнювати легені  | 19) Дякую. - Нема за що.                     |
| 10. непоправима шкода   | 20) переказуйте вітання.                     |

### Task IV. Total 5

*Choose the necessary word or expression to complete the following sentences.*

1. Air pollutants may damage the layer of ozone in the ...  
A) streets                                      C) houses  
B) rivers                                        D) atmosphere
2. The ozone layer protects ... from the sun's harmful ultraviolet light.  
A) animals                                      C) plants  
B) animals and plants                      D) trees

3. Most of the pollutants that people put into water come from ...

- A) homes                      C) animals  
B) fires                        D) treated and untreated sewage

4. The pollutants ... valuable supplies of pure, fresh water by upsetting the natural cycles.

- A) reduce                      C) disappear  
B) damage                     D) deposit

5. By .... the cycles, the pollutants harm animals and plants that live in the water....

- A) creating                    C) establishing  
B) managing                  D) upsetting

### **Task V. Total 5**

*Compose questions with proposed question-words.*

1. Environmental Monitoring is based on scientific observations (What ...on?)
2. There are numerous examples of knowledge-based regulations that protect the environment from pollution. (What...?)
3. Many communities today burn down trees to clear land for growing crops. (Why...?)
4. Global heating contributes to forest fires (What...?)
5. Increase in forest fires in recent years is due to increased air temperatures. (Why...?)

### **Task VI. Total 5**

*Compose sentences using the following words.*

1. Since, times, many, 1999, to, the, UK, has, travelling, has, she, been.
2. The greenhouse emission artificial of gas globally increasing since the has been industrial era
3. Environment, ruins, style, life, the modern, the.
3. Has ecosystem in species urbanization a decline caused in the vegetation and a decrease in diversity
4. Global, the, world, a, village, now, is.

### **Task VII. Total 5**

*Give 3 forms of irregular verbs and compose 5 sentences with them.*

- |                  |             |
|------------------|-------------|
| 1. to be         | 6. to have  |
| 2. to understand | 7. to speak |
| 3. to burn       | 8. to leave |
| 4. to fly        | 9. to break |
| 5. to grow       | 10. to come |

## UNIT 4. AIR POLLUTION



### *I. GLOSSARY*

**Activity 1. Read and remember the following words, compose sentences of your own with them.**

1. ability (n) – здатність, можливість
2. accept (v) – приймати, допускати
3. acid(n) – кислота
4. attach (v) – прикріплювати, прикладати
5. burn (v) – горіти, згорати
6. compose (v) – складати
7. constitute (v) – складати
8. converter (n) – конвертор, перетворювач
9. disperse (v) – звільняти, розподілювати
10. expose (v) – піддавати, виставляти
11. headache (n) – головний біль
12. identify (v) – впізнавати, упізнавати, розпізнавати
13. impaired (adj) – уповільнений, ослаблений
14. incorporate (v) – з'єднувати, містити
15. inoperable (adj) – непрацюючий, неоперабельний
16. irritate (v) – дратувати, викликати запалення
17. lead (n) – свинець
18. mixture (n) – суміш
19. persistent (adj) – наполегливий
20. quality (n) – якість

21. quantity (n) – кількість
22. range (v) – діапазон
23. reduce (v) – зменшувати, скорочувати
24. release (v) – звільняти, позбавляти, випускати
25. smelt (n) – плавлення, розплавлення  
smelt (v) – плавити, розплавити
26. tissue (n) – тканина
27. trash (n) – покидь, мотлох, сміття, макулатура
28. vapor (n) – пара
29. troposphere (n) – тропосфера
30. molecule (n) – молекула
31. evidence (n) – доказ
32. weather (v) – вивітрювати
33. adverse (adj) – шкідливий, несприятливий

## II. VOCABULARY CHECK

### Activity 1. Give Ukrainian equivalents of the following.

1. smelting ore
2. internal combustion engine
3. blurred vision
4. oxygen-carrying capacity
5. living structure
6. pull of gravity
7. fuel efficiency
8. catalytic converter
9. traffic
10. metropolitan areas
11. indoor and outdoor
12. pollutants

### Activity 2. Read and memorize special terms.

Dioxide, carbon dioxide, carbon monoxide, hydrocarbons, particulates, nitrogen, lead, asbestos, monoxide, toxics, fossil fuels, nitrogen oxide, nitrogen dioxide, chlorofluorocarbons, asbestos, formaldehyde, chloroform, perchloroethylene, paradichlorbensene.

### Activity 3. Give English terms to the following:

NO; NO<sub>2</sub>; O<sub>2</sub>; SO<sub>2</sub>; CO; N<sub>2</sub>; CH<sub>2</sub>O, CFC<sub>z</sub>.

**Activity 4. Match the following words with their explanations.**

converter	having learnt the ways of the world and having lost natural simplicity
to maintain	to breathe in and out
to respire	a device changing from one form, use, etc into another
sophistication	to keep up, retain, continue
persistent	to bring to an end
to evaporate	already used in industry so that further use is possible
to reduce	to allow to go, to set free
to recycle	cause to change into vapour
to complete	refusing in spite of argument, opposition, failure
to release	to make less, make smaller in size, number

**III. GRAMMAR REVIEW****Modals. Модальні дієслова.**

До модальних належать такі дієслова: can (could), may (might), must, need, ought to, to have to, та інші. Вони вживаються у сполученні з інфінітивом іншого дієслова і означають не саму дію, а лише ставлення до неї того, хто говорить.

**Особливості модальних дієслів:**

Не змінюються за особами, числами;

Не мають безособових форм – інфінітива, герундія, дієприкметника;

Не мають часових форм;

Після модальних дієслів інфінітив вживається без частки to (за винятком дієслова ought);

Модальні дієслова не мають закінчення у третій особі однини.

Питальна та заперечна форми утворюються без допоміжного дієслова

**Модальні дієслова та їх еквіваленти**

<b>Модальне дієслово</b>	<b>Значення</b>	<b>Приклад</b>
can	1.можу, умію	1.She can do it.
could	2.можливо(з Perf.Inf.у стверджувальних реченнях)	2.She can have done it. 3.Can she do (have done) it?
	3.невже (у питальних реченнях)	4.She can't do (have done) it.
	4.не може бути(в заперечних реченнях)	

to be able (to)	бути в змозі	She will be able to do it.
may	1.можна(просьба-у	1. May I come in?
might	питальних реченнях), дозвіл (у стверджувальних реченнях )	2.You may take the book. 3.She may do (have done) it.
to be allowed (to)	мати дозвіл	He was permitted to go there.
to be permitted (to)		
must	повинен	She must do it.
	напевно	She must do (have done) it.
to have (to)	повинен	із-за She has to do it.
to be (to)	обставин, плану	She is to do it.
need	потрібно	The plants need watering.
shall (should)	повинен	Shall I apply for the job? They should have warned us.
will (would)	просьба, пропозиція	Will you give me a hand? Would you mind helping me?
ought (to)	обов'язок	People ought to live in peace.

### Exercise 1.

Match the personal qualities on the left with the abilities on the right:

**If you**

**you can**

- |   |                                    |
|---|------------------------------------|
| 1. are computer literate                            | a) work well on your own           |
| 2. are trilingual                                   | b) use different types of software |
| 3. are good at mental arithmetic                    | c) solve problems rationally       |
| 4. are autonomous                                   | d) be a good leader                |
| 5. have a creative personality                      | e) calculate quickly in your head  |
| 6. have a logical mind                              | f) speak three languages           |
| 7. are decisive and people accept<br>your authority | g) bring new ideas to projects     |

### Exercise 2.

Complete the sentences using either "could" or "managed to":

- After a lot of discussion we ..... strike a deal.
- He was a brilliant ecologist and ..... speak over a dozen languages fluently.

3. I thought I was going to miss the plane but I ..... get to the airport on time.
4. When I was younger I ..... run several kilometres without feeling tired.
5. She ..... to find a good job despite her lack of formal qualifications.
6. When we lived near the beach we ..... go swimming every day.
7. She ..... have left me a message – how was I supposed to know?

### Exercise 3.

**React to these situations using “could have”:**

1. Why didn't she ring me up to tell me she would be late?
2. She had the facts and figures but left me in the dark.
3. It wasn't worth us taking a taxi, the station was within walking distance.
4. It took six days for the letter to arrive and we both have e-mail.

### Exercise 4.

**Complete these sentences so that they are true for your country. Use “have to”, “don't have to” and “ must”:**

1. You .....carry a gun.
2. You .....pay to use buses and trams.
3. You .....vote if you are over 18.
4. You .....drink alcohol at work.
5. You .....pay to drive on a motorway.
6. You .....wear a seat belt when driving a car.

### Exercise 5.

**This text deals with the likelihood of an earthquake in the San Francisco area. Decide where each of the phrases (a-h) fits into the passage:**

The next big earthquake in the Bay area may come sooner than you think. There is a 67 percent chance of at least one earthquake of magnitude 7 or larger in the San Francisco Bay area between now and 2020. Such an earthquake .....(1).

Some scientists believe that the 67 percent probability estimate .....(2). They have noted several instances of pairs of earthquakes of magnitude 6.5 or larger in northern California, and they are concerned that the Loma Prieta earthquake ..... (3). Other fault segments in northern California .....(4).Therefore it seems prudent to consider the 67 percent chance of a large earthquake within the next 20 years as a minimum estimate. Future studies are also likely to change. Scientists agree that:

\*Earthquakes of magnitude 7 and larger are highly likely within the bay area during the next few decades.

- Each of these events ..... (5) because each will probably be located closer to densely populated areas.
- Action is needed now to reduce the damage and the number of deaths that ..... (6) even if this ..... (7).
  - a) might also be capable of producing large earthquakes
  - b) may be too low
  - c) could cause more damage than the Loma Prieta quake
  - d) will result in changes in probability estimates
  - e) could strike at any time, including today
  - f) could be the first quake of such a pair
  - g) may involve significant expense
  - h) could result from future major earthquakes

### Exercise 6.

**Decide whether the following are requests for permission, suggestions or offers:**

1. Shall we go for lunch?
2. May I sit here?
3. Shall I give you a lift into town?
4. Can I borrow the car this weekend?
5. Could I use your mobile phone?
6. You might like to check the exchange rate first.
7. Would you like us to send you a catalogue?
8. In my opinion you should sell your shares now.
9. Are you hot? I'll switch on the air conditioning if you like.

### Exercise 7.

**Translate into English:**

1. Викиди парникового газу повинні скоротитись на 20% до 2022 року.
2. Грінпіс вважає, що Великобританія повинна зменшити викиди в атмосферу шкідливих газів.
3. Всі 27 країн Євросоюзу повинні досягти 10% використання біопалива для потреб транспорту..
4. Навіть невелика кількість CO<sup>2</sup> у повітрі може викликати сонливість, головний біль, запаморочення.
5. Крига в Арктиці швидко розтає. Як вважають, це результат зміни клімату.
6. Всі екологічні проблеми взаємозв'язані, і вони повинні вирішуватись державою.

7. У нього так багато книжок. Він, очевидно, любить читати.
8. Він не міг отримати листа в неділю. В неділю пошта не працює.
9. Вам краще зробити цю роботу сьогодні.
10. Я не дуже ретельно готувався до екзамену, хоча мені було слід працювати більше.

#### ***IV. PRE-TEXT DISCUSSION***

##### **Activity 1. Do you know that :**

- The atmosphere or air is composed mostly of nitrogen.
- Most of the atmosphere is held close to the earth by the pull of gravity.
- The content of the atmosphere changes with the distance from the earth's surface.
- Troposphere is the layer of the air we breathe.
- The primary air pollutant is carbon monoxide.
- Air pollutants cause a variety of health problems.
- The lower part of the atmosphere contains a band of warm gas called the ozone layer.
- The ozone layer is the layer between 15 and 40 kilometers above sea level.
- The man-made chemical chlorofluorocarbon (CFC<sub>z</sub>) breaks up ozone molecules.
- The stratosphere (between 15-80 kilometers above sea level) contains thin cold air with no dust or water vapor.

**Activity 2. Make up dialogues of your own, discussing the information given in the part "Do you know that".**

##### **Activity 3. Give your opinion on the following**

1. The atmosphere and the air are different (layers) things.
2. A mixture of sulfur and nitrogen dioxide is called sulfur dioxide.
3. The primary source of nitrogen oxide is the vehicle.

#### ***V. READ AND TRANSLATE TEXT 4A***

##### **"The Atmosphere"**

The atmosphere is the layer of gas that surrounds the earth. The composition of the atmosphere changes with the distance from the earth's surface. The layer near the surface – the troposphere – contains the air we breathe.

## The Atmosphere.

The atmosphere is divided into the troposphere, the relatively dense layer of gases close to the surface of the earth; the stratosphere, more distant with similar gases but less dense; and the ionosphere, composed of ionized gases.

The atmosphere is normally composed of 79 percent nitrogen, 20 percent oxygen, and 1 percent mixture of carbon dioxide, water vapor, and small quantities of several other gases. Most of the atmosphere is held close to the earth by the pull of gravity, so it gets thinner with increasing distance from the earth.

The atmosphere has a tremendous ability to accept and disperse pollutants. Carbon monoxide, hydrocarbons, particulates, sulfur dioxide, and nitrogen compounds are the primary air pollutants. They can cause a variety of health problems. Lead and air toxics have also been identified as significant air pollutants.



**Table 1**  
**Sources of Primary Air Pollutants**

Pollutant	Sources
Carbon monoxide	Incomplete burning of fossil fuels
	Tobacco smoke
Hydrocarbons	Incomplete burning of fossil fuels
	Tobacco burning
	Chemicals
Particulates	Burning fossil fuels
	Farming operations
	Construction operations
	Industrial wastes
	Building demolition
Sulfur dioxide	Burning fossil fuels
	Smelting ore
Nitrogen compounds	Burning fossil fuels

**Carbon monoxide (CO)** is produced when organic materials, such as gasoline, coal, wood, and trash, are incompletely burned. The single largest source of carbon monoxide is the automobile. Although increased fuel efficiency and the use of catalytic converters have reduced carbon monoxide emissions per kilometer driven, carbon monoxide remains a problem because the number of automobiles and the number of kilometers driven have increased. In many parts of the world, automobiles are poorly maintained and may have inoperable pollution control equipment, resulting in even greater amounts of carbon monoxide.



**Carbon Monoxide** The major source of carbon monoxide, hydrocarbons, and nitrogen oxides is the internal combustion engine, which is used to provide most of our transportation. The more concentrated the number of automobiles, the more concentrated the pollutants. Carbon monoxide concentrations of a hundred parts per million are not unusual in rush-hour traffic in large metropolitan areas. These concentrations are high enough to cause fatigue, dizziness, and headaches.

The next largest source of carbon monoxide is smoking tobacco. Smoking is decreasing in the industrialized world today, but in the developing nations, smoking retains its image of glamour

and sophistication as a result of extensive marketing campaigns by cigarette companies.

Several hours of exposure to air containing 0.001 percent of carbon monoxide can cause death. Because carbon monoxide remains attached to hemoglobin for a long time, even small amounts tend to accumulate and reduce the blood's oxygen-carrying capacity. The amount of carbon monoxide produced in heavy traffic can cause headaches, drowsiness, and blurred vision.

A heavy smoker in congested traffic is doubly exposed and may experience severely impaired reaction time compared to nonsmoking drivers.

Fortunately, carbon monoxide is not a persistent pollutant. Natural processes convert carbon monoxide to other compounds that are not harmful. Therefore, the air can be cleared of its carbon monoxide if no new carbon monoxide is introduced into the atmosphere.

### **Hydrocarbons (HC)**

In addition to carbon monoxide, automobiles emit a variety of hydrocarbons (HC). Hydrocarbons are a group of organic compounds consisting of carbon and hydrogen atoms. They are either evaporated from fuel supplies or are remnants of fuel that did not burn completely. The internal combustion engine is the major source of hydrocarbons, although refineries and other industries add hydrocarbons to the total atmospheric burden. Hydrocarbons in the atmosphere are no great problem. Most of them are washed out of the air when it rains and run off into surface water. They cause an oily film on surface, but hydrocarbons do not generally cause more than nuisance problems, except when they react to form secondary pollutants.

Many modifications to automobile engines have reduced the loss of hydrocarbons to the atmosphere. Recycling some gases through the engine, using higher oxygen concentrations in the fuel-air mixture, and using valves to prevent the escape of gases are three of these modifications. In addition, catalytic converters burn exhaust gases more completely so that fewer hydrocarbons leave the tail pipe.

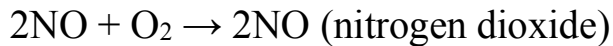
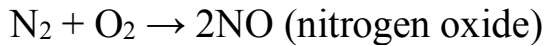
**Particulates**, small pieces of solid materials dispersed into the atmosphere, constitute the third largest category of air pollutants. Smoke particles from fires, bits of asbestos from brake linings and insulation, dust particles, and ash from industrial plants contribute to the particulate load. Particulates cause problems ranging from the annoyance of soot settling on a backyard picnic table to the carcinogenic (cancer-causing) effects of asbestos.

Particulates can accumulate in the lungs and interfere with the ability of the lungs to exchange gases. However, this lung damage usually happens to people who are repeatedly exposed to large amounts of particulate matter on the job. Miners and others who work in dusty conditions are most likely to be affected. For most of the population, particulates affect health by acting as centers for the deposition of moisture and gases from the atmosphere.

**Sulfur Dioxide (SO<sub>2</sub>)** is a compound of sulfur and oxygen that is produced when sulfur-containing fossil fuels are burned. Coal and oil were produced from organisms that had sulfur in their living structure. When the coal or oil was formed, some of the sulfur was incorporated into the fossil fuel. The sulfur is released as sulfur dioxide when the fuel is burned. Sulfur dioxide has a sharp odor and irritates respiratory tissue. It also reacts with water, oxygen, and

other materials in the air to form sulfur-containing acids. The acids can become attached to particles, which, when inhaled, are very corrosive to lung tissue.

Oxides of nitrogen (NO and NO<sub>2</sub>) are the fifth category of primary air pollutants. Several compounds contain nitrogen and oxygen in different combinations; nitrogen oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) are the most common. When combustion takes place in air, nitrogen and oxygen molecules from the air may react with each other, and oxides of nitrogen result:



A mixture of nitrogen oxide and nitrogen dioxide is called NO<sub>x</sub>. The nitrogen dioxide in the mixture reacts with other compounds to produce photochemical smog.

The primary source of nitrogen oxides is the automobile engine. Catalytic converters reduce the amount of nitrogen oxides released from the internal combustion engine, but increased automobile traffic has resulted in significant NO<sub>x</sub> levels in many metropolitan areas.

## **VI. COMPREHENSION CHECK**

### **Activity 1. Do the false/true activity**

1. The air we breathe consists mainly of oxygen.
2. The air is thinner in the ionosphere than in the stratosphere.
3. Nowadays there are fewer products containing chlorofluorocarbons.
4. The main source of nitrogen oxide is the automobile engine.
5. Catalytic converters increase the amount of nitrogen oxide from the internal combustion engine.
6. Sulfur dioxide is a compound of sulfur and hydrogen.
7. Particulates are small pieces of solid materials dispersed into the atmosphere.
8. A mixture of nitrogen oxide and nitrogen dioxide is called NO.
9. Particulates can't accumulate in the lungs.
10. Particulates affect man's health by depositing moisture and gases from the atmosphere.

**Activity 2. Look through text 4A carefully. Then complete the following to make suitable sentences according to the meaning of the text.**

1. The layer near the surface is \_\_\_\_\_.
2. Many modifications to automobile engines have reduced the loss \_\_\_\_\_.

3. The air can be cleaned of carbon monoxide if no new carbon monoxide is \_\_\_\_\_.
4. Carbon monoxide, hydrocarbons can cause \_\_\_\_\_.
5. Catalytic converters burn exhaust gases more completely so that fewer hydrocarbons \_\_\_\_\_.
6. The sulfur is released as sulfur dioxide when \_\_\_\_\_.
7. The next largest source of carbon monoxide is \_\_\_\_\_.
8. The atmosphere has an ability to accept and disperse \_\_\_\_\_.

## VII. DISCUSSION

**Activity 1. Define the logical parts of text 4A entitling each of them.**

**Activity 2. Work in pairs. Ask and answer the questions on text 4A.**

**Activity 3. Translate in writing and reproduce.**

\*\*\*

- Доброго дня!
- Я був присутній на вашій лекції з зовнішніх і внутрішніх забруднень. Ця інформація дуже актуальна зараз. Мені сподобалась ця лекція.
  - Радий чути вашу думку.
- Це не комплімент, я так вважаю.

\*\*\*

- Які внутрішні забруднення шкідливо впливають на здоров'я людини? Хто може відповісти на це питання?
- Можна? До цих забруднень відносяться речовини, які містять азбест, формальдегід, формалін.
- Цілком вірно! Які ще речовини шкідливі?
- Це споживчі товари, в тому числі вироби з деревини, аерозолі, пестициди, хлороформ.
- Добре.

\*\*\*

- Що ти робиш?
- Я готуюсь до семінару, який відбудеться завтра.
- А які питання ви будете розглядати на семінарі?
- Багато різноманітних питань з теми „Атмосфера”, але я не зрозумів питання про токсини в повітрі. Ти можеш мені допомогти?
- Із задоволенням, я вже склав цей матеріал. Слухай! Токсини повітря – це шкідливі хімічні речовини, які потрапляють до атмосфери.
- А як вони туди потрапляють?

- Випадково або цілеспрямовано. Випадково – це в результаті витоку або невірно спроектованого виробничого процесу.
- Зрозуміло. А які речовини потрапляють цілеспрямовано?
- А. Це пестициди, які призначені для того, щоб вбивати комах або шкідників сільськогосподарських рослин.
- Дякую! Ти мені дуже допоміг.
- Будь ласка. Бажаю тобі гарно виступити на семінарі.

**Activity 4. Make up your own dialogues on the theme “Air pollution”.**

### ***VIII. SKIM TEXT 4B AND GET READY TO SPEAK ABOUT WATER POLLUTION***

**Text 4B.**

**Read the text. For questions 6-10 find the best answer.**

#### **How do we detect water pollution?**



Water pollution is detected in laboratories, where small samples of water are analyzed for different contaminants. Living organisms such as fish can also be used for the detection of water pollution. Changes in their behaviour or growth show us, that the water they live in is polluted. Specific properties of these organisms can give information on the sort of pollution in their environment. Laboratories also use computer models to determine what dangers there can be in certain waters. They import the data they own on the water into the computer, and the computer then determines if the water has any impurities.

In most manufacturing processes a lot of heat originates that must be released into the environment, because it is waste heat. The cheapest way to do

this is to withdraw nearby surface water, pass it through the plant, and return the heated water to the body of surface water. The heat that is released in the water has negative effects on all life in the receiving surface water. This is the kind of pollution that is commonly known as heat pollution or thermal pollution.

The warmer water decreases the solubility of oxygen in the water and it also causes water organisms to breathe faster. Many water organisms will then die from oxygen shortages, or they become more susceptible to diseases.

6. Water pollution is detected in:

- a) scientific laboratories
- b) in the rivers
- c) at the research institutes
- d) by sedimentation

7. Water analysis is carried out to:

- a) find the weight of admixture
- b) determine pollutants
- c) find out the molecular composition
- d) find the quantity of fish

8. How can water pollution be detected by using fish?

- a) by calculating its weight
- b) judging by the amount of food it consumes
- c) observing its behaviour
- d) measuring its growth

9. Laboratories also use computer models to:

- a) distribute information on pollution
- b) inform the population
- c) find out the impurities in water
- d) import the pictures into the computer

10. Why is warm water harmful to the environment?

- a) it increases the solubility of oxygen
- b) it creates waste heat
- c) water organisms become less susceptible to diseases
- d) it prevents freezing of water bodies in winter.

### **Activity 2. Translate into English using the dictionary.**

Атмосфера завжди містить певну кількість домішок, котрі зумовлюються природними та антропогенними джерелами. До числа домішок, котрі виділяються природними джерелами, належать: пил (рослинного, вулканічного, космічного походження, внаслідок ерозії ґрунту, частинки морської солі, тощо), туман, дим, гази від лісових та

степових пожеж, газу вулканічного походження, різноманітні продукти рослинного, тваринного та мікробіологічного походження.

Ще п'ятдесят років тому природа досить успішно боролася з різноманітним забрудненням, оскільки атмосфера має могутні властивості самоочищення, але нині вона з цим завданням вже не справляється.

Основна маса забруднень повітря припадає на спалювання органічних енергоносіїв (вугілля, нафти, газу, торфу, сланців, деревини), у містах до 60% забруднень дає автотранспорт. Забруднення повітря стало великою соціальною й економічною проблемою для багатьох розвинених країн, особливо для великих міст, промислових агломератів. Сьогодні в містах забруднення повітря в 15 разів вище, ніж над океаном. У промислових районах за добу випадає понад 1 тону пилу на 1 км<sup>2</sup>, у забруднених містах за рік – більше 1 кг/м<sup>2</sup> пилу і сажі.

## ***IX. LONG-TERM PROJECT WORK***

**Prepare projects on the following topics.**

1. Indoor and outdoor pollutants having harmful influence on health.
2. Alternative engines – the way of nitrogen oxides reduction.

## ***X. SPOKEN ENGLISH (EVERY DAY ENGLISH)***

### **1. Remember!**

Ви наступили на ногу комусь в автобусі. Ви образили людину і розкаюєтесь в цьому. Ви перервали бесіду і почуваетесь незручно. Природно, у всіх цих та багатьох інших випадках слід вибачитися. Як це зробити? Легше за все сказати **I'm sorry**, але не завжди цього буває досить. Випадково штовхнувши перехожого на вулиці, можна обмежитися наступними фразами:

I'm sorry. Sorry. Pardon me.

Правда, можна собі уявити ситуацію, коли від вашого поштовху перехожий впав у калюжу. У такому випадку доведеться бути більш красномовним, наприклад:

Oh, I'm sorry. I was so clumsy. Let me help you to clean your jacket.

О, пробачте мені. Я був такий незграбний.

Давайте я допоможу вам відчистити костюм.

Тож запасайтесь „штампами” вибачень на всі випадки життя.

I beg your pardon.	Прошу вибачення
Pardon me, please.	Пробачте мені, будь ласка
I hope you'll forgive me.	Сподіваюсь, ви мені пробачите
Excuse me for...	Вибачте мені за...
I apologize for...	Я прошу вибачення за...
I'm awfully sorry.	Я дуже завинив
I won't let it happen again	Це не повториться
I'll be more careful next time	Наступного разу я буду обережнішим

А тепер уявіть собі, що всі ці неприємності трапилися з вами з чиеїсь вини. Вибачення принесені, і треба щось відповісти. Я сподіваюсь, що всі ви добрі люди, тому зосереджусь на способах прийняття вибачень.

## 2. Speech patterns.

	<b>Excuse me</b>
That's quite all right	Усе в порядку
Think nothing of it	Не звертайте уваги
Don't worry about it	Не хвилюйтесь
No harm done	Нічого не трапилось
Forget it	Забудьте про це
No problem	Нема проблем
No big thing	Дурниці
I won't let it happen again	Я більше так не буду
Pardon me, please	Вибачте, будь ласка
I am really very sorry to leave	Мені так не хочеться йти
I am very sorry to say it	Мені так не хочеться говорити це
Don't trouble to see me to the door	Не турбуйтеся і не проводжайте мене до дверей
I forgive you	Я тебе пробачаю
I hope you'll forgive me	Я сподіваюсь, що ти мені пробачиш
Oh, think nothing of it	О, пусте
It's a mere nothing	дурниці

## 3. Dialogues and jokes to be remembered

\*\*\*

- Oh, excuse me, sir! I'm so clumsy! I'll get you something to clean your coat right away
- No great harm done. Don't worry. I hope it doesn't stain.
- If it does, please phone me. I'll have your coat dry-cleaned. This is my phone number.
- Well, thanks. Take it easy.

\*\*\*

- Helen, let me tell you something. I borrowed your dictionary and lost it.
- Forget it. I have a newer and better one. But next time would you mind telling me when you borrow something.
- I won't let it happen again.
- Don't worry about it. It's all right.

\*\*\*

- Could you get the tickets?
- I'm really sorry, Linda, but I couldn't.
- You don't have to apologize. Next time I won't ask you so late. Thanks anyway.

\*\*\*

- How many times I told you not to be late for classes?
- I hope you'll forgive me, sir, but I don't know. I thought you were keeping the score.

\*\*\*

- Doctor, I'm terribly sorry to drag you so far on such a bad night.
- Oh, that's quite all right. I have another patient near here, so I can kill two birds with one stone.

\*\*\*

- I beg your pardon, but Mrs. Smith can't accept you this morning.
- What did she say?
- Sorry, but she said to tell you she was not at home.
- Oh, think nothing of it, just tell her I'm glad I didn't come.

\*\*\*

- Pardon me , please, for being late.
- Anything happened?
- There are eight people in my family and the alarm-clock was set for seven.

\*\*\*

- I'm really very sorry to leave. Don't trouble to see me to the door.
- It's no trouble, it's a pleasure.

\*\*\*

- Excuse me, Mum, for breaking Dad's pipe. I'm so sorry about it.
- Have you told Dad yet?
- I have.
- What did he say?
- Shall I leave out the naughty words?
- Certainly.
- He said nothing.

#### 4. Translate in writing

\*\*\*

- Вибачте, я не навмисно...
- Нічого, нічого.
- Заради бога, вибачте, я ж не хотів.
- Я вже забув, а ви все про те саме.
- Вибачте, я був такий незграбний!
- Дрібниці.
- Більше таке ніколи не повториться.
- Забудьте про це. Нічого страшного не трапилось.
- Я буду більш обережним наступного разу.
- Ви що, смієтесь наді мною?
- Я дійсно винуватий...
- Пішов геть! (Get out!)

\*\*\*

- Хелен, я повинна тобі щось сказати.
- Я взяла твою ручку і загубила її.
- Забудь про це. У мене є краща і новіша. Але наступного разу, будь ласка, говори мені, якщо ти що-небудь береш.
- Я більше так не буду.
- Не переймайся, все гаразд.

\*\*\*

- Ти можеш дістати білети на новий спектакль?
- Вибач, але я не зможу.
- Не вибачайся. У будь-якому разі, дякую.

#### 5. Situation for spontaneous projects.

1. Вас запросили у гості. Вечірка у розпалі. Поряд із вами сидить цікава дівчина. Ви наливаєте їй келих вина та проливаєте вино на білосніжну скатертину та чудову сукню незнайомки. Треба вибачитися, але як?
2. Юнак, який Вам дуже подобається, запросив Вас до театру. Він чекає на Вас біля театру, але Ви запізнюєтесь. Вистава вже почалась, а ваші місця в середині ряду.

### **TEST-REVIEW IV**

#### **Task I. Total :5**

*Choose the correct word to complete the sentences.*

1. Many modifications to automobile engines ... to reduce the emission of hydrocarbons into the atmosphere.

- |         |          |
|---------|----------|
| A) must | C) might |
| B) can  | D) have  |

2. Particulates ... accumulate in the lungs.

- A) must                      C) can  
B) have to                  D) am to

3. Several hours of exposure to air containing 0.001 percent of carbon monoxide ... cause death.

- A) have to                  C) might  
B) is to                      D) can

4. He was a brilliant ecologist and ... speak over a dozen of languages fluently.

- A) was to                  C) could  
B) can                      D) had

5. The next big earthquakes in the Bay area ... come sooner than you think.

- A) may                      C) will  
B) might                  D) should

### Task II. Total 5

*Name chemical compounds*

1. NO
2. NO<sub>2</sub>
3. O<sub>2</sub>
4. SO<sub>2</sub>
5. CO
6. N<sub>2</sub>
7. CH<sub>2</sub>O
8. CFC<sub>2</sub>
9. HC
10. H<sub>2</sub>O

### Task III. Total 10

*Give English equivalents of the following.*

1. Сила тяжіння
2. Склад повітря
3. Приймати та виділяти забруднювачі
4. Проблеми із здоров'ям
5. Значне забруднення навколишнього середовища
6. Органічні матеріали
7. Каталітичний конвертор
8. Обладнання для контролю за рівнем забруднення
9. Інтенсивний дорожній рух

10. Живі істоти
11. Вплив повітря
12. Пробачте мені
13. Нічого страшного
14. Все гаразд
15. Забудьте про це
16. Нема проблем
17. Не вибачайтесь
18. У всякому разі, дякую
19. Прошу вибачення
20. Сподіваюсь, ви мені пробачите

#### Task IV. Total 5

*Compose sentences with proposed question words.*

1. The air we breathe consists mainly of oxygen. (What ... of?)
2. A mixture of nitrogen oxide and nitrogen dioxide is called NO. (What ...?)
3. Sulfur dioxide reacts with oxygen and other materials. (What ... with?)
4. Particulates can accumulate in the lungs. (Where ...?)
5. Particulates interfere with the ability of lungs to exchange gases. (What ...?)

#### Task V. Total 5

*Compose sentences using the following words.*

1. I, clumsy, was, sorry, I, am, so.
2. do, not, to, apologize, have, you.
3. cars, Electric, environmentally-friendly, are, cars, diesel, than, more.
4. The, surrounds, the, is, the, layer, gas, earth, atmosphere, of, that.
5. The, has, a, ability, atmosphere, to, pollutants, and, disperse, accept, to, tremendous.

#### Task VI. Total 5.

*Choose the correct translation of the modal verbs.*

1. We are to meet in the morning to go to the conference on outdoor and indoor pollutants.  
A) в змозі                      C) повинні були  
B) слід                          D) повинні
  
2. You should participate in environmental groups and movements.  
A) зобов'язані              C) слід  
B) повинні були            D) може

3. I can't give up smoking.

- A) не повинна      C) не слід  
B) не можу      D) не зобов'язана

4. Farmers have to be very careful using pesticides.

- A) вимушені      C) слід  
B) зобов'язані      D) можуть

5. They should have warned us about the danger of disperse pollutants.

- A) повинні були      C) ймовірно  
B) слід було      D) мабуть

### Task VII. Total 5.

*Give 3 forms of irregular verbs and compose 5 sentences with them.*

- |                     |              |
|---------------------|--------------|
| 1. мати             | 6. горіти    |
| 2. вести(призвести) | 7. бігти     |
| 3. витрачати        | 8. ламати    |
| 4. означати         | 9. тримати   |
| 5. загубити         | 10) говорити |

## **ADDITIONAL READING**

### **TEXT 1**

**1. What do you know about ecology? Choose the best answers.**

- The subject matter of ecology is divided onto four/six broad categories.
- Population ecology deals with distribution of individual species/ community ecology.
- Ecosystems ecology studies microbes, plants, and animals/ only the parts of the whole system.
- Industrial ecology follows the industrial processes/chemical materials and power supply.
- Conservation biology deals with plant ecology and animal ecology/ and microbial ecology.

**2. Find the following words in the text.**

- a very large quantity of something
- a group of microbes, minerals, rocks, or fossils occurring together
- a grassy plain in tropical and subtropical regions, with few trees.
- a vast, flat, treeless Arctic region of Europe, Asia, and North America in which the subsoil is permanently frozen.

5. make less severe, serious, or painful.
  6. physical rather than biological; not derived from living organisms.
- 3. Read the text, define the key words and write abstracts both in English and Ukrainian.**

### **ECOLOGY**

The subject matter of ecology is normally divided onto four broad categories: physiological ecology, having to do with the response of single species to environmental conditions such as temperature or light; population ecology, usually focusing on the abundance and distribution of individual species and the factors that cause such distribution; community ecology, having to do with the number of species found at given location and their interactions; and ecosystems ecology, having to do with the structure and function of the entire suite of microbes, plants, and animals, and their abiotic environment, and how the parts interact to generate the whole. This branch of ecology often focuses on the energy and nutrient flows of ecosystems, and when this approach is combined with computer analysis and simulation we often call it systems ecology. Evolutionary ecology, which may operate at any of these levels but most commonly at the physiological or population level, is a rich and dynamic area of ecology focusing on attempting to understand how natural selection developed the structure and function of the organisms and ecosystems at any of these levels.

Ecology is usually considered from the perspective of the specific geographic environment that is being studied at the moment: tropical rain forest, temperate grassland, arctic tundra, benthic marine, the entire biosphere, and so on. Thus you might study the population ecology of lions in an African savanna, an ecosystems study of a marine benthic environment, global nutrient budgets, and so on. The subject matter of ecology is the entire natural world, including both the living and the non living parts. Biogeography focuses on the observed distribution of plants and animals and the reasons behind it. More recently ecology has included increasingly the human-dominated world of agriculture, grazing lands for domestic animals, cities, and even industrial parks. Industrial ecology is a discipline that has recently been developed, especially in Europe, where the objective is to follow the energy and material use throughout the process of, e.g., making an automobile with the objective of attempting to improve the material and energy efficiency of manufacturing. For any of these levels or approaches there are some scientists that focus on theoretical ecology, which attempts to derive or apply theoretical or sometimes mathematical reasons and generalities for what is observed in nature, and empirical ecology, which is concerned principally with measurement. Applied ecology takes what is found from one or both of these approaches and uses it to protect or manage nature in some way. Related to this discipline is conservation biology. Plant ecology, animal ecology, and microbial ecology have obvious foci.

There are usually four basic reasons given to study and as to why we might want to understand ecology: first, since all of us live to some degree in a natural or at least partly natural ecosystem, then considerable pleasure can be derived by studying the environment around us. Just as one might learn to appreciate art better through an art history course so too might one appreciate more the nature around us with a better understanding of ecology. Second, human economies are in large part based on the exploitation and management of nature. Applied ecology is used every day in forestry, fisheries, range management, agriculture, and so on to provide us with the food and fiber we need. For example, in Argentina in many circles there is no difference between ecology and agriculture, which is essentially the ecology of crops and pastures. Third, human societies can often be understood very clearly from an ecological perspective as we study, for example, the population dynamics (demography) of our own species, the food and fossil energy flowing through our society. Fourth, humans appear to be changing aspects of the global environment in many ways. Ecology can be very useful to help us understand what these changes are, what the implications might be for various ecosystems, and how we might intervene in either human economies or in nature to try to mitigate or otherwise alter these changes. There are many professional ecologists, who believe that these apparent changes from human activities have the potential to generate enormous harm to both natural ecosystems and human economies. Understanding, predicting and adapting to these issues could be the most important of all possible issues for humans to deal with. In this case, ecology and environmentalism can be the same.

### **Summary writing**

**Rearrange and write the following sentences in a paragraph that summarizes the text.**

1. Ecology can be very useful to help us understand various ecosystems
2. Human economies are based on the exploitation and management of nature.
3. Applied ecology is used every day in forestry, fisheries, range management, agriculture, etc.
4. There are four basic reasons to study and to understand ecology.
5. Ecology is considered from the perspective of the specific geographic environment.
6. Human societies can often be understood very clearly from an ecological perspective.
7. The subject matter of ecology is the entire natural world, including both the living and the non-living parts.
8. Ecosystems ecology often focuses on the energy and nutrient flows of ecosystems.

**Key language**

**Match the words in the left-hand column with those in the right-hand column to make expressions from the text.**

- |                  |                |
|------------------|----------------|
| 1. subject       | a. harm        |
| 2. environmental | b. dynamics    |
| 3. abiotic       | c. matter      |
| 4. evolutionary  | d. conditions  |
| 5. population    | e. environment |
| 6. enormous      | f. ecology     |

**TEXT 2**

**1. What do you know about climate change ? Choose the best answers.**

- According to the scientists, global temperatures will warm/ drop between 1.5°C and 6.8°C from 2000 to 2100.
- Climate changes will/will not be uniform.
- Landmasses/oceans will warm more .
- Sea ice in the polar oceans is melting and may disappear entirely/in some places during summer months.
- Cities with large populations, such as those along the Gulf and East coasts of the United States, will be inundated/ will be destroyed.

**2. Find the following words in the text.**

- a continent or other large body of land;
- the proportion of the incident light or radiation that is reflected by a surface, typically that of a planet or moon;
- a substance, such as oil or grease, used for minimizing friction, especially in an engine or component;
- rain, snow, sleet, or hail that falls to the ground;
- plants considered collectively, especially those found in a particular area or habitat;
- the process of turning from liquid into vapor.

**3. Read the text, define the key words and write abstracts both in English, and Ukrainian.**

**Global Forecast for the 21st Century**

Average global temperatures are anticipated to warm by somewhere between 1.5°C and 6.8°C from 2000 to 2100, depending on human activities. These changes will not be uniform, although no regions are expected to cool. Landmasses will warm more than the oceans, and Arctic regions will warm more than other parts of the world, perhaps by as much as 8°C or 9°C above 1975 temperatures. This will melt more of the northern ice and snow pack, thereby decrease albedo of these regions, and accelerate warming.



Sea ice in the polar oceans is melting and may disappear entirely during summer months. This will shorten sea routes, say, from Europe and the east coast of the United States to China. It will also make more accessible some natural resources such as oil deposits in the Arctic seabed. Sea level is predicted to rise as higher temperatures expand the volume of ocean waters and melt the snow and ice situated on landmasses, particularly Greenland and Antarctica. Over 20 different GCMs predict that the sea level will rise by 0.2 m to 0.5 m from 2000 to 2100. These models usually assume that glaciers will keep flowing (moving) at their current speed. Recent observations in Greenland have shown that glacial flows are accelerating. The likely mechanism is that as temperatures increase, the ice along the edges of a glacier melts. This water makes its way to the bottom of the glacier and acts as a lubricant that accelerates the ice flow. An alternative forecast, which takes this phenomenon into account, predicts an even greater change in sea level: the sea level in 2100 will be 0.5 m to 1.2 m higher than in 2000. A rising sea level will put coastal regions of the world at great risk. Cities with large populations, such as those along the Gulf and East coasts of the United States, will be inundated. Bangladesh, one of the world's poorest yet most populous countries, is perhaps the most vulnerable to sea-level changes: about 80% of this country is below 10 m in elevation, and so a 0.5 m to 1.0 m rise in sea level will permanently flood between 6% and 10% of its land area and displace between 3.4 million and 17 million people. In addition to worldwide flooding, the rising sea level may contaminate the freshwater supplies of many coastal regions with seawater.

Global warming will promote greater evaporation of water from Earth's surface; therefore, global precipitation should increase on average. In particular, polar and equatorial regions are likely to become wetter. The mid-latitudes, however, will become drier, especially areas that are already deserts.

Hotter and drier weather at the mid-latitudes will foster more frequent and more severe forest fires. Forests in the western United States contain from 20% to 40% of the carbon sequestered in the vegetation of the entire country. Fires might turn these forests into sources of additional CO<sub>2</sub> that further accelerate global warming, rather than sinks that mitigate it. Clearly, more intensive management of these lands will become necessary.

Higher temperatures and lower precipitation at mid-latitudes will also decrease the snowpack in many mountain ranges. For example, the Sierra Nevada Mountains in California may receive from 30% to 90% less snow by the year 2100. Also, only about one-third of the ski resorts in Europe will have reliable snow by 2100.

Finally, even in areas where precipitation does not change significantly, the amount of water available to living organisms, lakes, and rivers will decrease because at higher temperatures, more water will be lost to evaporation.

As CO<sub>2</sub> concentrations in the atmosphere increase by 50% to 300% during this century, more CO<sub>2</sub> will dissolve in the oceans and form carbonic acid. This carbonic acid dissociates in water to release a proton and bicarbonate. Higher atmospheric CO<sub>2</sub> concentrations and warmer temperatures increase proton concentrations in the oceans (i.e., lower the pH), and oceans are thereby becoming more acidic. Simulations on GCMs affirm this trend. They indicate that the oceans in preindustrial times were more alkaline, with a pH of 8.25 (a pH of 7.0 is neutral); they dropped to pH 8.15 by around 1994; and they are expected to reach pH 7.85 by 2100. The pH scale is logarithmic, so a shift in ocean pH from 8.25 to 7.85 means a 250% increase in proton concentrations, a change that will have a strong effect on sea life.

Warmer sea surface temperatures and cooler stratospheric temperatures accentuate the temperature gradients that empower major storms. Consequently, major storms are increasing in intensity. This, together with the rising sea level, exacerbates storm surges and threatens coasts adjacent to warm ocean currents. Projections about the frequencies of major storms, however, remain uncertain because of the complex nature of storm formation and will require additional data and fine-resolution modeling.

## COMPREHENSION CHECK

### Activity 1. Do the false/true activity

1. Arctic regions will warm more than other parts of the world.
2. Higher temperatures and lower precipitation at mid-latitudes will increase the snowpack in many mountain ranges.
3. California may receive from 30% to 90% less snow by the year 2100.

4. Less CO<sub>2</sub> will dissolve in the oceans and form carbonic acid.
5. Forecasts of the frequencies of major storms remain uncertain.

### Key language

**Match the words in the left-hand column with those in the right-hand column to make expressions from the text.**

- |                |                  |
|----------------|------------------|
| 1. human       | a. supplies      |
| 2. lower       | b. activities    |
| 3. polar       | c. warming       |
| 4. global      | d. precipitation |
| 5. freshwater  | e. oceans        |
| 6. sea surface | f. surface       |

### TEXT 3

**1. What do you know about the ancient world? Choose the best answer.**

- a. People first developed high civilizations in the Middle East/China
- b. The course of history is/is not always that of upward human progress.
- c. The existence of highly productive agriculture was made possible by systematic irrigation/ the plow.
- d. The rise of civilizations depended upon the increasing ability of people to use and control their natural environment/living conditions.
- e. Life expectancy was short, due in part to the high infant mortality/ bad sanitary conditions.

**2. Find the following words in the text.**

1. loss of power, prosperity, or status
2. lack of success
3. a sudden event, such as an accident or a natural catastrophe, that causes great damage or loss of life
4. scattered pieces of waste or remains
5. the process of eroding or being eroded by wind, water, or other natural agents.
6. a seasonal prevailing wind in the region of South and Southeast Asia, bringing rain.

**3. Read the text, define the key words and write abstracts both in English, and Ukrainian.**

### EARLY CIVILIZATIONS AND THE NATURAL ENVIRONMENT

**1. Mesopotamia and the natural environment.**

Cities, temples, palaces, and tombs of once-flourishing societies now lie in ruins throughout the Middle East. Here people first developed high civilizations,

and here, the surviving evidence shows that the course of history is not always that of upward human progress. The rise of civilizations depended upon the increasing ability of people to use and control their natural environment, and the downfall of these same civilizations was due to their failure to maintain a harmonious balance with nature. They suffered a true ecological disaster: not simply a change in climate – for people have weathered climatic changes before and prospered – but a disaster of their own making.

The world's first cities, which arose in Mesopotamia and nearby, were made possible by a changed relationship between human beings and the environment, based on a new agriculture using two important inventions: systematic irrigation and the plow. The fertile, sandy, easily turned Mesopotamian soil made the plow useful. The rivers provided the essential water, but with a flow so undependable that control by major irrigation works was required. The new agriculture enabled a much larger human population to live in a given area, and an increasing portion of the population, freed from the need to work the soil, could take up specialized occupations.

The earliest cities seem to have shared some of the problems which have become so annoying in their modern counterparts. Babylon, in its day the largest city of the area, had a city wall ten miles long, and even including its suburbs was consequently only of moderate size by modern standards. The evidence of narrow streets and small rooms in houses huddled within the compass of defensible walls tells us that crowding in ancient cities was extreme. Garbage accumulated in the houses, where the dirt floors were continually being raised by the debris, and human wastes were rarely carried further than the nearest street. The water supply from wells, rivers, and canals, was likely to be polluted. Life expectancy was short, due in part to the high infant mortality. Flies, rodents, and cockroaches were constant pests. Even air pollution was not absent. In addition to dust and offensive odors, the atmosphere was filled with smoke on calm days. Even today, in large preindustrial cities such as Calcutta the smoke of thousands of individual cooking fires, in addition to other human activities, produces a definite path of smoke and dust which seldom dissipates for long. Under these unhealthy conditions, the death rate must have been high in Mesopotamian cities.

Ancient legends described an actual ecological event; the cedars of Lebanon, after centuries of exploitation and export to all the surrounding lands, were completely destroyed except for a few small groves, leaving their mountain slopes open to severe erosion.



## **2. Ancient Egypt and the natural environment.**

Far to the east of Mesopotamia, but in contact with it, another civilization flourished in the Indus River Valley. It is mentioned here because many scholars say that it fell because of mistreatment of its fragile semidesert environment. While Mesopotamian cities were built largely of sun-dried clay bricks, the Indus Valley cities used baked bricks almost exclusively, and great quantities of wood were required to fire them. This, combined with other uses of wood, produced widespread deforestation, while grazing of cattle, goats, and sheep further reduced the vegetative cover. The results included desiccation, flooding, and erosion. Some authors also theorize that the dust blown from the dried, denuded land produced a permanent layer of dusty haze in the atmosphere over the Indus Valley, which actually altered the climate by causing a temperature gradient that shifted the monsoon rains to the east, out of the area, and also caused premature seeding of the clouds which did develop in the area, further reducing the rainfall. Other scholars postulate a series of disastrous floods, which could also have been caused by deforestation.

Egyptian attitudes toward nature reflect the dependable periodicity of their natural environment. Their gods were deities of nature, intimately sharing the characteristics of the animals and plants which were their attributes.

Well-to-do Egyptians loved gardens, they planned them carefully with symmetrical beds of flowers and shallow pools of water, they picked up vegetables, herbs, vines, and fruit and shade trees to plant in them.



The history of the Egyptian environment in antiquity is marked by a great reduction in the numbers and abundance of wildlife. This was primarily due to the conversion of marshes into fields, but partially also due to hunting. Egyptians from the pharaoh on down hunted water birds and animals in the remaining wetlands, and pursued lions, wild cattle, deer, and antelope in the nearby desert. Today even once-abundant species are seldom seen.

As Egypt was never forested, most wood had to be imported from Lebanon or the Upper Nile. The chief material for major construction, stone, was abundant in Egypt and widely quarried. Copper and tin were mined in Sinai and other desert margins or imported from abroad.

The regularity of the Nile saved Egypt from some of the problems of Mesopotamia. The floods provided annual drainage, and salinization was not widespread in Egypt. In fact, Egypt continued to produce food surpluses throughout the ancient period and was a major exporter of grain to Greece and Rome.

All told, the unique environment of Egypt tended to shelter it from some of the bad effects of ecological change felt elsewhere in the ancient world, and helped to ensure its long continuity as a relatively conservative civilization.

## **SUMMARY WRITING**

**1. Rearrange and write the following sentences in a paragraph that summarizes the text. Begin your paragraph with sentence 7.**

1. There are, however, two important differences between ancient civilizations and the world today.
2. Second, during the past two hundred years, humankind has invented powerful technology which multiplies each individual's destructive impact on the environment.
3. If we do not take action soon, it may cause irreversible damage to the entire planet.
4. One man with an axe can cut down one or two large trees in a day; with modern machinery, the same man can cut down a whole forest.
5. The environmental crisis we are facing today will not just destroy a tiny corner of the earth.
6. We no longer live in isolated communities many hundreds of miles from our neighbors.
7. Modern people are selfish, but probably no more selfish than most of their predecessors.
8. First, there are so many more people in the world today.
9. Population growth and modern technology mean that we cannot afford to repeat the mistakes of our ancestors.

### **Key language**

**Match the words in the left-hand column with those in the right-hand column to make expressions from the text.**

- |               |                  |
|---------------|------------------|
| 1. high       | a. surpluses     |
| 2. food       | b. world         |
| 3. unique     | c. periodicity   |
| 4. ancient    | d. semidesert    |
| 5. dependable | e. environment   |
| 6. fragile    | f. civilizations |
| 7. important  | g. evidence      |
| 8. surviving  | h. inventions    |

### **TEXT 4**

**1. What do you know about ecological management? Choose the best answer.**

- a. Photosynthesis, exchange of energy and information are realized by means of the atmosphere/stratosphere.
- b. The atmosphere protects living organisms from the effects of cosmic radiation/ daily and seasonal thermal regime.

c. The atmosphere directly/indirectly supports life, accumulating heat.

d. The procedure for organizing and monitoring in the field of air protection is ascertained by the Cabinet of Ministers of Ukraine/ the Government.

e. Permissible emission of pollutants is the maximum of polluting substances determined at the place of its escape/production.

**2. Find the following words in the text.**

1. the outline of a coast, especially with regard to its shape and appearance

2. a substance made by mixing other substances together

3. causing or likely to cause harm

4. The process by which green plants and some other organisms use sunlight to synthesize foods from carbon dioxide and water

5. as is certain to happen; unavoidably

6. a danger or risk.

**3. Read the text, define the key words and write abstracts both in English, and Ukrainian.**

### **MANAGEMENT IN THE SPHERE OF AIR PROTECTION**

Atmospheric air is one of the basic essential elements of the environment and represents a natural mixture of gases outside the residential, industrial and other facilities.

Basic processes of the biosphere - photosynthesis, exchange of energy and information are realized by means of the atmosphere. It protects living organisms from the effects of cosmic radiation and regulates the daily and seasonal thermal regime.

The atmosphere does not only directly supports life, but also accumulates heat, warming the Earth. If air temperature rises by only some degrees, polar ice will start melting and flood vast coastlines. The ozone layer absorbs most of the harmful for life ultraviolet radiation.

However, for normal human life and all living organisms not only air is needed but also its certain defined purity. Under the influence of human industrial activity, the characteristics and properties of air are constantly changing. Nowadays in Ukraine, there are no such areas, where air has kept its natural purity and quality. In some industrial areas (Donetsk and Dnieper regions) and all around regional centers the state of the atmosphere is disastrous.

We should pay attention to the growth of pollution from motto-car transport, which in modern conditions is one of the largest and most popular sources of air pollution.

Rapid increase in the number of cars, the growth of their engine power inevitably leads to the increase of exhaust gases and their particles in the air.

According to the Law of Ukraine "On protection of atmospheric air", the following are subjected to state accounting in the field of air protection:

- Objects, which have or may have harmful effects on human health and the state of air;
- Types and amounts of pollutants emitted into the air;
- Types and degrees of physical and biological factors influence on the atmospheric air.

State registration in the field of air protection is carried out according to the only system in the manner determined by the Cabinet of Ministers of Ukraine.

Monitoring in the field of air protection is done with the aim of receiving, collecting, processing, storing and analyzing information on emissions of pollutants and the level of air pollution, assessment and prediction of its changes and the degree of danger and working out of scientifically based recommendations for adopting decisions in the field of air protection.

Monitoring in the field of air protection is a constituent part of the state monitoring system of the natural environment. The procedure for organizing and monitoring in the field of air protection is ascertained by the Cabinet of Ministers of Ukraine.

Standards and regulations in the field of air protection are to determine the system of obligatory norms, rules, requirements as for the air protection against pollution and for environmental safety.

In the field of air protection, the following standards are determined:

- Standards of ecological safety of air;
- Standards of maximum permissible emissions of pollutants from stationary sources;
- Standards of maximum permissible effects of physical and biological factors from stationary sources;
- Standards of contents of pollutants in the exhaust gases and the influence of physical factors of mobile sources;
- Technological standards of permissible emissions of pollutants.

The standards of ecological safety of the air is a group of standards keeping to which prevents from hazards of danger to human health and the environment from the effects of harmful factors of the air;

The standards of maximum permissible pollutant emission from stationary sources is maximum permissible emissions of polluting substance or mixtures of these substances into atmosphere from stationary sources of emission.

The standards of maximum permissible effects of physical and biological factors from stationary sources is a standard, which is defined for each stationary source of acoustic, electromagnetic, ionizing, and other physical and biological factors on the level at which physical and biological influence of all sources in the area taking into consideration prospects of its development

during the term of the adopted standards will not bring to the exceeding of standards of environmental safety of air (according to the strictest standards).

The standards of pollutant contents in exhaust gases and the effects of physical factors from mobile services is the maximum permissible quantity of pollutants in the exhaust gases of mobile sources, thrown out into atmosphere. The technological standard of permissible emission of pollutants is the maximum permissible emission of polluting substances or mixtures of these substances, which is determined at the place of its escape out of the equipment;

The standards of air quality is the quality air criterion, which reflects maximum permissible contents of pollutants in the air and where the negative effects on people's health and the state of natural environment are absent.

**Read the text and speak about:**

1. The state of atmosphere in Ukraine.
2. The state registration in the sphere of air protection.
3. Monitoring in the sphere of air protection.
4. Standardization and regulation in the sphere of air protection.

**Key language**

**Match the words in the left-hand column with those in the right-hand column to make expressions from the text.**

- |                |              |
|----------------|--------------|
| 1. essential   | a. purity    |
| 2. thermal     | b. safety    |
| 3. natural     | c. elements  |
| 4. ecological  | d. substance |
| 5. polluting   | e. emission  |
| 6. permissible | f. regime    |

# PART II

## UNIT 5. WATER

### *I. GLOSSARY*

**Activity 1. Read and remember the following words, compose sentences of your own with them.**

1. assets (n) – майно, актив
2. cesspool (n) – стічна яма
3. claims (n) – вимоги, домагання
4. clog (v) – засмічувати
5. condemn (v) – осуджувати, бракувати, засуджувати
6. cripple (v) – калічити, нівечити, робити непридатним
7. dike (n) – дамба, гребля, стічна канава  
dike (v) – захищати дамбою, осушувати каналом
8. disaster (n) – лихо, нещастя
9. effluent (adj) – той, що витікає, просмоктується  
effluent (n) – стік, стічні води, річка, потік
10. endanger (v) – наражати на небезпеку
11. enforce (v) – підсилювати, робити тиск, заставляти
12. feat (adj) – спритний
13. float (v) – плавати, триматися на поверхні води
14. grassland (n) – пасовище, луки
15. plow (plough) (v) – орати
16. pottery (n) – гончарні вироби
17. precious (adj) – дорогоцінний, коштовний, вишуканий
18. restrict (v) – обмежувати, ставити межу
19. revenue (n) – дохід
20. salvation (n) – спасіння

### *II. VOCABULARY CHECK*

**Activity 1. Give Ukrainian equivalents for the following.**

1. lavish lifestyle
2. sewage dumping
3. sewage sludge

4. sewage pollution
5. brain damage
6. coastal water
7. dumping ground
8. endanger plants
9. extensive plowing
10. civil engineering
11. grazing of cattle
12. magnificent feat

**Activity 2. Match the following words with their explanations and try to give synonyms or antonyms.**

shortage	water plant of very simple structure
algae	amount of deficiency; condition of not having enough
silt	waste material and water carried in sewers
sediment load	material carried along and then left in a place by moving water or ice
to irrigate	to break up or turn over land with a plough; to force a way or make a track
scarce	loose land, mud, soil, etc. carried in running water, then dropped
plowing	to supply water to (dry land) by providing with man-made stream
lavish	not much or many compared with what is wanted; hard to find, not plentiful
sewage	very free, generous or wasteful in giving or using

### **III. GRAMMAR REVIEW**

#### **Утворення умовного способу (The Conditional Mood)**

Conditional Mood - складна форма, яка утворюється з допоміжних дієслів *should* і *would* і основи інфінітива відмінюваного дієслова. Conditional Mood має два часи: Present Conditional і Perfect Conditional.

Present Conditional збігається за формою з Future Simple in the Past, а Perfect Conditional - з Future Perfect in the Past, але вони розрізняються за своїм значенням.

Умовні речення вживаються з *if*. Основні види умовних речень це: тип 0, тип 1, тип 2, тип 3.

Вони складаються з двох частин: *the if – clause* (гіпотеза) і головне речення (результат). Коли *if – clause* стоїть перед головним реченням, між ними ставиться кома. Якщо головне речення стоїть перед *if – clause*, кома не потрібна.

*If* the weather is good tomorrow, we will go to the beach.

Якщо завтра буде гарна погода, поїдемо на пляж.

We will go to the beach, *if* the weather is good tomorrow.

	<b>If – clause (гіпотеза)</b>	<b>Головне речення (результат )</b>	<b>Вживання</b>
<b>Тип 0 (загальна правда)</b>	if + present simple	present simple	Те, що завжди існує
<b>Тип 1 (реальний теперішній час)</b>	if + present simple, present continuous, present perfect or present perfect continuous	future/imperative/can/ may/might/must/ should/ could + bare infinitive	Реальне, можливо трапиться у теперішньому або майбутньому
<b>Тип 2 (нереальний, в тепер.часі)</b>	if + past simple or past continuous	would/could/might + bare infinitive	Уявна ситуація, яка протирічить фактам в теп.часі, вживається для порад
<b>Тип 3 (нереальний,в минулому часі)</b>	if + past perfect or past perfect continuous	would/could/might + have + past participle	Уявна ситуація, яка протирічить фактам в минулому, також вживалася для вираження співчуття або критики

### Exercise 1.

Fill in the gaps with *if or when* and a verb in the present tense, then translate the sentences:

1. We might go for a walk tomorrow. ...., we will take the dog with us.
2. The guests will arrive soon. ...., we will greet them at the door.
3. I am going to phone Sam in a minute. .... him, I want you to leave the room.
4. I might visit Nina tomorrow. .... her, I will buy her a present.
5. The bus comes at eight o'clock. ...., we will all get on it.
6. She might invite us to her party. .... us, we will go.
7. The film will start soon. ...., I will record it.

### Exercise 2.

Environmentalists are worried about the greenhouse effect. Make sentences, using *if..., ...will...*

Example

*If the earth gets warmer, the sea will get warmer.*

*If the sea gets warmer...*

If ...the earth gets warmer

the sea gets warmer

the ice at the North and South Poles melts

the sea level rises

there are floods in many parts of the world

many people lose their homes and land

### Exercise 3.

**Rewrite the following as conditional sentences:**

1. You need to go to Egypt to see the Sphinx. If .....
2. John didn't leave early so he didn't get there on time. If .....
3. She uses factor 12 suntan lotion as she gets sunburnt easily. If .....
4. My computer is out of order, so I'll have to use the one in the office.  
If .....
5. Calling her, might make her feel better. If .....
6. There'll be an election if the president resigns. Providing .....
7. More tickets need to be sold, otherwise the concert will be cancelled.  
If .....
8. You'll have trouble selling your house if you're not prepared to accept  
a lower offer. Unless.....
9. He cancelled his trip because he had run out of money.  
If .....
10. Tom didn't wear a coat and caught a cold. If .....
11. You need to study hard to pass this exam. Unless .....
12. You really ought to go somewhere sunnier to get a suntan. Unless  
.....
13. He doesn't know her. That's why he didn't speak to her.  
.....
14. He lost his job. He's unemployed now. ....

### Exercise 4.

**Put the verbs in brackets into the correct tense, then identify the types of conditionals:**

1. If he ..... (change) jobs, he would be a lot happier.
2. Even if he ..... (ask) them, they wouldn't have agreed to come.
3. I ..... (not/trust) him if I were you.
4. If you're patient for a few minutes, I ..... (be able) to finish this.
5. I wouldn't have been able to do it unless she ..... (help) me.
6. Sometimes if you ..... (take) a chance, it pays off.
7. If he ..... (wake up) earlier, he wouldn't have been late for work.

8. If we ..... (intend) to spend the day in London, we would have bought a day pass.
9. If she ..... (be) more experienced, she would be more likely to get a job.
10. If the food ..... (not/be) so bad, we wouldn't have complained.

### Exercise 5.

**Complete the text by putting the verbs in brackets into the correct tense:**

If I were world leader, I 1) ..... (try) to stop the destruction of the earth and 2) ..... (make) the world a better place for all people. If the world's problems had been tackled sooner, the quality of life 3) ..... (improve) long ago. First of all, I would try to bring about peace in the world. As long as there is fighting between nations, millions of people 4) ..... (continue) to suffer and die. If wars continue, children 5) ..... (be left) without parents and 6) ..... (grow up) in a world of misery and fear. But as long as people disagree over land and possessions, the fighting 7) ..... (go on).

Therefore, I would ensure that all people were treated as equals and given the same opportunities in life. It would also help if all countries 8) ..... (stop) producing arms so there would no longer be the weapons with which to fight. In addition, I would introduce laws to reduce pollution. If pollution levels had been controlled earlier, life 9) ..... (not/become) so unbearable. If I 10) ..... (have) the power, I would ban all cars from city centres and increase public transport. If there (be) more trees, the air we breathe 11) ..... (be) cleaner. Unless measures are taken soon, it 12) ..... (be) too late both for ourselves and our children.

## ***IV PRE-TEXT DISCUSSION***

### **Activity 1. Do you know that:**

- The shortage of clean water is dangerous.
- Per capita water consumption differs in the developed and in the developing countries.
- Access to clean drinking water is one of the basic human rights.
- Lake Baikal is one of the largest fresh water lakes in the world.
- Environmental standards in the former Soviet States were much lower than in the West.
- The Mediterranean Sea is responsible for 50 percent of all marine pollution.

- Industrial wastes and sewage dumping are the main sources of water pollution.

**Activity 2. Make up dialogues of your own, discussing the information given in the part “Do you know that”.**

**Activity 3. Give your opinion on the following**

1. The problem of clean water is the most urgent environmental problem of our days.
2. Man and his history is a question of water and a little else.
3. Many dams and irrigation schemes have been and are environmental disasters.

## ***V. READ AND TRANSLATE TEXT 5A***

### **Text 5 A**

#### **“Water”**

One of the most urgent environmental problems in the world today is the shortage of clean water. There are large differences in per capita water consumption between different countries. A comfortable lifestyle (with flush toilets, washing machines and public swimming pools) uses a lot of water. A lavish lifestyle (with automatic car-wash machines, Jacuzzis and backyard swimming pools) uses many times more. The average Kenyan uses five liters of water a day, the average American uses 1,000. More and more people in the world are adopting a Western lifestyle. So even if population growth stops, the water shortage will get worse.



Access to clean drinking water is a basic human right. But acid rain, industrial pollution and sewage dumping have made many sources of water undrinkable. Lakes, reservoirs and even entire seas have become vast pools of poison. Lake Baikal in Russia is one of the largest lakes in the world. It is also one of the most beautiful. The local people call it the Holy Sea. It contains a rich variety of animals and plants, including 1,300 rare species that do not exist anywhere else in the world. But they are being destroyed by the massive volumes of industrial effluent which pour into the lake every day. Until very recently, environmental standards in the former Soviet states were much lower than in the West. Even where laws existed, the government did not have the power to enforce them. Most industries simply ignored the regulations.

The Mediterranean Sea occupies 1 percent of the world's water surface. But it is the dumping-ground for 50 percent of all marine pollution. Sixteen countries border on



the Mediterranean. Almost all of them regularly dump shiploads of industrial waste a few miles offshore. Sewage effluents pour into the sea only meters from popular bathing beaches. In 1975, the United Nations Environment Program brought together these 16 countries and drew up the Mediterranean Action Plan. The countries agreed to stop dumping from ships and to reduce sewage pollution. Few, if any, of them have kept their word.

Sewage is a rich source of micronutrients, which are essential for the growth of plants and animals. Sewage sludge, and fertilizers washed off the land, increase the concentration of micronutrients (particularly nitrates) in the sea to dangerous levels. Plankton (tiny plants that float near the surface of the water) become so numerous that they cut out the light to deeper parts of the sea. This endangers plants that grow on the seabed, which need the sun's light for photosynthesis. Seaweed is also very sensitive to changes in the level of micronutrients in coastal waters. One or two species of algae (seaweed) can outgrow all the other species. Overgrowth of algae can cause slimy, smelly, ugly deposits on beaches. Occasionally algae produce poisonous toxins that can kill fish or cause skin rashes in swimmers.

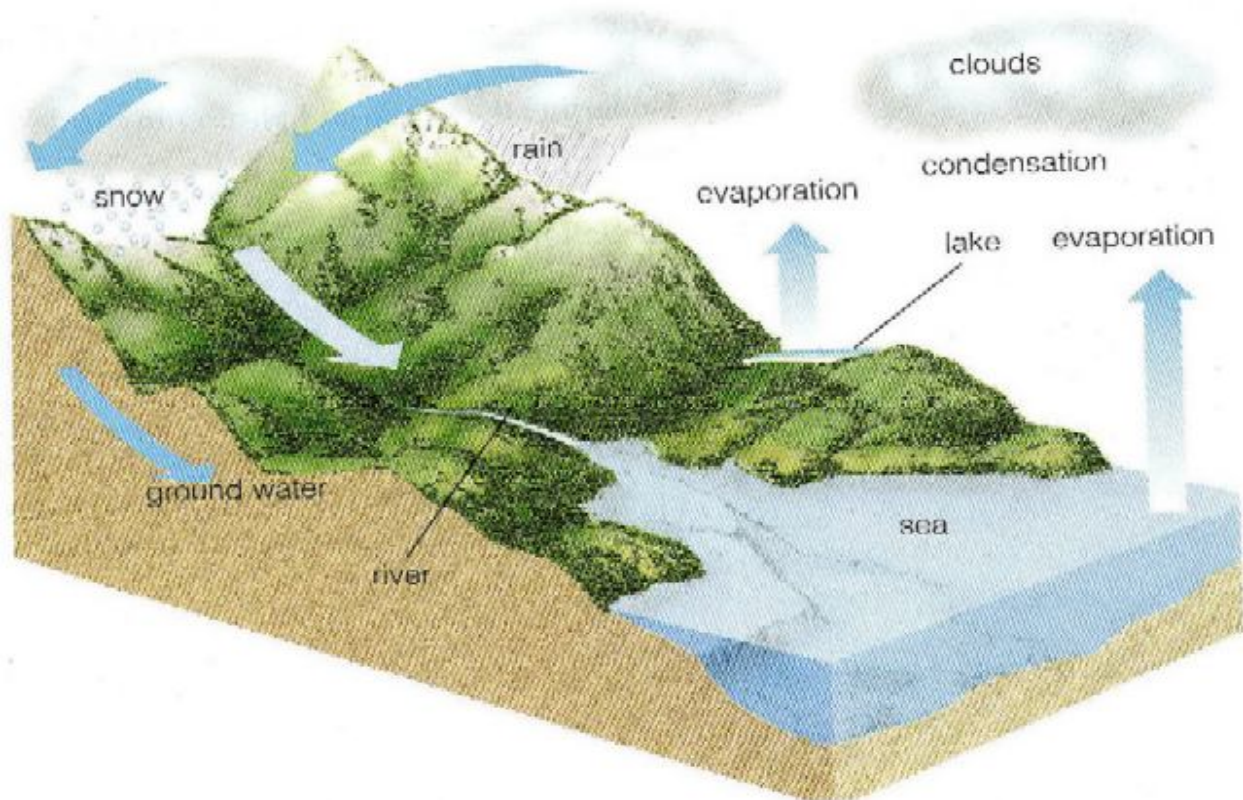
We are usually impressed by "developments" such as huge dams, dikes and irrigation schemes. These are often magnificent feats of civil engineering. They cost a lot of money and use modern materials and equipment. We often assume that the people who plan and build these systems know what effect they will have on the environment. In fact, many dams and irrigation schemes have been environmental disasters. Three quarters of the world's water is used to irrigate crops, so inefficient or extravagant irrigation schemes can cripple a region's water supply. The Aral Sea in Russia was once the fourth-biggest lake in the world. It is now less than half the size it was in 1965. Badly-planned irrigation schemes have taken water from the rivers that fed the Aral Sea. In addition, overuse of pesticides on the cotton crops nearby has polluted the water with toxic chemicals. Great damage was caused to the Nile Valley by Egypt's Aswan Dam.

In some cases, major water diversion projects began because a new technology became available and governments wanted to demonstrate their new-found power over nature. Dams can also be a direct political tool.

Rivers often flow through one country to get to another, so the first country can potentially control the flow of water into the second. Turkey has recently built several dams across the river Euphrates, and has already used these dams to restrict the water flowing through to Iraq and Syria. It has also signed an agreement to sell water to Israel.

"Development" projects can also make soil erosion worse. Forests and grasslands in a river valley soak up water after heavy rains and slowly release it back into streams and rivers. This prevents the valley from becoming dry and dusty in the months without rain. In addition, vegetation also prevents erosion by holding the particles of soil together. If there is no vegetation, the soil crumbles away and is washed into the rivers as silt. Rivers become clogged with sediment. Lakes change from clear, blue pools into thick, muddy puddles. The destruction of rainforests, and intensive farming practices (such as heavy grazing of cattle and excessive plowing with powerful machines) both increase soil erosion. Because of deforestation and modern farming methods, the sediment load of the Yellow River in China is 1.6 billion metric tons per year, and that of the Ganges is 1.455 billion metric tons. The traditional farming methods used by primitive communities may seem inefficient, but the sediment loss from these methods is tiny.

The best things in life are free. But because water is free, we often take it for granted. A few years ago, people thought that the supply of clean water in the world was limitless. Today, many water supplies have been ruined by pollution and sewage. Others have dried up because we have diverted the water for hydroelectricity or badly-planned irrigation projects. The destruction of forests and grasslands has increased soil erosion. Clean water is now scarce, and we are at last beginning to respect this precious resource. Like other environmental resources, the clean water that remains is the property of our children and grandchildren. For their sake, we must fight to protect what is left of the water supply.



## The water cycle

### ***VI. COMPREHENSION CHECK***

#### **Activity 1. Do the false/true activity**

1. If the population falls there will be enough water.
2. The use of sewage sludge and fertilizers is bad for plants on the sea bed.
3. It is good that sewage sludge and fertilizers help plankton to grow strongly.
4. Polluting water with industrial waste and sewage is worse than the damage caused by poor civil engineering developments.
5. Very many people are protesting about industrial effluent but very little is being done.
6. Forests and grasslands are necessary to keep valleys supplied with water.
7. The Aral Sea is the fourth biggest lake in the world.
8. People are less likely to condemn poor civil engineering developments than polluting water with industrial waste and sewage.
9. There have been some improvements in treating industrial effluent in Russia.
10. Clean water is now scarce and we are at last beginning to respect this precious resource.

**Activity 2. Look through text 5 carefully. Then complete the following to make suitable sentences according to the meaning of the text.**

1. The reasons for the shortage of water are \_\_\_\_\_.
2. Factors affecting water demand and factors affecting the supply mean that nowadays there is \_\_\_\_\_.
3. The water demand has increased because \_\_\_\_\_.
4. There is also less water available in reserves on account of \_\_\_\_\_.
5. We condemn pollution of water supply by \_\_\_\_\_.
6. The Mediterranean Sea occupies 1 percent of \_\_\_\_\_.
7. Access to clean drinking water is \_\_\_\_\_.
8. Lake Baikal contains a rich variety of \_\_\_\_\_.
9. One of two species of algae can outgrow all \_\_\_\_\_.
10. Many dams and irrigation schemes have been \_\_\_\_\_.

## ***VII. DISCUSSION***

**Activity 1. Define the logical parts of text 5 entitling each of them.**

**Activity 2. Work in pairs. Ask and answer the questions on text 5.**

**Activity 3. Translate in writing and reproduce.**

- Can the sea-water be the cause of health hazards?
- Certainly. Today grave concern is expressed about the pollution of the sea with untreated domestic and industrial sewage. This concern is expressed with justification. Sea is the final cesspool into which most of the discharge of man's polluting activities flows.
- What is the most important aspect of the pollution?
- The sea pollution problem has many aspects but in its essence it is a question of toxicology. The toxic effects of a chemical substance on a specific cellular system of an organism, be it a plant, an animal, or a man are manifold and harmful. Industrial pollution has proved disastrous to the fishery, especially, in certain regions.
- What is the present state of affairs with fish safety in general?
- Well, today it is very hard for big and small fish alike to survive in polluted water as they choke with refuse, ashes, chemical salts, tars, phenol and bacteria. In some places a layer of grease has formed on the surface of the water which prevents oxygen from penetrating through it.
- Can the fish from waste water be the direct threat to human health?

- Yes, indeed. It's the matter of great concern. Public Health Service record (official report) has established that human poisoning and illnesses associated with eating contaminated fish and shell-fish multiply.
- What parts of the sea are most susceptible to pollution?
- The continental coastal regions and the insular shallow water areas in tropical seas are. It's just the part of the sea from which the world's marine fishery products are derived.

\*\*\*

- Студенти, у Вас є питання по темі лекції „Вода”?
- Так, у мене питання.
- Будь ласка. Я спробую відповісти.
- З лекції я зрозуміла, що чим вище рівень життя, тим більше витрачається води, чи не так?
- Так, ви повністю праві! Є розвинені країни, які використовують в день в середньому 1000 л води на людину, але ми знаємо, що в інших країнах споживання води на душу населення в день складає 5 л.
- Дякую.
- А яка ситуація з водою в Україні? Хто може відповісти?
- В Україні існує проблема з питною водою. З кожним роком все більше малих річок зникають з карти України, а ті, що є - забруднені стоками.

**Activity 4. Make up your own dialogues on the theme “Water”.**

## ***VIII. SKIM TEXT 5B AND GET READY TO SPEAK ABOUT EGYPT***

### **Text 5B**

#### **Can Egypt escape its climate future?**

1. Africa is the continent most vulnerable to climate change, because of its vastness, poverty and diversity. Its people also stand to lose the most because they have the least resources to adapt. John Vidal embarked on a journey between Africa's two most industrialized countries – South Africa and Egypt. The route included one of Africa's poorest nations (Malawi), its newest (Southern Sudan), its hungriest (Ethiopia), visiting some of its most remote tribes (in Uganda and Kenya), highest mountains (Uganda) and coastal areas (South Africa).
2. In fact, the ecological turmoil taking place on the delta is mostly a natural coastal process that has happened throughout recorded history. However, scientists say, there's a perfect storm brewing and climate change will inevitably have a major role in the future story of Egypt. It's quite possible that Egypt's second city, Alexandria, will become an island connected to the rest of Egypt

by a bridge. But they also believe that the country – one of the richest in Africa – will be able to adapt if it spends billions of dollars.

3. It is obvious, they say, that not only is North Africa steadily sinking – or subducting – into the Mediterranean, but also the great Nile water is barely getting to the coast in places because so much is taken off by farmers or evaporating before it reaches the sea. In addition, storms and sea surges are worsening and world record-scale temperatures are being recorded. But it is being aggravated by the increasing intensity of storms. Last year saw the worst storms in decades. The last few years have seen temperature spikes, with nights becoming unbearably hot and then switching to freezing cold. But the real issues are groundwater and soil salinization.

4. Some scientists have claimed that the predicted one-metre rise in sea levels over the next 90 years will completely inundate the Nile delta, leaving it little more than wide open expanses of sea and devastating the economy. At worst, 1.5 million people could be displaced in Alexandria alone. Further areas will become impossible to cultivate and extreme heat will make cities unbearably hot. The trouble is that Africa has very few climate models, little research has been done on the continent and what exists is ambiguous.

5. The models range from suggesting Egypt will have 30% more water, because of hotter weather, to 70% less, because of evaporation. The government is very uncertain but is deeply concerned about irrigation works taking place in Sudan and Ethiopia. What is certain is that climate change will hit the most vulnerable people first and hardest throughout Africa. It's always the poor who are hurt the most because they are less able to absorb the shocks and adapt because they have fewer assets. The best that could happen, suggests one source in the ministry of water, is that Egypt strikes lucky and taps into what is believed to be a vast underground water oasis spanning parts of Chad, Egypt, Libya and Sudan.

**I. Read the text. Choose the most suitable heading from the list (A-G) for each part (1-5) of the text. There are two extra headings which you do not need to use.**

- A. The main issues of climate change in Egypt.
- B. Climate change affects all African countries.
- C. Egypt will need huge sums of money to adapt to new climate conditions.
- D. The evidence of much older life.
- E. Unexplored climate models of the continent.
- F. Difference between present-day and ancient geography.
- G. Reliance on underground water reservoirs.

**II. Read the text. For statements (6-15) choose “True” if the statement is true according to the text, “False” if the statement is false.**

6. Vastness, poverty and diversity of Africa make it most vulnerable to climate change.

7. Africa is poor in resources to adapt to climate change.
8. South Africa and Egypt are the least industrialized countries on the continent.
9. Southern Sudan is the oldest country on the continent.
10. Climate change affects all countries in different ways.
11. Alexandria can become a peninsula in future.
12. Climate change will play a significant role in the future of Egypt.
13. The great Nile loses its water because of evaporation.
14. The Nile delta will become wide open expanses of sea.
15. Irrigation works in Sudan and Ethiopia affect water supply to Egypt.

**III. Read the text. For questions (16-20) choose the correct answer (A, B, C or D).**

16. Africa is the continent \_\_\_\_\_
  - A. with diverse natural conditions
  - B. with the largest population
  - C. that can be affected by climate change most
  - D. formed less than a million years ago
17. The ecological disaster taking place on the delta is \_\_\_\_\_
  - A. a natural coastal process
  - B. man-made
  - C. caused by irrigation in the neighbouring countries
  - D. leads to scarcity of resources
18. The real issues of Egypt are \_\_\_\_\_
  - A. sea level rise
  - B. groundwater and soil salinization
  - C. weather conditions
  - D. increasing intensity of winds
19. In the future scenario lands in Egypt \_\_\_\_\_
  - A. will be more fertile
  - B. will feed all the continent
  - C. will be affected by new technologies
  - D. will become impossible to cultivate
20. The best that could happen for Egypt, is \_\_\_\_\_
  - A. to find a vast underground water oasis
  - B. to ask for help from the developed countries
  - C. to change weather patterns in the Southern Hemisphere
  - D. to rely on Gods' mercy

**IV. Match words (21-30) with their definitions (a-l). There are two definitions, that you do not need to use.**

**TEST-REVIEW V**

21	poverty	a	trouble
22	to embark on	b	deprive
23	to experience	c	drying up
24	turmoil	d	begin
25	to subduct	e	hardship
26	to aggravate	f	submerge
27	evaporation	g	destroy or ruin (something).
28	to inundate	h	make a problem
29	to devastate	i	unclear
30	ambiguous	j	similar
		k	go through
		l	certain

**Task I. Total: 5**

*Choose the correct word to complete the sentences.*

1. Pollution problems first ... during ancient times.

- A) arose                      C) have appeared  
B) were arising          D) arosed

2. The problem of pollution ... a major one at the end of the 20<sup>th</sup> century.

- A) is                              C) were  
B) will                          D) was

3. The forests ... disappearing at the rate of 0.001 hectares a day when they started investigation.

- A) was                              C) were  
B) are                              D) will be

4. He always ... your compliment.

- A) appreciated              C) have appreciated  
B) appreciates              D) were appreciating

5. She ... inviting them to the conference when he interrupted her.

- A) is                                  C) has  
B) were                              D) was

**Task II. Total 5**

*Use the correct form of the adjectives.*

1. It is the ... harmful substance I ever heard about.

- A) more                          B) most                          C) less

2. Coal was used to power ... of the factories and to heat ... of the homes.

- A) more                      B) a large number                      C) most

3. The pollution problem is ... complicated ... it serious.

- A) so ... as                      B) as ... as                      C) both as

4. Road transport makes journeys ... than air transport.

- A) long                      B) longest                      C) longer

5. New inventions of the 1900s made pollution steadily the ...

- A) bad                      B) worse                      C) worst

### Task III. Total 10

*Give English equivalents of the following.*

1. Виділяти дим в атмосферу
2. Зливати нафту
3. Отруювати воду
4. Впливати на природу
5. Забруднювати навколишнє середовище
6. Порушувати баланс в живій природі
7. Газы, що отруюють
8. Вимивати
9. Подразнювати легені
10. Шкідливий вплив
11. Ви навіть не уявляєте
12. Я Вам вдячний
13. Ось, візьми будь ласка
14. Тверді відходи
15. Кислотні дощі
16. Забруднення повітря
17. Теплове забруднення
18. Будь ласка (3 вислови)
19. Завжди Вам раді
20. Не треба дякувати.

### Task IV. Total 5

*Compose sentences with proposed question words.*

1. Railways have several advantages over road transport. (What...?)
2. Vehicles are as comfortable as dangerous. (What...?)
3. Pollution in the developed countries is higher than in the underdeveloped. (Where...?)

4. Pollution problems first arose during ancient times. (What problems...?)
5. In 1986 an explosion and fire occurred at a nuclear power plant in Chernobyl. (When...?)

### Task V. Total 5

*Insert the necessary words.*

1. Our natural beauty is ... .  
A) interesting                      B) unique                                      C) important
2. People pollute the air with ... .  
A) litter                                      B) exhaust gases                                      C) factories
3. The purpose of the Earth Day is to increase public awareness of ... .  
A) life                                      B) environmental problems                      C) future
4. In 1986 there happened the largest ... .  
A) emission of                      B) radioactive                                      C) oil spill  
gases                                      emission
5. Air pollution from ... has been greatly reduced in most parts of the world.  
A) solid wastes                      B) coal burning                                      C) water pollution

### Task VI. Total 10

1. Ми повинні приділяти більше уваги боротьбі з забрудненням довкілля.
2. Цей район найбрудніший в місті.
3. В 20-му сторіччі групи людей створили кілька потужних екологічних рухів.
4. Японія є однією з найбільш успішних країн у світі з переробки пластмас.
5. Усі забруднювачі можуть також впливати на клімат.
6. Парниковий ефект може викликати підвищення температури на землі.
7. Численні дослідження в США та в Європі показують, що шум відіграє велику роль у виникненні багатьох захворювань.
8. У країні прийнято закони про переробку й утилізацію пластикових відходів з 1997 року.
9. Вода має унікальні фізичні властивості.
10. Без води життя на нашій планеті було б неможливим, і ми повинні робити все, щоб забезпечити достатньо води для наших майбутніх поколінь.

## UNIT 6. LIQUID ASSETS

### I. GLOSSARY

**Activity 1. Read and remember the following words, compose sentences of your own with them.**

1. degrade (v) – погіршувати, псувати, занепадати
2. desert (n) – пустеля
3. estuary (n) – дельта, гирло (річки)
4. issue (n) – суть, випуск, результат
5. livelihood (n) – засоби існування
6. moisture (n) – вологість, сирість
7. reduce (v) – знижувати, послабляти, зменшувати
8. scarce (adj) – недостатній, бідний
9. seaweed (n) – морська водорість
10. sediment (n) – осад, відстій
11. sewage (n) – стічні води
12. shelter (n) – покрівля, притулок
13. shortage (n) – брак чого-небудь
14. skin (n) – шкіра
15. sluice (n) – шлюз, водовід, водосховище, канал
16. soak (up, in) (v) – всмоктувати (ся), просочувати (ся)
17. software (n) – програмне або матеріальне забезпечення
18. spring (n) – джерело
19. survive (v) – виживати
20. wash off (v) – змивати (ся)

### II. VOCABULARY CHECK

**Activity 1. Give English equivalents for the following.**

1. випасати худобу
2. розкішне життя
3. сильна ерозія
4. екстенсивне землеробство
5. вантаж (навантаження) осадової породи
6. споживання на душу населення
7. затвори з стічних вод
8. питна вода
9. сприймати за належне
10. русло річки

**Activity 2. Give Ukrainian equivalents for the following.**

1. average depth
2. idea of pottery
3. tropical sun
4. springs and rivers
5. alarming figure
6. ignore moisture
7. lack of moisture
8. relocation of water resources
9. degradation of rivers
10. wet regions

**III. GRAMMAR REVIEW. "CONDITIONAL MOOD"**

**Вживання:**

● **Тип 0:**

*If/When* the sun *shines*, snow *melts*.

*If/When* it *rains*, the roads *get* slippery and dangerous.

*If/When* the temperature *falls to* 0°C, water *turns into* ice.

● **Тип 1:**

*If* he *doesn't study* hard, he *won't pass* his exam.

*If* we *work* hard, we *'ll finish* the project on time.

*If* you *need* help, *come* and *see* me.

*If* you *have finished* your work, we *can have* a break.

*If* you *'re* ever in the area, you *should come* and *visit* us.

● **Тип 2:**

*If* I *won* the lottery, I *would buy* an expensive car and I *would go* on holiday to a tropical island next summer.

*If* I *had* time, I *would take up* a sport.

*If* I *were* you, I *would talk* to my parents about it.

● **Тип 3:**

*If* John *hadn't got up* late, he *wouldn't have missed* the bus.

*If* she *had studied* harder, she *would have passed* the test.

*If* he *hadn't been acting* so foolishly, he *wouldn't have been punished*.

*Had she* been asked, she *would have given* her permission.

● **Всі типи умовних речень можуть бути змішаними, і любий час може вживатись, якщо дозволяє контекст.**

If they were working all day (Type 2), they will be tired now (Type 1).

If I were you (Type 2), I would have accepted the job (Type 3).

If he were a better driver (Type 2), he wouldn't have crashed the car. (Type 3).

If she had finished earlier (Type 3), she would be going to the party tonight (Type 2).

### Конструкція з *I wish ...*

Часто реченню з нереальною умовою передують жалі з приводу неможливості його виконання. Форма таких речень відрізняється в українській та англійській мовах. В українській це шкода, в англійській – бажання, щоб було по-іншому.

I wish he were here. – Шкода, що його тут немає. (Хотілося б, щоб він тут був).

I wish he had been here. – Шкода, що його тут не було.

I wish he would be here. – Шкода, що його тут не буде.

#### Exercise 1.

##### Rewrite the following as conditional sentences:

1. You felt sick and you missed your friend's birthday party.
2. You got up late and you missed the train.
3. You weren't offered the job because you weren't qualified.
4. You're not a senior staff member so you can't use a car park.
5. You didn't go to the meeting so you didn't hear about the safety inspection.
3. You want to go away for the weekend but you've got lots of homework.
4. You want a pet but you're allergic to animals.
5. You damaged the video because you didn't know how to connect it.
6. You like chocolate but you're on a diet.
7. You enjoy playing tennis but you have twisted your ankle.

#### Exercise 2.

##### Translate into English.

1. Якби люди менше втручалися у природні процеси, клімат не змінювався би так швидко.
2. Було б добре, якби кількість автомобілів на наших дорогах зростала повільніше.
3. Я був би дуже радий, якби літо було довшим і не таким спекотним.
4. Вони допомогли б мені, якби були зараз тут.
5. Води у наших водоймах були б набагато чистішими, якби підприємства подбали про очисні споруди.
6. Кількість бідних на планеті зменшилась би, якби багаті думали не тільки про свої власні інтереси.
7. Якщо не буде вжито заходів щодо зменшення викидів парникових газів, озоновий шар може зникнути.
8. На вашому місці я б завершив цей проєкт як найшвидше.
9. Наші діти і онуки відчують на собі результати потепління клімату, якщо ми не прикладемо належних зусиль.

10. Я ніколи не згодилася б на цю роботу, якби вони не запросили мене.

### Exercise 3.

**Complete these sentences using Active Vocabulary:**

1. If it stopped raining, we *could go out*.
2. Would you use a computer, if \_\_\_\_\_
3. I'd feel quite happy, if \_\_\_\_\_
4. Would you mind if \_\_\_\_\_
5. What would he \_\_\_\_\_, if \_\_\_\_\_
6. If \_\_\_\_\_, where \_\_\_\_\_?

### Exercise 4.

**All people have dreams. Tell other students about your dreams and desires:**

Begin with:

1. I wish I were \_\_\_\_\_ (who? what?)
2. For ideas: a customs officer, a president, a butterfly, a top manager, etc.
3. I wish I did/I could \_\_\_\_\_ (do something)
4. For ideas: speak fluent English, fly, win, fall in love, discover, ride, etc.
5. I wish I were \_\_\_\_\_ (like what?)
6. For ideas: beautiful/handsome, strong, healthy, wealthy, dangerous, prosperous.
7. I wish I had \_\_\_\_\_ (what?)
8. For ideas: a castle, a private airplane/yacht, computer.
9. I wish I were \_\_\_\_\_ (where?)
10. For ideas: in New Zealand, in train, on the beach, in London, at home, etc.

## IV PRE-TEXT DISCUSSION

**Activity 1. Do you know that:**

- Under the tropical sun women have to carry water again, again and again.
- Egypt has 55 bn cubic meters from the Nile.
- On average, one million people require a billion cubic meters of water a year.
- The state of our water largely depends on the conditions of estuaries.
- The earth has as much water as it ever had: no more, no less.

**Activity 2. Make up dialogues of your own, discussing the information given in the part "Do you know that".**

**Activity 3. Give your opinion on the following**

1. Water is gold for everyone in the Middle East.
2. Water played an important part in man's progress.
3. The greatest number of townspeople need more and more new water sources.

**V. READ AND TRANSLATE TEXT 6A****Text 6 A.****“Liquid Assets”**

There is no life without water. Man can live without clothes, without shelter, and even for some time without food. Without water he soon dies. But not all water helps him to survive: if it is not clean, then also he may die before his time.

Some people say that man and his story is "a question of water and little else." All his food has water, from about 60 to as much as 95 per cent. His body is about 70 per cent water. The surface of the earth is 70 per cent water to an average depth of over 4 kilometers. But often man does not have enough water.

Water played an important part in man's progress. He needed something to carry and keep water in, and so the idea of 'pottery was born. Ancient civilizations rose on the banks of the Nile, the Tigris, and other rivers. But then the world's population was not so large as it is now. And industry is thirsty, too. We need 3,5 liters of water to produce a kilogram of dry cement, 10 liters to produce one liter of petrol, 100 liters to produce one kilogram of paper, and so on.

The greatest number of townspeople needing new water services lives in South-Central and South-East Asia. The needs are greatest in India, Indonesia, the Philippines, Nigeria, Brazil and Pakistan.

Under the tropical sun women have to carry water again, again and again. In the dry parts of Africa, where there is little surface water and no ground water, housewives spend most of their time carrying a few liters of water from springs and rivers which are sometimes as much as 15 kilometers or three good hours' walk away. People there are so short of water that they use it mostly or only for drinking, and very little or nothing is left for hygiene.

The earth has as much water as it ever had: no more, no less. But with every year the population of the world gets larger and larger.

In the climb up the ladder of civilization, first things come first; one of those things is certainly clean, plentiful and convenient water supply in all parts of the world.

For the Middle East, water has always been a politically sensitive issue.

The river Jordan, in the words of the old gospel song, is deep and wide with milk and honey on the other side... hallelujah! But no matter how deep and wide it may have been in biblical times, today the river is not much more than a trickle.

On average, one million people require a billion cubic meters of water a year, which means that the Middle East can meet only two-thirds of its needs. These alarming figures make the situation look better than it actually is because comparisons with wetter regions ignore moisture – or lack of it – in the soil.

"In the UK they only count the rivers and ground water, which doesn't have to supply the agriculture. About 80%-90% of UK water is in the soil". The Middle East, on the other hand, has little soil water.

Egypt, with a similar population to the UK, has 55 bn cubic meters from the Nile – and that's all. It's all engineered water and it gets counted.

This raises some intriguing questions. If the Middle East has been so massively short of water for years, how has it survived?

Water, for everyone in the Middle East, is a highly sensitive issue – not least because it is so closely related to the food supply. As a result, politics gets in the way of devising economically and environmentally logical policies.

Logically the first priority is to bring the issue into the open and secure supplies of virtual water through international food agreements. The second priority is to manage the demand for water and relocate it to the most profitable uses. The third priority is to use it more efficiently by improving irrigation, reducing waste, and so on. But in terms of political feasibility, these priorities are reversed in the Middle East.

The idea that the region will have to meet its water shortage by importing vast and growing quantities of food –for ever – creates feelings of deep insecurity, linked as it is to too many people's livelihoods. In Saudi Arabia, for example, at enormous expense they started to grow wheat and even exported some.

But reallocating water resources can bring huge benefits. As a field of wheat, the land would use 10,000 cubic meters of water per year, generate revenue of \$3,000 – \$4,000 and provide half a job. As a college, it uses the same amount of water, turns over \$50 m a year, provides 1,000 jobs and educates 3,500 students. This helps to explain why many Middle Eastern governments are so enthusiastic about information technology: you can write software in the desert, and it takes less water than growing a row of beans.

Reallocating water to more profitable uses also involves social change as people move to different types of jobs – arousing controversies that the politicians would rather avoid. In Egypt farmers are an important political force. Allocating water efficiently has a high political cost. People don't want to move water out of agriculture.

Ukraine's major water resource is the Dnipro, along with the Danube, Dnister, Southern Buh, Tysa, Prut, and other rivers. Experts stress that every year nearly one-third of the Ukrainian population suffers from illnesses caused by industrial waste being discharged in these bodies of water.



The state of our water and the full flow of these major rivers largely depend on the condition of their estuaries – small rivers of which there are some 63,000 in Ukraine. Their role is extremely important; suffice it to say that 90 percent of the populated areas in our country are located precisely in the valleys of small rivers and are using their water. However, the state of these small rivers in Ukraine is alarming. According to Derzhvodhosp statistics, Ukraine lost some 5,000 small bodies of water in the second half of the 20<sup>th</sup> century; this will inevitably cause our large rivers to degrade.

## ***VI. COMPREHENSION CHECK***

### **Activity 1. Do the false/true activity**

1. Water is closely related to the food supply.
2. Water in the Middle East is not a highly sensitive issue.
3. About 80-90% of UK water is in the soil.
4. One million people require a billion cubic meters of water a day.
5. For the Middle East water has always been a political issue.
6. Ancient civilization rose on the banks of the Dnister and Dniپر.
7. The state of river water doesn't depend on its estuaries.
8. Ukraine lost some 5000 small bodies of water in the second half of the 20<sup>th</sup> century.
9. In Egypt a farmer isn't an important political force.
10. The earth doesn't have as much water as it ever had.

**Activity 2. Look through text 6 A carefully. Then complete the following to make suitable sentences according to the meaning of the text.**

7. Today the river Jordan is not much more than a \_\_\_\_\_.
8. We need 3.5 liters of water to produce \_\_\_\_\_.
9. The surface of the earth is \_\_\_\_\_.
10. Ukraine's major water resource is \_\_\_\_\_.
11. Relocating water resources \_\_\_\_\_.
12. The Middle East can meet only two-thirds of \_\_\_\_\_.
13. Rather often a man does not have \_\_\_\_\_.
14. An ancient man needed something to \_\_\_\_\_.
15. The greatest number of townspeople needing new water services lives in \_\_\_\_\_.
16. In Saudi Arabia they started growing \_\_\_\_\_.

## **VII. DISCUSSION**

**Activity 1. Define the logical parts of text 6 A entitling each of them.**

**Activity 2. Work in pairs. Ask and answer the questions on text 6 A.**

**Activity 3. Translate in writing and reproduce.**

\*\*\*

- Що ти робиш? У тебе на столі стільки книг та газет.
- Я шукаю матеріал до доповіді про стічні води. Я буду виступати з нею на студентській науковій конференції.
- На жаль, я не можу тобі допомогти, тому що навчаюсь на факультеті іноземних мов. А що таке стічні води? Це каналізація? (sewerage).
- Ні! Стічні води – це джерело мікронутрієнтів (дрібні частки поживних речовин), які дуже важливі для росту рослин і тварин.
- Ну то й що? (And so what of it?)
- Піна та бруд від стічних вод вимивають ґрунт, збільшують концентрацію мікронутрієнтів (особливо нітратів) в морі до небезпечного рівня, а це дуже погано для навколишнього середовища.
- Зрозуміло.

\*\*\*

- Добрий вечір, Іване Івановичу.
- Добрий вечір, Марино.
- Іване Івановичу, що таке планктон?
- Планктон – це дрібні рослини, які плавають біля поверхні води.
- А вони корисні чи шкідливі з екологічної точки зору?

- Ну, скоріше шкідливі. Якщо їх багато, то вони не дають можливості світлу проникати у більш глибокі шари води. А це шкідливо для рослин, які ростуть на дні моря і потребують сонячного світла для фотосинтезу.
  - Зрозуміло. Дякую, Ви мені дуже допомогли.
  - Будь ласка. Завжди радий допомогти майбутній колезі.
- \*\*\*
- Ти що-небудь чула про проекти з відведення води або як їх ще називають „проекти зі зміни русла рік”?
  - Ні, а навіщо потрібні ці проекти?
  - Наскільки я знаю, ці проекти виникли завдяки новим технологіям, які дозволили вченим та уряду продемонструвати їх владу над природою.
  - Так ці ж проекти шкідливі!
  - Я думаю так само. Не можна змінювати течію річок. Дамби також були та і зараз є політичною зброєю.

**Activity 4. Make up your own dialogues on the theme “Liquid Assets”.**

## ***VIII. SKIM TEXT 6B AND GET READY TO SPEAK ABOUT CLIMATE CHANGE IMPACTS ON WATER AVAILABILITY***

**Text 6 B.**



### **CLIMATE CHANGE IMPACTS ON WATER AVAILABILITY**

1. It is known that water resources play a vital role in human prosperity and crop productivity. The world's agriculture, hydroelectric power and water supplies depend on different components of the hydrological cycle, including the natural replenishment of surface and groundwater resources. Water availability issues include how much water can be diverted, when the water can be available and how much water can be stored in surface and ground-water reservoirs.

2. Assessment of seasonal and long-term water availability is not only important for sustaining human life, biodiversity and the environment, but also helpful for water authorities and farmers to determine agricultural water management and water allocation.

3. Climate change is one of the greatest pressures on the hydrological cycle along with population growth, pollution, land use changes and other factors. Water availability is under threat from changing climate because of possible precipitation decrease in some regions of the world. In the light of the uncertainties of climate variability, water demand and socio-economic environmental effects, it is urgent to take some measures to use the limited water efficiently and develop some new water resources. If the water resources are replenished by snow accumulation and the snowmelt process, the water system will be more vulnerable to climate changes.

4. Many studies have considered climate change impacts on streamflow as well as spatial distribution of water availability under different climate conditions across the world. Scientists studied the climate change impacts on the runoff and water resources with the GIS (geographic information system) and GCMs in China and pointed out that runoff is more sensitive to precipitation variation than to temperature increase, and integrated water resources management can help mitigate climate change.

5. Climate impacts on water resources are varied in different river basins. The frequency of droughts and floods will increase under future climate conditions. Runoff and streamflow are more sensitive to rainfall than to evapotranspiration. Efficient water use and integrated management will be increasingly important for reducing the impacts on water scarcity and droughts. Although many water management approaches have been adapted to mitigate climate impacts, there is still a need to determine local solutions. It is necessary to know how much water can be used in each irrigation area and the river basin, when the water is available and how much water can be stored for use in the drought period, quantify variability of water resources over a long-term basis and associated links with energy and biodiversity.

**I. Read the text. Choose the most suitable heading from the list (A-G) for each part (1-5) of the text. There are two extra headings, which you do not need to use.**

- A. Influence of climate change on water availability
- B. How water can be stored
- C. Key problems of water supply
- D. How important it is to estimate water resources
- E. Solution to water scarcity and droughts.
- F. Reaction of water runoff to changes in climate
- G. Links with energy and biodiversity

**II. Read the text. For statements (6-15) choose "True" if the statement is true according to the text, "False" if the statement is false.**

6. Water resources play a vital role in human prosperity.
7. Hydrological cycle is extremely important for agriculture, hydroelectric power and water supplies.
8. Local water management approaches should be adapted to mitigate climate impacts.
9. Seasonal and long-term water availability assessment is not important for sustaining human life.
10. Climate change has the greatest pressure on the hydrological cycle.
11. Water authorities and farmers determine agricultural water management and water allocation.
12. Water availability is under threat from changing climate.
13. As a result of climate change precipitation can sharply decrease in some regions of the world.
14. Streamflow across the world does not change under different climate conditions.
15. Climate impacts on water resources are the same in different river basins.

**III. Read the text. For questions (16-20) choose the correct answer (A, B, C or D).**

16. The world's water supplies depend on \_\_\_\_\_
  - A. the natural replenishment of resources
  - B. are considered to exert no influence on the climate change
  - C. are expected to increase in the future
  - D. integration of science and industry
17. Water availability issues include \_\_\_\_\_
  - A. using recycling projects
  - B. making an effort to be power-consuming
  - C. waste-prevention measures
  - D. how much water can be diverted
18. Assessment of seasonal and long-term water availability \_\_\_\_\_
  - A. is an important environmental issue
  - B. can lead to water standards improvement
  - C. helps the authorities and farmers to determine water allocation.
  - D. is the task of local management bodies
19. GIS and GCMs in China showed \_\_\_\_\_
  - A. that runoff is more sensitive to precipitation variation than to temperature
  - B. spatial distribution of water availability

- C. that climate change influence cannot be mitigated
  - D. water scarcity and droughts
20. The frequency of droughts and floods \_\_\_\_\_
- A. depends on Moon's attraction
  - B. will increase under future climate conditions
  - C. is directly connected with anthropogenic impact on environment
  - D. is the subject of scientific studies

**IV. Match words (21-30) with their definitions (a-l). There are two definitions, that you do not need to use.**

- |    |               |   |  |
|----|---------------|---|--|
| 21 | vital         | a | renewal, replacement   |
| 22 | replenishment | b | cause (someone or something) to change course or turn from one direction to another. |
| 23 | available     | c | absolutely necessary or important; essential   |
| 24 | to divert     | d | distribute (resources or duties) for a particular purpose                            |
| 25 | to sustain    | e | able to be used or obtained; at someone's disposal.                                  |
| 26 | to assess     | f | rain, snow, sleet, or hail that falls to the ground.                                 |
| 27 | to allocate   | g | strengthen or support physically or mentally   |
| 28 | precipitation | h | susceptible to physical or emotional attack or harm.                                 |
| 29 | vulnerable    | i | evaluate or estimate the nature, ability, or quality                                 |
| 30 | to mitigate   | j | the application of scientific knowledge for practical purposes                       |
|    |               | k | make less severe, serious, or painful  |
|    |               | l | the action of sharing something out among a number of recipient                      |

### ***SUMMARY WRITING***

**Activity 1. Rearrange and write the following sentences in a paragraph that summarizes the text.**

1. The greatest number of townspeople needing new water lives in South-Central and South-East Asia.
2. Climbing the ladder of civilization up we understand that clean, plentiful and convenient water is life.
3. Man can live without clothes, without shelter and for sometimes without food but without water he soon dies.
4. People in dry parts of Africa are so short of water that they use it mostly or only for drinking.
5. In Egypt farmers are an important political force.
6. Water for everyone in the Middle East is a highly sensitive issue.

7. People don't want to move water out of agriculture.
8. The people of Ukraine are alarmed by the state of their rivers.
9. On average one million people require a billion cubic meters of water a year.
10. The earth has as much water as it ever had.

### **Activity 2. Translate into English using the dictionary.**

Гідросфера – це водна сфера нашої планети, сукупність океанів, морів, вод континентів, льодовикових покривів. Наша планета містить близько 16 млрд.куб.м води, що становить 0.25 % її маси. Основна частина цієї води (понад 80%) перебуває у глибинних зонах Землі – в її мантії. Підземна частина гідросфери охоплює ґрунтові, підґрунтові, міжпластові води.

Для величезної кількості живих організмів, особливо на ранніх етапах розвитку біосфери, вода була середовищем зародження та розвитку. Вода у біосфері перебуває у безперервному русі, бере початок у геологічному та біологічному кругообігах речовин. Вона є основою існування життя на Землі. Без води не може існувати людська цивілізація, бо вода використовується людьми не тільки для пиття, а й для забезпечення санітарно-гігієнічних та господарсько-побутових потреб.

Загальний об'єм води на нашій планеті оцінюється вражаючою цифрою – 1385 мільйонів кубічних кілометрів. Якби Земля була правильною сферою, цієї кількості було б достатньо, щоб покрити її на глибину 2650 метрів.

Лише незначна частина цієї води придатна для використання людиною. Абсолютна більшість цієї колосальної маси – це гіркувато-солоня морська вода, непридатна для життя та технічного використання.

## ***IX. LONG-TERM PROJECT WORK***

**Prepare projects on the following topics.**

1. Causes of the world water shortage.
2. The situation with Lake Baikal and the Aral Sea.
3. Irrigation schemes: advantages and disadvantages.

## ***X. SPOKEN ENGLISH (EVERY DAY ENGLISH)***

### **1. Remember!**

Ми кажемо: „У природи немає поганої погоди”. Англійці кажуть: „Немає поганої погоди, є поганий одяг”. Коли нам нема про що поговорити, ми говоримо про погоду. Щоб заповнити паузи, говорять про

погоду. Ми слухаємо прогноз погоди та плануємо, що одягти. Часто від погоди залежить наш настрій та й не тільки! Від відповіді на питання **“What is the weather like today?”** ми очікуємо все-таки чогось приємного, що підвищує настрій. Але відповідь не завжди звучить **“The weather is fine!”** іноді і **“The weather is nasty”** і настрій падає, але не забувайте „У природи немає поганої погоди!”

## 2. Speech patterns.

### Weather

How's the weather?	Яка погода?
What's the weather like?	Яка погода?
It's nice	Гарна (погода)
It's pleasant	Гарна (погода)
It's dreary	Похмуро
It's sunny	Сонячно
It's cloudy	Хмарно
It's rainy	Дощить
It's foggy	Туманна погода
It's hot	Гаряче
It's warm	Тепло
It's cool	Прохолодно
It's chilly	Прохолодно
It's cold	Холодно
It's freezing	Морозно
It's windy	Вітряна погода
It's humid	Сиро

### When there is precipitation at the moment

It is raining	падає дощ
It is snowing	падає сніг
It is sleeting	дощ зі снігом
It is hailing	град

### Extreme weather events include the following:

What is happening?	Що відбувається?
There is lightning	Блискавка
There is thunder	Грім
It's a storm	Шторм!
It's a gale	Сильний вітер
It's a hurricane	Ураган (сильний вітер зі швидкістю 75 миль на годину)

It's a cyclone	Циклон
It's a tornado	Торнадо (сильний вітер, що руйнує)
It's an earthquake	Землетрус
It's pleasant to walk in such weather.	Приємно гуляти в таку погоду
It's pleasant to go skating in such weather	Приємно кататися на ковзанах в таку погоду
It's pleasant to eat ice-cream when the temperature is 35° above zero.	Приємно з'їсти морозиво, коли температура 35°
The weather is fine	Погода чудова
The weather is wretched	Погода гидка
The weather is disgusting	Погода огидна
The climate is mild	Клімат м'який
The climate is humid	Клімат вологий
The climate is severe	Клімат суворий
The climate is temperate	Клімат помірний

Warm. Hot. Sleet. Drizzle. Fog. Snow. To be fast. To be slow. To keep right time. Alarm-clock. Watch. a.m. p.m.
--

a.m. – in the morning

p.m. – in the afternoon, evening, at night.

What time is it?	Котра година?
It is one o'clock or it is one a.m.	Перша
It is two o'clock or it is two p.m.	Друга
It is seven o'clock or it's seven p.m.	Сьома
It is eleven o'clock or it is eleven p.m.	Одинадцята
It is noon or it's twelve p.m.	Полудень
It is midnight or it's twelve a.m.	Північ

What time is it?	To answer:
use digital for:	it is + hour + the number of minutes past the hour
the traditional form:	it is + the number of minutes after the hour or the number of minutes before the hour

Digital form	Traditional forms
It's one-oh five= 13.05	It's five after one. It's five past one
It's two-ten = 14.10	It's ten after two. it's ten past two

It's three-fifteen = 15.15	It's fifteen after two. It's fifteen past two
It's nine-forty five =9.45	It's fifteen to ten. It's fifteen of ten. It's a quarter to ten. It's a quarter of ten

What time is the concert?	О котрій годині починається концерт?
It's at eight o'clock (It's at 8 p.m.)	О восьмій вечора.
What time is the party?	Коли починається вечірка?
It's at seven-thirty = 19.30	О 7.30
What time are we leaving?	Коли ви їдете?
We're leaving at 6 a.m. sharp.	Ми їдемо рівно о шостій ранку.
My watch keeps right time.	Мій годинник йде правильно.
My watch doesn't keep right time.	Мій годинник йде неправильно.
My watch is slow.	Мій годинник відстає.
My watch is five minutes slow	Мій годинник відстає на 5 хвилин.

### 3. Dialogues to be remembered

\*\*\*

- Lord! A beastly day. It's pouring outside. I'm wet through: my sweater, my shirt, jeans, socks, shoes are all wet.
- Gee! I'd say, Peter, you are wet!
- You don't look yourself. You should change your clothes as soon as possible, or you'll fall ill.

\*\*\*

- I wouldn't put it like that. This winter is extremely mild. The temperature is usually high. There is no snow. It often rains.
- You have said it.

\*\*\*

- What is the weather like today?
- It is rather warm, the sky is covered with grey clouds. Sometimes it rains.
- Do you like such weather?
- I don't. In such weather I feel sleepy.
- Same here.

\*\*\*

- Is it frosty?
- Oh, yes. The temperature is about 15 degree below zero.
- Don't forget to put on your fur hat.
- I won't.

\*\*\*

- How long does winter last in your city?
- It depends... Though December, January and February are the winter months, sometimes winter begins in February and lasts only 2 months.

\*\*\*

- What time is it now?
- I don't know exactly.
- Don't you have a watch?
- Yes, I do.
- Then, what time is it by your watch?
- I've forgotten it at home.
- It's a pity.

\*\*\*

- I must be off. Urgent business.
- What business I wonder?
- It's an appointment with my doctor.
- I am to be in his office at half past one. And now it is 20 past one.
- Take care!

#### 4. Translate in writing.

\*\*\*

- Погода кепська сьогодні, чи не так?
- Так, мабуть (Yes, rather).
- Що трапилось?
- Я не міг заснути всю ніч через цей жахливий вітер.

\*\*\*

- Чи помітили Ви, яка стоїть гарна погода?
- Вона чудова! (Gorgeous!)
- Дуже підходящий день для заміської прогулянки в ліс.
- Вірно!
- Шкода, що я не у відпустці насолоджуюсь природою!
- Тоді чекаю на вас внизу через 45 хвилин.
- Давайте звіримо годинники. Зараз 9.10. О 9.55 ми зустрічаємося у вестибюлі. Добре?
- Так, з нетерпінням чекаю на цю прогулянку.

\*\*\*

- Сподіваюсь, погода скоро зміниться.
- Я також сподіваюсь. Дуже втомилася від цього безкінечного дощу.
- Ллє як з відра вже 2 тижні.
- Не турбуйся! Англійці кажуть: „Немає поганої погоди, є поганий одяг”.

\*\*\*

- Що ви знаєте про клімат Великобританії?
- Там м'який клімат. Середня температура взимку вище, ніж в Україні. Сніг ніколи довго не лежить.
- А річки замерзають?

- Ніколи! Темза суднохідна весь рік, не те що Дніпро, який замерзає взимку!

### 5. Situations for spontaneous projects.

1. You and your friend didn't hear the weather forecast. When the lectures are over you see that it is raining heavily. You both don't have any umbrella but in 5 minutes you are to meet with your boyfriend.
2. The acquaintance of yours has just returned from a week tour to Spain. You want to know about the weather in Spain, if it always rains in Spain.
3. Your watch is 10 minutes slow. But you have forgotten about it. You are sure that you have come to the lecture in time, but the lecture has already begun. You are sure that you have come in time, the lecturer is sure that you were 10 minutes late.

## TEST-REVIEW VI

### Task I. Total: 5

*Choose the correct word to complete the sentences.*

1. If the pollution ... it will not be enough water.  
A) increase                      C) fell  
B) falls                          D) increases
2. If people protest against environment pollution the surrounding ... cleaner.  
A) will be                          C) becomes  
B) is                                  D) has been
3. If the destruction of rainforest was ... soil erosion would be less.  
A) stopped                          C) is stopped  
B) will be stopped              D) is being stopped
4. I would ... at the conference on environment problems if I had been invited in time.  
A) participate                      C) has participate  
B)                                  have    D) participated  
participated
5. If we ... to protect what is left for the water supply we will have enough water for the coming generation.  
A) fought                          C) will be fighting  
B) fight                              D) are being fought

**Task II. Total 10**

*Give English or Ukrainian equivalents of the following.*

1. Сильна ерозія
2. Питна вода
3. Споживання на душу населення
4. Dumping ground
5. Brain damage
6. Цивільне будівництво
7. Extensive plowing
8. Вантаж осадової породи
9. Розкішне життя
10. Мені треба йти, термінова справа
11. Жахливий вітер
12. Чекаю з нетерпінням
13. Температура вище нуля
14. Яка сьогодні погода?
15. Годинник показує точний час
16. Ваш годинник відстає на 6 хвилин
17. М'який клімат
18. Суднохідна ріка
19. Ллє, як з відра
20. Прогноз погоди

**Task III. Total 5**

*Complete the following conditional sentences and translate them.*

1. You will attend the lecture on sewage water treatment, if ....
2. If the earth gets warmer, the sea ....
3. The North and South Poles will melt if the sea level ....
4. If I had forgotten my watch at home I ....
5. Your watch would keep right time if you ....

**Task IV. Total 5**

*Make the following sentences disjunctive questions.*

1. The weather is fine.
2. He always forgets his watch at home.
3. There is no life without water.
4. One million people require a billion cubic meters of water a year.
5. Water has always been a politically sensitive issue.

**Task V. Total 5**

*Translate the following into English.*

1. Гідросфера – це водна сфера нашої планети.
2. Наша планета містить близько 16 млрд. куб. м. води.
3. Вода є основою існування життя на Землі.
4. Людська цивілізація не може існувати без води.
5. Якби Земля була правильною кулею, об'єму води на нашій планеті було б достатньо.

**Task VI. Total 5**

*Open the brackets to use the correct verb form.*

1. The cause of health hazards (may) (can) (could) be sea water.
2. Water in the Middle East (to be) a highly sensitive issue.
3. Without water a man soon (to die).
4. Our Earth (to have) as much water as it ever (to have).
5. An ancient man (to need) something (to carry) and (to keep) water in.

**Task VII. Total 5**

*Give three forms of the following irregular verbs.*

1. бачити
2. чути
3. дивитися
4. розуміти
5. відчувати
6. кричати
7. пити
8. вчити
9. ходити

**Task VIII. Total 5**

*Translate in writing without dictionary (Time for the task – 10 min).*

**Is It Safe to Drink the Water?**

Roughly 1,000 contaminants have been detected in the public water supply in the United States, and virtually every major water source is vulnerable to pollution. About half the U.S. population relies on surface water from rivers, lakes, and reservoirs that may contain industrial wastes and pesticides washed off fields by rain. The other half uses groundwater that may be tainted by chemicals slowly seeping in from toxic-waste dumps. In some areas where groundwater supplies are being gradually depleted, the chemical pollutants are becoming more concentrated.

Most pollutants are probably not concentrated enough to pose significant health hazards; however, there are exceptions. The most widespread danger in water is lead, which can cause high blood pressure and an array of other health problems. Lead is especially hazardous to children, since it impairs the development of brain cells. The U.S. EPA estimates that at least 42 million Americans are exposed to unacceptably high levels of lead, and the U.S. Public Health Service estimates that perhaps 9 million children are at least slightly affected by it.

The contamination comes from old lead poisoning and solder that have been used in plumbing for years. These materials are gradually being replaced in homes and water systems. Individuals may want to have their water tested for lead by an official lab. If the level is too high, they can investigate ways to deal with the problem or switch to bottled water for drinking and cooking. Even then, caution is called for: Some bottled waters contain many of the same contaminants that tap water does.

## UNIT 7. SOIL



### I. GLOSSARY

**Activity 1. Read and remember the following words, compose sentences of your own with them.**

1. arid climate (n) – засушливий клімат
2. barren (n) – пуста порода
3. crucial (adj) – основний, важливий
4. deplete (v) – виснажувати, вичерпувати
5. failure (n) – невдача
6. food chain (n) – харчовий ланцюг
7. horizon (n) – шар, відкладення шару
8. infest (v) – кишіти, роїтися
9. moisture (n) – волога
10. parent rock (n) – материнська порода
11. perennial (adj) – багаторічний; той, що триває цілий рік
12. protein (n) – білок
13. resurgence (n) – відродження
14. rot (v) – гнити, псуватися
15. solid waste disposal (n) – звалище сміття
16. subsoil (n) – підґрунт
17. thrive (v) – квітнути, процвітати, пишно рости
18. vulnerable (adj) – уразливий
19. weed (n) – бур'ян
20. yield (n) – збір врожаю  
yield (v) – давати врожай

## **II. VOCABULARY CHECK**

### **Activity 1. Give English equivalents of the following.**

1. фізичне (хімічне, біологічне) вивітрювання
2. коріння рослин
3. поглинати вологу
4. злакові культури
5. бобові культури
6. засолення ґрунту
7. підтримувати життя
8. руйнувати органічну матерію
9. важливі нітрати
10. нові іригаційні проекти

### **Activity 2. Give Ukrainian equivalents of the following.**

1. handful of soil
2. fertile soil
3. intensive farming techniques
4. to deplete the quantity
5. ecologically bankrupt
6. intensive farming
7. cash crop
8. subsistence farming
9. huge deluge
10. greenhouse effect

### **Activity 3. Match the following words with their explanations.**

humus	a process by which the biological productivity of the land is so reduced as to lead to the spread of desert like conditions in arid and semiarid regions
erosion	a brown or black amorphous mass of decayed organic material found in soils
desertification	the weathering down and removal of soil, rock fragments and bedrock through the action of rivers, glacier, sea and wind
salinisation	any material added to the soil to supply essential nutrients for crop growth
fertilizers	the accumulation of highly soluble sodium, magnesium and potassium salts in a soil
eutrophication	to lessen greatly in quality, contents, power or value
deplete	the process of nutrient enrichment of an aquatic system
decay	to give or provide (smth. needed or asked for)
supply	to lose power, health and go bad

### III. GRAMMAR REVIEW

#### ПРЯМА ТА НЕПРЯМА МОВА

Правило узгодження часів часто діє при перетворенні прямої мови у непряму, при цьому, якщо пряма мова є питальним реченням, то треба дотримуватися таких правил:

1) Якщо питання починається з допоміжного або модального дієслова (тобто загальне питання), то непряме питання додається до головного речення за допомогою сполучників *whether* або *if*, що мають значення частки *чи*. Питальний знак опускається, та питальний порядок слів у прямому питанні замінюється порядком слів оповідального речення, тобто присудок ставиться після підмета.

e. g. He asked her, "Do you want to see the new film?"

He asked her whether (if) she wanted to see the new film.

I asked him, " Will you go there?" I asked him whether he would go there.

2) Якщо питання починається з питального слова або групи слів, то при перетворенні його у непряме питання відбуваються такі зміни:

Питальний знак не вживається, та питальний порядок слів у прямому питанні також замінюється порядком слів розповідного речення. Питальне слово або група слів, що стоять на початку питання, служать для приєднання непрямого питання до головного речення.

e. g. He asked me, "Where do you live?" He asked me where I lived.

He asked me, "Where is John?" He asked me where John was.

#### Приклади висловлювань прямою і непрямою мовами

Пряма мова (Direct Speech)	Непряма мова ( Reported Speech)
Прямою мовою називається передача чийогось висловлювання.	Непрямою мовою називається передача змісту прямої мови у вигляді переказу.
She said to him "Come at 3 o'clock". He said to me "Don't go there".	She asked him to come at 3 o'clock. He told me not to go there.
He said:"I know the answer". He said to me, "I will do it tomorrow".	He said that he knew the answer. He told me that he would do it the next day.
She asked me,"Have you written the paper?" He asked me, "Where do you live?" this (these) now here today yesterday tomorrow ago next week	She asked me if (whether) I had written the paper. He asked me where I lived. that (those) then there that day the day before the next day before the following week

**Exercise 1.****Translate the following sentences**

Вони запитали мене

- |                                |                                   |
|--------------------------------|-----------------------------------|
| - які книги я люблю читати.    | - чи знаю я Пітера.               |
| - чия це книга.                | - чи був я у Києві.               |
| - з ким я піду у кіно.         | - чи розмовляю я англійською.     |
| - з ким я розмовляв про це.    | - скільки іноземних мов я знаю.   |
| - коли я востаннє бачив брата. | - коли він повернеться додому.    |
|                                | - які фільми він любить дивитися. |

**Exercise 2.****Translate the following sentences into Indirect Speech**

The girl said:

- |                            |                                      |
|----------------------------|--------------------------------------|
| - I am a student.          | - I study history at the University. |
| - My name is Linda.        | - I live with my parents.            |
| - I left school last year. | - I was in France last year.         |
| - I am nineteen.           | - I will be a historian.             |

**Exercise 3.****Fill in say, tell or ask in the correct form**

1. Please... me what you think of this problem.
2. He... that he couldn't reply to any of these questions.
3. He promised to ... no more about the matter.
4. She stopped to ...the time because she thought she was late.
5. He had taken an oath so he had to ...the truth in the court.
6. She couldn't ... for certain whether or not she would be staying.
7. "Could you help me with these bags?" she ...me.
8. My parrot can ...a few words in English.

**Exercise 4.****Turn the following sentences into reported speech.**

1. "I am visiting Greece", says the professor.
2. "I've never been to Paris before", says John.
3. "I don't speak Spanish", says Maria.
4. "My house is not far from the town centre", he says.
5. "Water boils at 100C°", he said.
6. "Australia is a big country", he said.
7. "If I see him, I'll invite him to the party", he said.
8. "I saw a really bad car accident yesterday", he said to me.
9. "If I were rich, I would buy a house in Beverly Hills", she said.
10. "I've been living here for five years", she said.

#### ***IV. PRE-TEXT DISCUSSION***

##### **Activity 1. Do you know that:**

- Soil is the result of the weathering of rocks.
- All living things are made of protein containing nitrogen.
- Intensive farming methods deplete the soil from nitrogen.
- The earth is losing 24 billion metric tons of topsoil every year through intensive farming methods.
- All soil contains some salt.
- Salt contained in soil is washed away when it rains.
- Evaporation from reservoirs and irrigation channels increases the salinity of the water.
- Fertilizers improve the quality of soil.
- Pesticides are absorbed by the crops.
- Pesticides often become concentrated on the food.

**Activity 2. Make up dialogues of your own, discussing the information given in the part “Do you know that”.**

#### ***V. READ AND TRANSLATE TEXT 7A***

##### **Text 7 A.**

##### **“Soil”**

We know that soil has been formed over thousands of years from the weathering of rock.

There are three types of weathering: physical weathering (where temperature changes cause the rock to expand and contract until it shatters into pieces), chemical weathering (where carbon dioxide and water form a weak acid that dissolves rocks such as limestone) and biological weathering (where the rock is broken down by the action of living things such as plant roots and bacteria). The composition of a typical soil is as follows: the top layer of the soil (topsoil) is rich in humus – a dark, fibrous material formed from decaying organic matter. Humus contains micronutrients such as nitrogen, minerals such as iron, and microorganisms that break down the organic matter. Humus absorbs moisture and binds the inorganic particles together. The quality (or fertility) of soil depends on the amount of humus in it – the organic content. Good quality topsoil is dark, moist and crumbly. The middle layer of the soil contains less organic material, but it is rich in minerals because these get washed down with the rain. The lower layer (subsoil) is made of inorganic material, similar to the parent rock which originally formed the soil. All living things are made of protein, which contains nitrogen. Without nitrogen, plants

and animals cannot grow, because they cannot build new tissue. Traditional farming methods rotate cereal crops (which remove nitrogen from the soil) with leguminous plants (which replace nitrogen). Intensive farming methods, where cereals are grown every year, tend to deplete the soil of nitrogen. Repeated cropping and overgrazing (that is, putting too many cattle on a small area of grassland) cause erosion of the top layers of the soil. The essential nitrates are removed with the topsoil so the nitrogen cycle, which is crucial to the balance of nature, is broken (box 5).



**The Painted Desert.** This landscape was created by the action of wind and moving water. The particles removed by these forces were deposited elsewhere and may have become part of the soil in that new location.

The earth is losing 24 billion metric tons of topsoil every year through intensive farming methods and deforestation. The end stage of this loss of topsoil is desertification, where all the organic and mineral content of the soil has disappeared, leaving only poor quality subsoil, which cannot support plant growth. About 20 million hectares of productive land become barren every year because of soil erosion. Thirty percent of the world's land surface is threatened with desertification. Another hazard of intensive farming is salinization, which is caused by perennial irrigation (that is, irrigation year after year without a break) in arid climates. All soil contains some salt, which is washed away when it rains. Where rainfall is minimal, the salt content of the soil is very high. Evaporation from reservoirs and irrigation channels increases the salinity of the water. When a new irrigation scheme raises the water table, salt from the soil dissolves in the water and rises to the surface. Unless the area is left fallow and unirrigated for a season so that the salty water can drain away, the land will become permanently salinized and unable to support plant life.

The quality of soil can be improved by adding fertilizers. But they cause environmental damage by a process called eutrophication. Excess nitrogen is washed out of the soil with the run-off after it rains. It passes into rivers and lakes, and encourages the growth of algae (seaweed) in the water and of wild plants on nearby land. Overgrowth of algae upsets the balance of nature in lakes and seas. Overcrowding on the banks causes the plants to rot and die. The air becomes contaminated with nitrous oxide which contributes to the greenhouse effect. Like nitrates, phosphates and potash are taken up by growing plants and returned to the soil in animal excreta. Artificial fertilizers add a few selected micronutrients, but because they cause rapid plant growth they deplete the soil of other nutrients. Plants grown in artificial fertilizers are often tasteless and have a low nutritional value. They may be contaminated with chemical residues from the fertilizer manufacturing process. For both environmental and health reasons, many consumers today prefer to buy organic vegetables – that is, vegetables grown, without any artificial fertilizers.

## **VI. COMPREHENSION CHECK**

### **Activity 1. Do the false/true activity**

1. Plants and animals need nitrogen for growth.
2. Too much nitrogen causes too much growth of seaweed and wild plants nearby.
3. Intensive farming doesn't increase crop yield.
4. Plants grown in artificial fertilizers are usually tasty.
5. Pesticides are not absorbed by crops and washed into the rivers and seas.
6. Salinization occurs when perennial irrigation is undertaken in arid climates.

**Activity 2. Look through text 7A carefully. Then complete the following to make suitable sentences according to the meaning of the text.**

1. The effect of repeated cropping and overgrazing on the soil is \_\_\_\_\_.
2. Good quality soil contains \_\_\_\_\_.
3. Desertification means that \_\_\_\_\_.
4. Organic fertilizers can be either \_\_\_\_\_.
5. Pesticides are chemicals which \_\_\_\_\_.
6. Although intensive farming increases crop yield, \_\_\_\_\_.
7. Salinization occurs when \_\_\_\_\_.
8. Plants and animals need nitrogen so that \_\_\_\_\_.
9. The amount of topsoil being lost every year because of deforestation and intensive farming \_\_\_\_\_.

## **VII. DISCUSSION**

**Activity 1. Define the logical parts of text 7 A entitling each of them.**

**Activity 2. Work in pairs. Ask and answer the questions on text 7A.**

**Activity 3. Translate in writing and reproduce.**

- What sort of environmental problems can threaten the well-being of the world population?
- We shouldn't forget that industrial pollution is only one part of a vast problem of the environmental hazards. Of great consequence is the polluted environment of areas where millions suffer from the effects of ignorance, poverty, lack of sanitary conditions, poor food and disease.
- Which of the agent of pollutants in those areas are most dangerous for man?
- First of all, I must mention lack of sanitary conditions. Especially in the developing countries where diseases, such as cholera, are transmitted from man to man by a polluted environment, polluted by human waste and unprotected water supply.
- So the most pressing problem is ignorance and lack of sanitary condition...
- Solid waste disposal in general is a serious problem. Refuse of all kinds help flies, mosquitoes, rodents and other disease agents to thrive, passing on illness to man.
- How many people are the victims of disease in developing countries?
- Millions fall victims to a wide variety of communicable diseases in places where the biological pollution from community waste is allowed to reach drinking water source and food.
- What kind of work is being carried on at present?
- The general problem of pollution is being vigorously attacked. Sanitation and sanitary education is being carried on among the population at large.

\*\*\*

- Що ти шукаєш у тлумачному словнику?
- Я шукаю значення слів „засолення” та „випаровування”. Я звичайно розумію, що це пов'язано зі словами „сіль”, „пара”, але мені треба знати, що означають ці терміни.
- У тебе є спеціальний екологічний тлумачний словник?
- Справа у тому, що спеціального словника у мене немає, а у загальному тлумачному словнику значення цих термінів не дають.
- На жаль, я нічим не можу тобі допомогти, звернись до свого викладача з екології.
- Так, це те, що мені доведеться зробити.

**Activity 4. Make up your own dialogues on the theme “Soil”.**

## ***VIII. SKIM TEXT 7B AND GET READY TO SPEAK ABOUT SOIL POLLUTION***

### **Text 7B**

**1. Read and translate the text. Divide the text into logical parts, entitle them and write the main idea of each of them.**

#### **Threats of soil contamination**

The Anthropocene era - the most recent period in Earth's history when human activity started to have a significant impact on the planet's climate and ecosystems - is characterized by massive global changes, including climate change, biodiversity loss, poverty, and food insecurity. The challenge for society is to adapt to and mitigate these changes while transforming our agri-food systems, making them more efficient, inclusive, resilient and sustainable, for better production, better nutrition, a better environment, and a better life, leaving no one behind. A transformative approach that is in line with the 2030 Agenda for Sustainable Development, which sets out to achieve socio-economic development, while conserving the environment.

The thin crust of the Earth's surface, the soil, supports all terrestrial life and is involved in the regulation and provision of many key ecosystem services that are essential to the environment and to human health and well-being. Soil is the foundation of the agri-food system and the medium in which nearly all food-producing crops grow - about 95 percent of the food we eat comes from the soil. After the oceans, soil is the largest active carbon store and one cubic metre of soil can store up to 600 litres of water, allowing crops to grow even during dry periods.

Biodiversity -above and below ground - is vital to ensuring healthy soils and the ecosystems upon which we depend. Soil biodiversity contributes to the cycling of nutrients and carbon, regulates the emergence of pests and diseases, and serves as a source of pharmaceuticals that contribute to boost our health. Soils also provide building materials, fuel and fibre. They are the basis for human infrastructure and preserve our cultural heritage.

However, global soils are under great pressure. The Status of the World's Soil Resources report presented in 2015 by the Food and Agriculture Organization of the United Nations (FAO) and the Intergovernmental Technical Panel on Soil (ITPS) identified ten major threats to the world's soils: Erosion, loss of soil organic carbon and biodiversity, pollution, acidification and sodification, salinization, nutrient imbalance, compaction, sealing and waterlogging are major pressures on soil health and limit their capacity to provide these key ecosystem services for human well-being.

Soil pollution, a chemical degradation process that consumes fertile soils, may be invisible to human eyes, but it compromises the food we eat, the water

we drink and the air we breathe. Most contaminants originate from human activities and are released into the environment because of unsuitable production, consumption and disposal practices, such as unsustainable farming practices, environmentally unfriendly industrial processes and mining, as well as poor waste management. Pollution knows no borders; contaminants move through soil, air and water and enter into agri-food systems, affecting the environment and human health.



Soil pollution has been internationally recognized as a major threat to soil health and its capacity to provide ecosystems services. The United Nations Environment Assembly, at its third session in December 2017, addressed the issue and made a global call for action through Resolution 3/6 Managing Soil Pollution to Achieve Sustainable Development. The Assembly also requested UNEP to collaborate with relevant Organizations and entities, including the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO), the United Nations Convention to Combat Desertification (UNCCD) to prepare a report on the extent and future trends of soil pollution.

**2. Look through the text and complete the following to make suitable sentences according to the meaning of the text.**

1. The most recent period in Earth's history is \_\_\_\_\_
2. People started to have a significant impact on the planet's climate and ecosystems
3. The Anthropocene era is characterized by \_\_\_\_\_
4. The challenge for society is \_\_\_\_\_
5. The soil, supports all terrestrial life and \_\_\_\_\_
6. About 95 percent of the food we eat \_\_\_\_\_
7. One cubic metre of soil can \_\_\_\_\_
8. Soil pollution is \_\_\_\_\_
9. Most contaminants originate from \_\_\_\_\_
10. \_\_\_\_\_ a major threat to soil health and....

**TEST-REVIEW VII****Task I. Total: 5**

*Choose the correct word to complete the sentences.*

1. The professor asked what fertilizers ... the quality of soil.  
A) improves                      C) improved  
B) had improved                D) improving
  
2. He asked if soil ... over thousands of years from the weathering of rock.  
A) had formed                    C) will be formed  
B) formed                        D) had been formed
  
3. The only thing you knew that the “Congress of Global warming ...  
somewhere in the centre next month.  
A) is being held                C) had been held  
B) would held                 D) would be held
  
4. He was interested how the quality of soil ... increased.  
A) have to be                    C) could be  
B) would be                      D) was to be
  
5. I asked “ How long ... it take you to get there by car?”  
A) does                            C) was  
B) will                             D) did

**Task II. Total 5**

*Give English or Ukrainian equivalents of the following.*

1. шукати нафту
2. на душу населення
3. широке використання
4. поживний
5. підтримувати життя
6. to deplete quality
7. subsistence farming
8. Ви дійдете туди пішки.
9. Університет, який Ви шукаєте, знаходиться тут.
10. Їм знадобився рік, щоб навчитися грати в теніс.
11. soil contains
12. добра якість
13. ecologically bankrupt
14. huge deluge

15. руйнувати органічну матерію
16. злакові культури
17. коріння рослин
18. кишіти, роїтися
19. білок
20. злива, потік

### Task III. Total 5

*Turn the following into indirect questions.*

1. Composition of soil in different parts of Ukraine is different. (I wanted to know).
2. A well-developed soil can support a healthy cover of vegetation. (The professor asked when).
3. Pedologists are scientists studying the soil. (We wanted to know if).
4. It took them two years to learn to speak English. (I asked).
5. The lowest layer resembles the parent material. (He asked what).

### Task IV. Total 10

*Translate from Ukrainian into Russian.*

1. Вони запитали: „Чи всі проблеми, пов’язані з нашою участю у програмі вже вирішені?”
2. Викладач запитав: „Які з парникових газів найменш шкідливі?”
3. „Я можу попросити Вас не галасувати так сильно?” – запитала вона.
4. Він цікавиться: „Котра година?”
5. Викладач пояснив нам: „Ви повинні регулярно працювати над собою”.

### Task V. Total 5

*Give three forms of the following irregular verbs.*

1. бачити
2. плавати
3. бігти
4. мріяти
5. зберігати
6. ушкодити
7. в’язати
8. закривати
9. сваритися
10. мати справу

**Task VI. Total 5**

*Open the brackets, using the correct form of the verb.*

1. Roots (to found) in both A and B horizons.
2. The red color of a soil (to indicate) the presence of iron compound in it.
3. Soil (to be formed) thanks to the decay of the rock.
4. Soil (to be) formed and destroyed constantly.
5. Most soils (to include) three major horizons.

**Task VII. Total 5**

*Compose sentences with the following words.*

1. soil, particles, organic, and, contains, mineral.
2. pedologists, scientists, soil, called, are, studying.
3. of, kinds, are, there, many, soils.
4. walk, ahead, lights, until, traffic, the, straight.
5. far, from, street, Bond, here, is,?

## UNIT 8. FORMATION OF SOIL

### I. GLOSSARY

**Activity 1. Read and remember the following words, compose sentences of your own with them.**

1. beneath (adv) – знизу
2. cereal (n) – злакові культури
3. decay (v) – гнити, розкладатися
4. disease agent (n) – той, що розносить хвороби
5. fertilizers (n) – добрива
6. humus (n) – чорнозем, перегній
7. livestock (n) – худоба, поголів'я худоби
8. overgrazing (adj) – надмірний випас худоби
9. pedologist (n) – ґрунтознавець
10. perennial irrigation (n) – багаторічне зрошення
11. residue (n) – осад
12. rodent (n) – гризун
13. sustain (v) – підтримувати, підпирати
14. topsoil (n) – верхній шар ґрунту
15. water table (n) – дзеркало ґрунтових вод
16. weather (v) – вивітрювати

### II. VOCABULARY CHECK

**Activity 1. Give English equivalents of the following.**

1. поживний
2. рослинний білок
3. середня кількість опадів
4. багаторічне зрошення
5. гризуни рослин
6. верхній шар ґрунту
7. випас худоби
8. злива
9. дзеркало ґрунтових вод

**Activity 2. Give Ukrainian equivalents of the following.**

1. amorphous mass
2. decay of organic material
3. weathering of soil
4. rock fragments
5. action of seas and winds
6. crop growth
7. essential nutrients
8. soil formation
9. land surface features
10. mineral portions of soil

**III. GRAMMAR REVIEW**

**Пряма і непряма мова (Direct and Indirect Speech)**

**Способи передачі непрямой мови**

Типи речень	Пряма мова	Непряма мова
стверджувальне	He says, "I am happy". He says to us "I like football". She says, "I don't know this rule".	He says (that) he is happy. He says to us (that) he likes football. She says (that) she doesn't know this rule.
наказове	She says, "Close the window, please". Mary says to Mike, "Don't close the door". The officer orders the soldiers, "Don't talk!"	She asks me to close the window. Mary tells Mike not to close the door. The officer orders the soldiers not to talk.
Загальне питання	The tourist asks me, "Do you know the city well?" He asks, "Is it raining?" The manager asks, "Are there any people at the office?"	The tourist asks me if I know the city well. He asks if it is raining now. The manager asks if there are any people at the office.
Спеціальне питання	I ask them, "Where does John live?" They ask, "What's the matter?" We ask them, "When shall we meet?" My friend asks, "Who called you yesterday?"	I ask them where John lives. They ask what the matter is. We ask them when we shall meet. My friend asks who called me yesterday.

### Дієслова, що вводять непряму мову

add	додавати	offer	пропонувати
advise	радити	promise	обіцяти
allow	дозволяти	protest	протестувати
describe	описувати	remark	зауважувати
explain	пояснювати	reply	відповідати
complain	скаржитися	remind	нагадувати
continue	продовжувати	recommend	рекомендувати
inform	повідомляти	refuse	відмовляти
insist	наполягати	suggest	пропонувати
note	помічати	think	думати
observe	спостерігати	warn	попереджувати
order	наказувати	wonder	цікавитися

#### Exercise 1.

**Turn the following sentences into Indirect Questions. Omit question marks where necessary.**

1. Where did I leave my glasses? (I wonder...)
2. Is he planning to call a meeting? (Did you know...)
3. Have they ever been abroad? (Do you know...)
4. When are you leaving? (I want to know...)
5. Who left that message on our answerphone/ (She wondered...)

#### Exercise 2.

**Turn the following into Direct Speech.**

Mr. Brown said good morning to everyone and thanked them all for coming. He said that he expected that they were all wondering why he had called the meeting, and promised that he wouldn't keep them in suspense much longer. He explained that a large multinational company had offered to buy the factory for \$10 million and he went on to invite people to give their views on whether or not they should sell. He warned them that it was a very important decision they had to make and urged them to think about the matter very carefully as everyone's future could depend on it.

#### Exercise 3.

**Translate into English.**

1. Вона каже, що її мати працює в школі.
2. Вона сказала, що її мати працює в школі.
3. Він запитав мене, де я купив цю книгу.

4. Він сказав, що влітку поїде до моря.
5. Я думав, що ти зайнятий.
6. Ми знали, що він вдома.
7. Він пояснив, як став мільйонером.
8. “Я можу допомогти тобі написати реферат”, сказав він після уроків.
9. “Ну, добре. Я зробив помилку. Тепер жалію. Вибачте.”- сказав наш однокласник.
10. Вони хотіли знати, чи ми маємо якусь інформацію, яка б допомогла їм скоротити витрати на екологію.

#### ***IV PRE-TEXT DISCUSSION***

##### **Activity 1. Do you know that:**

- Different soil types can be classified into two broad categories.
- Soils formed in grasslands are known as chernozem soil.
- Soils formed in forests are known as podzol soils.
- Soils are constantly being formed and destroyed.
- Soil is formed slowly and destroyed easily.

**Activity 2. Make up dialogues of your own, discussing the information given in the part “Do you know that”.**

##### **Activity 3. Give your opinion on the following**

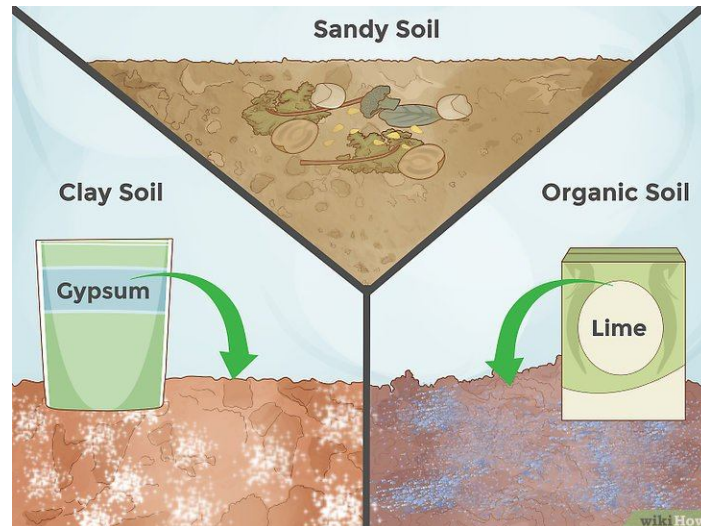
1. The essential nitrates are removed with the topsoil.
2. A handful of soil looks inert and uninteresting.
3. Livestock in the tropics is heavily infested with parasites.

#### ***V. READ AND TRANSLATE TEXT 8A***

##### **Text 8 A.**

##### **How soil is formed**

Soil is an important natural resource that covers much of the earth's land surface. Most life on earth depends upon the soil as a direct or indirect source of food. Plants are rooted in the soil and obtain nutrients (nourishing substances) from it. Animals get nutrients from plants or from animals that eat plants. Certain microbes in the soil cause dead organisms to decay, which helps return nutrients to the soil. In addition, many kinds of animals find shelter in the soil.



Soil contains mineral and organic particles, other plant and animal matter, air and water. The contents of soil change constantly. There are many kinds of soils and each has certain characteristics, including color and composition. The kind of soil in an area helps determine how well crops grow there. Soil forms slowly and is destroyed easily, it must be conserved so it can continue to support life.

Soil scientists, called pedologists, use the term “polypedons” for the bodies of individual kinds of soil in a geographic area. Polypedons can be indefinitely large but some have a surface area of only about 10.8 square feet (1 square meter). Some polypedons measure less than 5 inches (13 centimeters) deep. Others are more than 4 feet (1.2 meters) deep.

Soil begins to form when environmental forces break down rocks and similar materials that lie on or near the earth's surface. Pedologists call the resulting matter parent material. As soil develops through the centuries, organic material collects, and the soil resembles the parent material less and less. Glaciers, rivers, wind, and other environmental forces may move parent material and soil from one area to another.

Soils are constantly being formed and destroyed. Some processes, such as wind and water erosion, may quickly destroy soils that took thousands of years to form.

Soil formation differs according to the effects of various environmental factors. These factors include (1) kinds of parent material, (2) climate, (3) land surface features, (4) plants and animals, and (5) time.

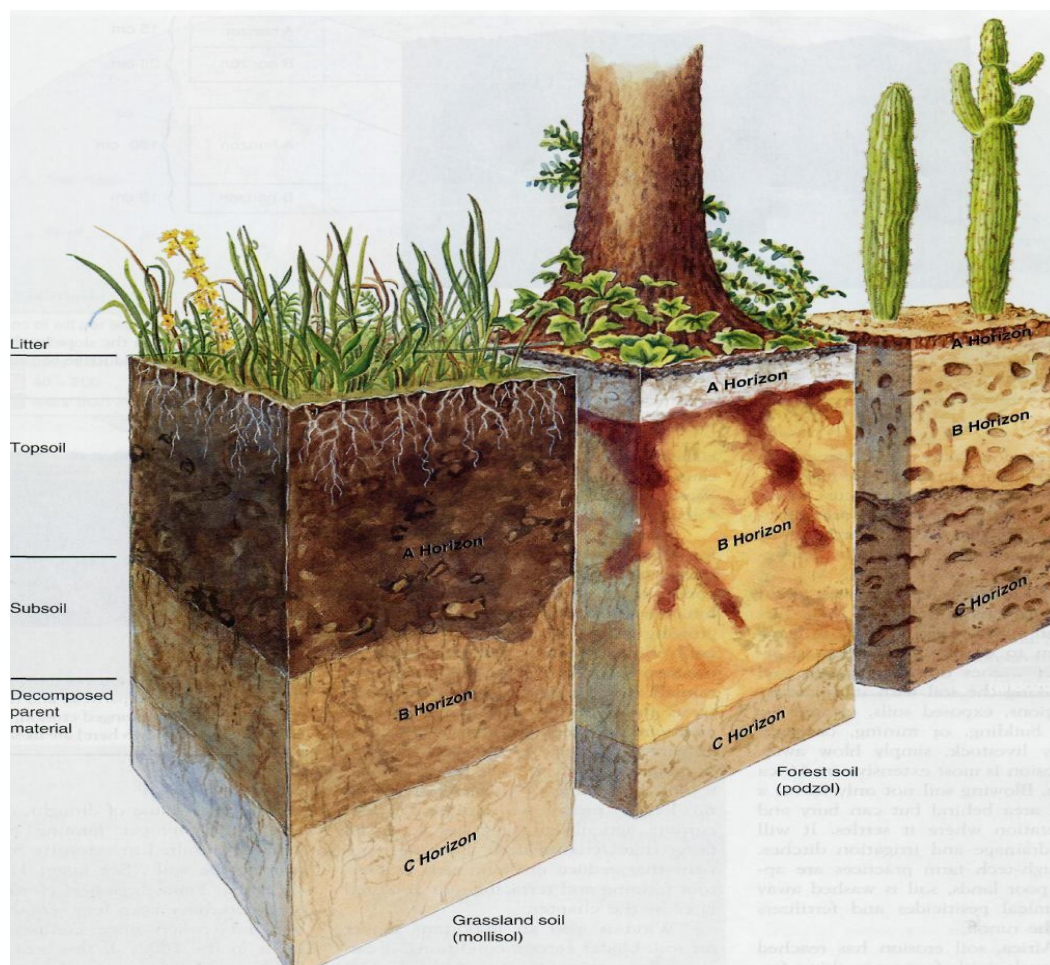
### **Characteristics of soils**

The method and rate of soil formation differs throughout a body of soil. As a result, the soil develops layers. These layers are called soil horizons. Soil horizons may be thick or thin, and they may resemble or differ from the surrounding horizons. The boundaries between the layers can be distinct or barely noticeable.

Most soils include three major horizons. The upper two, called the *A* and *B* horizons, are the most highly developed layers. The *A* horizon is also known as topsoil. The lowest horizon, called the *C* horizon or the subsoil, is exposed to little weathering. Its composition resembles that of the parent material. Pedologists describe soils by the characteristics of the soil horizons, including (1) color, (2) texture, (3) structure, and (4) chemical conditions.

**Color.** Soils range in color from yellow and red to dark brown and black. The color of soil helps pedologists estimate the amounts of air, water, organic matter, and certain elements in the soil. For example, a red color may indicate that iron compounds are present in the soil.

**Texture** of a soil depends on the size of its mineral particles. Sands are the largest particles. The individual grains can be seen and felt. Silts are just large enough to be seen, and clays are microscopic. Pedologists divide soils into textural classes according to the amounts of sand, silt, and clay in a soil. For example, the mineral portions of soils classified as loam contain from 7 to 27 per cent clay and less than 52 per cent sand. In silty clay, more than 40 per cent of the mineral particles are clay, and more than 40 per cent are silt. Texture helps determine how thoroughly water drains from a soil. Sands promote drainage better than clays.



**Major Soil Types** There are thousands of different soil types, but many of them can be classified into two broad categories. Soils formed in grasslands are known as chernozem soils and have a deep A horizon. The shallow B horizon does not have sufficient nutrients to support root growth. In forest soils, known as podzol soils, the A horizon is thinner, and leaching results in many nutrients in the B horizon. Thus, roots are found in both the A and B horizons.

## ***VI. COMPREHENSION CHECK***

### **Activity 1. Do the false/true activity**

1. Soils range in colors.
2. Red color of soil indicates presence of iron compounds.
3. The methods of soil formation don't differ.
4. Soils form quickly and endlessly.
5. Sands promote drainage better than clays.
6. Most soils include six horizons.
7. Wind and water quickly destroy soils.
8. Animals get nutrients from plants but not from animals that eat plants.
9. Various environmental factors influence on soil formation.
10. Soil horizons characterize soil.

**Activity 2. Look through text 8 carefully. Then complete the following to make suitable sentences according to the meaning of the text.**

1. A and B horizons are the most \_\_\_\_\_.
2. Pedologists describe soil by the characteristics of \_\_\_\_\_.
3. The mineral portions of soils are classified as \_\_\_\_\_.
4. Soil formation depends on \_\_\_\_\_.
5. Soil formation differs according to \_\_\_\_\_.
6. The kind of soil helps determine \_\_\_\_\_.
7. Soil scientists are called \_\_\_\_\_.
8. Soil microbes cause dead organisms to \_\_\_\_\_.
9. Many animals find shelter \_\_\_\_\_.
10. Soil is a direct or indirect \_\_\_\_\_.

## ***VII. DISCUSSION***

**Activity 1. Define the logical parts of text 8 entitling each of them.**

**Activity 2. Work in pairs. Ask and answer the questions on text 8.**

**Activity 3. Translate in writing and reproduce.**

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- Вибачте, можете мені пояснити значення термінів „засолення” та „випаровування”?
- Звичайно, я зроблю це із задоволенням. Земля втрачає 24 мільярди метричних тонн верхнього шару щорічно через інтенсивні методи землеробства. ”Засолення” – це накопичення розчинних солей в ґрунті або на його поверхні. „Випаровування” – це процес поглинання енергії, в результаті якого рідина змінює свій стан і стає газом.
- А що таке метрична тонна, чому вона дорівнює?
- Метрична тонна дорівнює 1016 кг.
- Дякую. Ви мені дуже допомогли.

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- Що ти знаєш про інтенсивне землеробство?
- Небагато. Я чула, що інтенсивні методи землеробства значно підвищують врожайність.
- Вони підвищують врожайність у всіх місцях?
- Наскільки мені відомо – ні. Вони дуже успішні в районах з помірним кліматом (temperate zones) та негативні в районах з тропічним кліматом.
- А чому?
- На це є кілька причин. Ну, перш за все в країнах з тропічним кліматом зазвичай виснажений (неродючий) ґрунт. Тропічна жара вбиває мікроорганізми, що зменшує здатність всмоктувати воду, і це призводить до подальших проблем.
- До яких саме?
- Пестициди, які широко застосовуються при інтенсивному землеробстві, дуже добре почувуються в жарі, їх стає багато, і це призводить до загибелі врожаю.
- Дякую. Тепер, коли ти пояснила, мені зрозуміло.

**Activity 4. Make up your own dialogues on the theme “Soil formation”.**

## ***VIII. SKIM TEXT 8B AND GET READY TO SPEAK ABOUT PROTECTION AND USE OF FOREST RESOURCES***

### **PROTECTION AND USE OF FOREST RESOURCES**

Wood is a part of the diverse flora and is of special value. It is a natural complex, which consists of woody plants of one aqueous or several species that form a relatively closed wood area, as well as many other organisms, together with soils, surface waters and the adjacent layer of the atmosphere. Wood is a natural system consisting of interacting and interdependent components

characterized by a dynamic balance, stability, great ability to restore a special balance of energy and materials, dynamic processes with tendencies to their stability, geographic conditionality.

One of the most important functions of forest is producing organic matter. Wood affects all components of the biosphere and plays a huge role in environmental formation.

Wood is used in various sectors of economy, serves material for dozens of valuable products vital to humans.



In the distant past, forests covered a great part of our planet. Our ancestors seized forest areas for agriculture. Gradually civilization's need for wood increased, and its use became diverse.

Among European countries, Finland has most forest cover of 70% of its territory. UK is the poorest forest country, having less than 6% of the territory covered by forests. The largest forest is Russia, which owns 1/5 of the area covered by forests in the world.

Our country belongs to the countries of Europe with shortages of forests. Forest stock in Ukraine is about 11 million hectares, 9.4 million hectares of which are covered with forest vegetation. Forestation covers 15.6% of the country. The total stock of wood pulp in the forests of Ukraine is 1736.0 million m<sup>3</sup>.



Woods of Ukraine fulfill important ecological functions such as water conservation, protection, recreation.

Overall state of forests does not meet environmental and economic requirements.

As a result of Chernobyl catastrophe, forests have accumulated considerable portion of radioactive emissions. Performing protective functions in nature, forest plantations of Ukraine Polissia areas considerably defended settlements and agricultural lands in the region from radioactive contamination, preventing them from transference of radioactive dust and aerosols to non-forest land. That is why forests were more contaminated than other types of landscapes.

Consequently, on the one hand, Ukraine can not meet its own needs in the wood, the deficit is about 30 million m<sup>3</sup>, and on the other hand, forest as the main component of the biosphere, is unable to maintain ecological balance at full length.

Substantial anthropogenic impact on forests leads to their weakening and drying. Today, the degree of forest drying reaches 200 thousand hectares of plantations. Major forests - forming species of Ukraine, such as pine, oak and elm trees in the south, Crimean pine in the mountainous Crimean area, spruce in the Carpathians suffer most of all. They also suffer from increasing fires, intensive cutting down, poor recreation use, discrepancy of biological peculiarities of species to habitat conditions, diseases, damage by environmental, technogene pollution (industrial emissions). Planting of trees that do not meet certain environmental conditions is especially harmful.

Protective afforestation as an important factor of ecological stability also falls into decay that causes the intensification of erosion processes. To achieve optimal forest lands it is necessary to increase the area of forests almost all over the country.

To avoid the loss of forest areas, forestation should increase by 2 times with the help of afforestation of not less than 4 million hectares of land and non-generous areas.

**1. Answer the questions on the text.**

- a. What are forest resources of Ukraine?
- b. What is the state and use of forest resources of Ukraine?
- c. Where are the largest forests in Europe?
- d. How can we protect our forests?
- e. Is afforestation the only way to save species of plants and animals?

**2. Divide the text into logical parts and entitle each of them.**

**3. Write a short abstract on the text.**

## ***SUMMARY WRITING***

**Activity 1. Rearrange and write the following sentences in a paragraph that summarizes the text.**

1. A well-developed soil can support a healthy cover of vegetation.
2. Pedologists are scientists studying the soil.
3. Soil formation differs according to the environmental factors effects.
4. Soil is an important natural resource that covers much of the earth's surface.
5. Soil is formed thanks to the decay of the rock.
6. The term "polypedous" is used for the bodies of individual kinds of soil in different geographical regions.
7. The color of a soil helps to estimate the amount of air, water, organic matter.
8. The red color of a soil indicates the presence of iron compound in it.
9. The lowest layer resembles the parent material.

**Activity 2. Translate into English using the dictionary.**

Природно-ресурсною базою розвитку сільського та лісового господарства є земля – найбільш цінне і незамінне багатство країни.

Ґрунтом називаються видозмінені під впливом живих організмів, перш за все – зелених рослин, поверхневі шари земної кори, котрі відрізняються від гірських порід складом мінеральної маси, значним вмістом специфічних органічних речовин (гумусу) і мають важливу відмінність – родючість, тобто здатність постачати рослинам необхідні для їх росту поживні речовини, воду і повітря. Ґрунти є одночасно і результатом життєдіяльності зелених рослин, і умовою їхнього існування. В Україні налічується багато різновидів ґрунтів, які відрізняються між собою мінералогічним складом, вмістом гумусу та поживних елементів, фізичними та хімічними властивостями.

Шкідливий антропогенний вплив, а також розгул стихій, природних та посилених людиною, завдають ґрунтам величезної, інколи непоправної шкоди. Це, насамперед, водна і вітрова ерозія, погіршення ґрунтової структури, механічне руйнування та ущільнення ґрунту, постійне збіднення на гумус та поживні речовини, забруднення ґрунту мінеральними добривами, отрутохімікатами, мастилами та паливом, перезволоження та засоленість земель.

## ***IX. LONG-TERM PROJECT WORK***

**Prepare projects on the following topics.**

1. Composition of soils in different parts of Ukraine and its influence on vegetation.

2. Soil conservation problem in Europe and Ukraine.
3. Soil pollution by radiation (The influence of Chernobyl tragedy on soil pollution and its future).

## ***X. SPOKEN ENGLISH (EVERY DAY ENGLISH)***

Дуже важливо уміти показати дорогу тій чи іншій людині, якщо вона не знає вашого міста. Якщо Ви приїхали у незнайому країну або місто, у Вас неодмінно виникнуть такі питання: „Як добратися до...?“, „Як пройти до...?“ тощо. Тому тема “Asking the way”, можна сказати,- одна з найважливіших.

Перш за все Вам слід запам'ятати три моделі:

How can I get to...?	Як пройти до...?
How long does it take me to get to...?	Скільки треба часу, щоб добратися до...?
It takes you...	Вам знадобиться...
А все інше залежить від того „Куди?“ та знання граматичних часів.	
It takes me	Мені треба
It took me	Мені знадобилось
It will take me	Мені знадобиться

### **1. Speech patterns.**

#### **How can I get to.... Asking the way.**

It takes me an hour to get there	Мені потрібна година, щоб добратися туди.
It took them two years to learn to play tennis	Їм знадобився рік, щоб навчитися грати в теніс.
It will take you a quarter of an hour to report	Вам знадобиться 15 хвилин, щоб зробити доповідь.
How long does it take us to get there by car?	Скільки нам потрібно часу, щоб добратися туди на машині?
How long will it take our tourists to do shopping?	Скільки часу знадобиться нашим туристам, щоб зробити покупки?
How long did it take Alex to write the module test?	Скільки часу знадобилося Алексу, щоб написати модульний тест?
How can I get to the nearest bank?	Як добратися до найближчого банку?
How do I get to the underground station “Peremoha”?	Як добратися до станції «Перемога»?

How can we go to the Arts Museum?	Як пройти до Музею Мистецтв?
You have been most helpful.	Ви мені дуже допомогли.
You have been most polite.	Ви дуже люб'язні.
You have been most kind.	Ви дуже добрі.
The bus stop is over there.	Зупинка автобуса там.
The supermarket is not far from there.	Супермаркет недалеко звідси.
The State library is near by.	Державна бібліотека поблизу.
The University you are looking for is near here.	Університет, що ви шукаєте, знаходиться тут.
The parking lot is opposite the hotel I stay at.	Паркування навпроти готелю, у якому я зупинився.
The Underground station is within 5 minutes walk.	Метро в 5 хвилини ходьби.
The bank is next to the drugstore.	Банк поруч з аптекою.
The nearest post-office is round the corner.	Найближча пошта за рогом.
I go there <b>by</b> bus.	Я їду туди автобусом .
You can go there <b>by</b> local train.	Ви можете доїхати туди електричкою.
He gets there <b>by</b> Metro.	Він добирається туди на метро.
You can reach this place <b>by</b> air.	Ви можете добратися до цього місця літаком.
You can go there <b>on</b> foot.	Ви дійдете туди пішки.

Excuse me. How can (do) I get to... To go by bus (trolley-bus, air, water...)  
 To go on foot. To walk. To get in (off) a bus (trolley-bus). Over there, over here.  
 Near there, near here. The traffic light. To cross. To pass. Nearby.

Is there a bus to the center?	До центру іде автобус?
Is there a tram stop nearby?	Тут поблизу є зупинка трамваю?
Is there a gas station near here?	Чи є тут заправка?

## 2. Dialogues to be remembered

\*\*\*

- Excuse me. I want to see Mr. Carl Holder.
- Mr. Holder's office is on the 11<sup>th</sup> floor. Take the lift, please
- Thank you, very much. You have been most helpful!
- It's my duty to help you.

\*\*\*

- Is Broad Street far from here?
- Turn left, there you'll see a parking lot. Take the second turning on your right and you are in Broad Street.
- Thanks a lot.

\*\*\*

- Is this the right way to Poltava ?
- I'm afraid not. You should drive in the opposite direction.
- How long will it take us to come to Poltava ?
- At speed of 90 km/hour it will take you around 7 hours.
- Oh, no!
- I am sorry.

\*\*\*

- Excuse me. Where is the nearest drugstore?
- Look here, go down this street two blocks straight ahead and you'll see the drugstore which is the nearest from here as far as I know.
- Thanks a lot.
- Don't mention it.

\*\*\*

- Hi! Glad to see you!
- Hi! I heard you had moved to a new apartment.
- Yes. And I am very happy and I'd like to invite you to my housewarming party. Will you come?
- I will. But...
- What but?
- But I don't know how to get to your place.
- Look. Walk straight ahead until the traffic lights, then pass the road and turn left, one block down that street and you'll find yourself at my place. By the way, here is my visiting card with my phone numbers. Just in case!
- Thank you ever so much. I'll call you up and you'll tell me the day and time of your housewarming party.
- Bye!
- See you!

### 3. Translate in writing

\*\*\*

- Вибачте мені. Я вперше у Вашому місті. Як я можу добратися до ХНУ?
- Ви майбутній студент?
- Так. Я збираюся подати документи у цей університет.
- Який збіг! Я там навчаюся на медичному факультеті.

- Дивіться. Йдіть вниз по цій вулиці до майдану. Ви побачите його праворуч. Це третій за розміром майдан в Європі. Йдіть по цьому майдану угору. Йти треба прямо, нікуди не повертаючи. Праворуч від Вас буде готель „Харків”, ліворуч ви побачите сквер, а потім дуже гарну споруду – це і є ХНУ ім. В.Н.Каразіна. Доречі, біля університету ліворуч ви побачите пам'ятник засновнику – В.Н. Каразину.
- Дуже дякую. Ви мені дуже допомогли.
- Прошу. Бажаю Вам вступити до університету!

#### 4. Situation for spontaneous projects.

1. You are invited to the publishing house of the newspaper “The Digest”, as the winner of their project “Let's defend the future generations”. You have never been to this office. You should go there, and then you find out that you have lost the paper with the address and telephone number.
2. A friend of yours has bought a new apartment and invites you to a housewarming party. But he lives in another city and explains how to go to this city and to find the house he lives in.
3. You have come to London to participate in the “Congress on Global Warming”. It's your first visit to London, but you are at a loss because nobody meets you at the airport. The only thing you know that the Congress is to be held somewhere in the centre. Ask the way.

### TEST-REVIEW VIII

#### Task I. Total: 5

*Choose the correct word to complete the sentences.*

1. The professor underlined that soil ... the result of the weathering of rocks.

- |        |             |
|--------|-------------|
| A) is  | C) will     |
| B) was | D) had been |

2. He knew that all living things ... of protein containing hydrogen.

- |                 |              |
|-----------------|--------------|
| A) will be made | C) were made |
| B) is made      | D) was made  |

3. She said that salt contained in soil ... away when it rained.

- |               |                   |
|---------------|-------------------|
| A) was washed | C) are washed     |
| B) is being   | D) will be washed |
- washed

4. They excused themselves and said they ... to see our ecology experiment.

- |           |               |
|-----------|---------------|
| A) want   | C) would want |
| B) wanted | D) are wanted |

5. She asked where the nearest drugstore ....

- A) is                                    C) are  
B) will                                 D) was

### Task II. Total 10

*Give English or Ukrainian equivalents of the following.*

1. Поглинати вологу
2. Злакові культури
3. Засолення ґрунту
4. Handful of soil
5. Huge deluge
6. Greenhouse effect
7. Нові іригаційні проекти
8. Бобові культури
9. Надмірний випас худоби
10. Харчовий ланцюг
11. Збір врожаю
12. Скільки Вам потрібно часу?
13. Ви дуже люб'язні.
14. Банк за аптекою.
15. Чи є тут заправка?
16. Він добирається туди на метро.
17. Зупинка автобуса там.
18. Мені потрібна година.
19. Методи утворення ґрунту
20. Ґрунт різниться за кольором

### Task III. Total 5

*Turn the following into indirect questions.*

1. The quality of soil can be improved by adding fertilizers. (He was interested)
2. Soil has been formed over thousands of years from the weathering of rock. (He asked when ...).
3. Fertilizers improve the quality of soil. (The professor asked what ...).
4. I heard you had moved to a new apartment. (I wanted to know).
5. How long does it take you to get there by car. (I asked).

### Task IV. Total 5

*Translate from Ukrainian into English*

1. „Вибачте, де інститут екологічних проблем?” - запитала вона.
2. “Де я можу записатися на курси англійської мови? - запитала вона, після того як він здав екзамен на В2.

3. Він запитав: “Від чого залежить структура ґрунту?”.
4. Моя подруга запитала: “ У тебе є екологічний словник?”.
5. Вона запитала: “Що ти знаєш про інтенсивне землеробство?”.

**Task V. Total 5**

*Give three forms of the following irregular verbs.*

1. їхати (залишати)
2. знати
3. тримати
4. рости
5. давати
6. сваритися
7. мести (замітати)
8. порвати
9. мати справу
10. тримати пари

**Task VI. Total 5**

*Put the verbs in brackets in the correct form.*

1. Soil (to contain) mineral and organic particles.
2. Scientists studying soil (to be called) pedologists.
3. Soil (to be) constantly being formed and destroyed.
4. Soil formation (to depend) on several factors that (to act) together.
5. There (to be many) kinds of soils.

**Task VII. Total 5**

*Compose sentences with the following words.*

1. Black, brown, dark, and, to, yellow, from, in, color, range, soils.
2. 5, is, within, the, station, minutes, underground, walk.
3. How, it, long, will, to, do, our, tourists, shopping, take.
4. Horizons, layers, these, called, are.
5. Clays, better, than, promote, sands, drainage.

## ADDITIONAL READING

### TEXT 1

**1. What do you know about the causes of air pollution? Choose the best answers.**

1. There are few /many sources of air pollution.
2. Polluted air harms /has no effect on our health.
3. The most toxic are lead/zink.
4. Paints/cements are the source of lead.
5. Toxic chemicals are released into the atmosphere/ground.

**2. Find the following words in the text.**

1. a substance that pollutes something, especially water or the atmosphere;
2. the health, happiness, and fortunes of a person or group;
3. an adjective meaning a substance which is dangerous to health, environment;
4. a noun meaning destruction;
5. a noun meaning *proof*;
6. an adjective meaning *negative*;
7. transported by air;
8. the process of wearing or being worn by long exposure to the atmosphere.

**3. Read the text, define the key words and write abstracts both in English, and Ukrainian.**

### OTHER SIGNIFICANT OUTDOOR AND INDOOR AIR POLLUTANTS

In recent years, two other air pollutants have been recognized as significantly affecting the health and welfare of people: lead and toxic chemicals. The primary sources of lead are gasoline and paint. For many years lead was added to gasoline to help engines run more effectively. Recognition that lead emissions were hazardous resulted in the lead additives being removed from gasoline in North America and Europe. This has resulted in a decline in the amount of lead in the atmosphere. However, most other countries in the world still use leaded gasoline.

Another major source of lead is paints. Many older homes have paints that contain lead, since various lead compounds are colorful pigments. Dust from flaking paint or remodeling or demolition is released into the atmosphere. Although the amount of lead may be small, its presence in the home can result in significant exposure to inhabitants, particularly young children who chew on painted surfaces and often eat paint chips.

Air toxics are harmful chemicals that are released into the atmosphere on purpose or are released accidentally as a result of leaks or poorly designed manufacturing processes. Materials such as pesticides are purposely released to kill insects or other pests. However, the majority of air toxics are released as a result of manufacturing processes. Although air toxics are important to the entire public, they are most critical for people who are exposed on the job since they are likely to be exposed often and to higher concentrations. There are literally hundreds of different air toxics.

### **Indoor Air Pollution**

A growing body of scientific evidence indicates that the air within homes and other buildings can be more seriously polluted than outdoor air in even the largest and most industrialized cities. Many indoor air pollutants and pollutant sources are thought to have an adverse effect on human health. These pollutants include asbestos; formaldehyde, which is associated with many consumer products, including certain wood products and aerosols; airborne pesticide residues; chloroform; perchloroethylene (associated particularly with dry cleaning); paradichlorobenzene (from mothballs and air fresheners); and many disease-causing microorganisms. Smoking is the most important air pollutant source in the United States in terms of human health. The Surgeon General estimates that 350,000 people in this country die each year from emphysema, heart attacks, strokes, lung cancer, or other diseases caused by tobacco smoking. Banning smoking probably would save more lives than would any other pollution-control measure.

A recent contributing factor to the concern about indoor air pollution is the weathering of buildings to reduce heat loss and save on fuel costs. In most older homes, there is a complete exchange of air every hour. This means that fresh air leaks in around doors and windows and through cracks and holes in the building. In a weatherized home, a complete air exchange may occur only once every five hours. Such a home is more energy efficient, but it also tends to trap air pollutants.

Even though we spend almost 90 percent of our time indoors, the movements to reduce indoor air pollution lag behind regulations governing outdoor air pollution. In the United States, the Environmental Protection Agency is conducting research to identify and rank the human health risks that result from exposure to individual indoor pollutants or mixtures of multiple indoor pollutants.

## SUMMARY WRITING

**Activity 1. Rearrange and write the following sentences in a paragraph that summarizes the text.**

1. Many indoor air pollutants have an adverse effect on human life.
2. In a weathered home a complete air exchange may occur once every five hours.
3. The primary sources of lead are gasoline and paint.
4. Smoking is the most important air pollutant source in the US in term of human health.
5. Air toxics are harmful chemicals released into atmosphere on purpose.
6. Majority of air toxics are released as a result of vehicle' emission.
7. The movements to reduce indoor air pollution lag behind regulations governing outdoor air pollution.
8. Pesticides are purposely released to kill insects or other pets.
9. One of the major sources of lead is paints.
10. There are hundreds of different air toxics.

### Key language

**Match the words in the left-hand column with those in the right-hand column to make expressions from the text.**

- |                   |                     |
|-------------------|---------------------|
| 1. air            | a. emissions        |
| 2. toxic          | b. effect           |
| 3. run            | c. factor           |
| 4. lead           | d. cities           |
| 5. industrialized | e. pollutants       |
| 6. adverse        | f. chemicals        |
| 7. contributing   | g. exchange         |
| 8. air            | h. more effectively |

## TEXT 2

**1. What do you know about global warming? Choose the best answers.**

- a. It is a natural phenomenon/result of human activity.
- b. The temperature on the Earth is rapidly rising/stabilizing.
- c. Global warming is related to climate change/changes in the Solar system.
- d. Summer temperatures in London will be like in Spain in three/four decades.
- e. Cities in the northern hemisphere will resemble cities more than 600/2000 miles closer to the equator.

**2. Find the following words in the text.**

1. causing great damage.
2. a prolonged period of abnormally low rainfall, leading to a shortage of water.

3. a prediction or estimate of future events, especially coming weather or a financial trend.
4. to encounter or undergo (an event or occurrence).
5. an adjective meaning strict or harsh.
6. a verb meaning to put (someone or something) at risk or in danger.

**3. Read the text, define the key words and write abstracts both in English and Ukrainian.**

## **GLOBAL HEATING: LONDON TO HAVE CLIMATE SIMILR TO BARCELONA BY 2050**

**Nearly 80% of cities to undergo dramatic and potentially disastrous changes, study finds.**

*Fiona Harvey Environment correspondent*



*Barcelona*



*London*

Barcelona has previously been affected by extreme drought. London could experience the same problems in the future, say researchers.

London will have a similar climate in three decades' time to that of Barcelona today, according to research – but if that seems enticing, a warning: the change could be accompanied by severe drought.

Madrid will feel like present-day Marrakech by 2050, and Stockholm like Budapest, according to a report on the likely impacts of the climate crisis. Around the world, cities that are currently in temperate or cold zones in the northern hemisphere will resemble cities more than 600 miles (1,000km) closer to the equator, with damaging effects on health and infrastructure.

Among other analogues, the study suggests Moscow will resemble Sofia, Seattle will feel like San Francisco and New York will be comparable to Virginia Beach. The researchers have created an interactive map showing hundreds of cities and their 2050 counterparts.

Water shortages will affect scores of cities now in temperate climates as a result of the global heating, which is forecast to be by as much as 3.5C in European cities in summer and 4.7C in winter.

Nearly eight in 10 cities will experience dramatic changes, according to the study of 520 major cities published in the journal Plos One.

Barcelona was affected by extreme drought just over 10 years ago, endangering many inhabitants and resulting in tens of millions of euros being spent on importing drinking water. It is becoming more likely that London and cities in similar latitudes will experience the same problems in the future, say the researchers.

Among the most concerning findings is that the residents of about a fifth of cities globally – including Jakarta, Singapore, Yangon and Kuala Lumpur – will experience conditions currently not seen in any major cities in the world. This unprecedented level of change “blew my mind”, said Tom Crowther, founder of the Crowther Lab in Switzerland, which carried out the research.

“These are environmental conditions that are not experienced anywhere on the planet at the moment,” he told the Guardian. “That means there will be new political challenges, new infrastructure challenges that we have not faced before.”

### Comprehension check

**Are these statements true (T) or false (F) according to the article? Correct any that are false.**

1. Barcelona has never experienced a severe drought.
2. Only some cities will undergo climatic changes.
3. Cities in temperate or cold zones will have the same climatic conditions.
4. Almost all cities will have a severe shortage of water.
5. Humanity will face a new political reality.

### Key language

**Match the words in the left-hand column with those in the right-hand column to make expressions from the text.**

- |                   |               |
|-------------------|---------------|
| 1. Global         | a. drought    |
| 2. disastrous     | b. crisis     |
| 3. extreme        | c. map        |
| 4. climate        | d. changes    |
| 5. the northern   | e. shortage   |
| 6. an interactive | f. heating    |
| 7. water          | g. hemisphere |
| 8. political      | h. challenges |

### Discussion.

**If you could, what would you do to prevent climate catastrophe?**

### TEXT 3

#### 1. What do you know about noise? Choose the best answers.

- a. Noise is a pollutant/irritant.
- b. Long exposure to noise can cause hearing/ memory loss.
- c. 10/20% of Americans suffer from hearing deterioration.
- d. Noise is the loudest near airports/ stadiums.
- e. A decibel is ten/fifteen-fold increase in sound energy.

#### 2. Find the following words in the text.

1. the state of being exposed to contact with something.
2. a general view, examination, or description of someone or something.
3. the surroundings or conditions in which a person, animal, or plant lives or operates.
4. the quality or state of being irritable.
5. a verb meaning to prevent (a process or activity) from continuing or being carried out properly
6. an adjective meaning widely or constantly encountered; common or widespread.
7. exceeding a prescribed or desirable amount
8. a noun meaning ringing or buzzing in the ears.

#### 3. Read the text, define the key words and write abstracts both in English and Ukrainian.

### NOISE

Every year since 1973, the U.S. Department of Housing and Urban Development has conducted a survey to find out what city residents dislike about their environment. And every year the same factor has been named most objectionable. It is not crime, pollution, or congestion; it is noise – something that reaches every part of the city every day.

We have known for a long time that prolonged exposure to noises, such as loud music or the roar of machinery, can result in hearing loss. Evidence now suggests that noise-related stress also causes a wide range of psychological and physiological problems ranging from irritability to heart disease. An increasing number of people are affected by noise in their environment. By age 40, nearly everyone in America has suffered hearing deterioration in the higher frequencies. An estimated 10 percent of Americans (24 million people) suffer serious hearing loss, and the lives of another 80 million people are significantly disrupted by noise.

What is noise? There are many definitions, some technical and some philosophical. What is music to your ears might be noise to someone else. Simply defined, noise pollution is any unwanted sound or any sound that

interferes with hearing, causes stress, or disrupts our lives. Sound is measured either in dynes, watts, or decibels. Note that decibels (db) are logarithmic; that is, a 10 db increase represents a tenfold increase in sound energy.

City noises come from many sources. Traffic is generally the most omnipresent noise. Cars, trucks, and buses create a roar that permeates nearly everywhere in the city. Near airports, jets thunder overhead, stopping conversation, rattling dishes, sometimes even cracking walls. Jackhammers rattle in the streets; sirens pierce the air; motorcycles, lawnmowers, snowblowers, and chain saws create an infernal din; and music from radios, TVs, and loudspeakers fills the air everywhere.

The sensitivity and discrimination of our hearing is remarkable. Normally, humans can hear sounds from 16 hertz to 20,000 hertz (cycles per second). A young child whose hearing has not yet been damaged by excess noise can hear the whine of a mosquito's wings at the window when less than one quadrillionth ( $1 \times 10^{-15}$ ) of a watt per  $\text{cm}^2$  is reaching the eardrum.

Prolonged exposure to sounds above about 90 decibels can permanently damage the sensitive mechanism of the inner ear. By age 30, most Americans have lost 5 db of sensitivity and can't hear anything above 16,000 Hertz (Hz); by age 65, the sensitivity reduction is 40 db for most people, and all sounds above 8,000 Hz are lost. By contrast, in the Sudan, where the environment is very quiet, even 70-year-olds have no significant hearing loss.

Extremely loud sounds – above 130 db, the level of a loud rock band or music heard through earphones at a high setting – actually can destroy sensory nerve endings, causing aberrant nerve signals that the brain interprets as a high-pitched whine or whistle. You may have experienced ringing ears after exposure to very loud noises. Coffee, aspirin, certain antibiotics, and fever also can cause ringing sensations, but they usually are temporary.

A persistent ringing is called tinnitus. It has been estimated that 94 percent of the people in the United States suffer some degree of tinnitus. For most people, the ringing is noticeable only in a very quiet environment, and we rarely are in a place that is quiet enough to hear it. About thirty-five out of one thousand people have tinnitus severely enough to interfere with their lives. Sometimes the ringing becomes so loud that it is unendurable, like shrieking brakes on a subway train. Unfortunately, there is not yet a treatment for this distressing disorder.

### **Comprehension check**

**Are these statements true (T) or false (F) according to the article?  
Correct any that are false.**

1. Noise is the most irritating factor of our life.
2. Our hearing is very sensitive.
3. People can hear sounds from 16 hertz to 40,000 hertz.

4. Extremely loud music cannot destroy sensory nerve endings.
5. Coffee and antibiotics can cause ringing sensations.

### Key language

**Match the words in the left-hand column with those in the right-hand column to make expressions from the text.**

- |                |                  |
|----------------|------------------|
| 1. prolonged   | a. disease       |
| 2. hearing     | b. increase      |
| 3. heart       | c. loss          |
| 4. hearing     | d. exposure      |
| 5. tenfold     | e. noise         |
| 6. excess      | f. deterioration |
| 7. quiet       | g. disorder      |
| 8. distressing | h. environment   |

### Discussion.

How can we preserve our environment in our struggle against noise pollution?

### TEXT 4

**1 What do you know about the polar regions? Choose the best answers.**

1. Polar bears are found in the Arctic / Antarctica.
2. Penguins are found in the Arctic / Antarctica.
3. Antarctica is the driest / wettest continent on Earth.
4. The first person to reach the South Pole was American / Norwegian.
5. Three / Seven countries have territories on Antarctica.
6. About 68% / 98% of Antarctica is covered in ice.

**2. Find the following words in the text.**

1. An adjective meaning unpleasant and difficult to live in
2. A noun meaning a ship that has sunk.
3. An adjective meaning causing a lot of harm or damage
4. A two-word noun meaning a large area of ice floating on the surface of the sea .
5. An adjective meaning with no people living there .
6. A noun meaning wood used for building
7. An adjective meaning not damaged or lacking any parts as a result of something that has happened .
8. A two-word adjective meaning strong and not easily damaged
9. An adjective meaning extremely good or impressive
10. A two-word adjective meaning extremely modern and advanced

**3. Read the text, define the key words and write abstracts both in English and Ukrainian.**

## **ANTARCTIC EXPEDITION TO RENEW SEARCH FOR SHACKLETON'S SHIP "THE ENDURANCE".**

Captained by Edward Shackleton, the Endurance was a ship that became trapped in Antarctic ice and sank in 1915. For many years people thought that finding this symbol of the 'heroic age' of polar exploration was impossible because of the harsh Antarctic environment. Now a major scientific expedition will attempt to locate and film the wreck. Endurance22 will launch early next year, in a ship that will brave the dangerous frozen waters, forcing its way through miles of pack ice. However, the effects of climate change will make the expedition a little less difficult, as melting ice will make it easier for the ship to make progress.

Mensun Bound, its director of exploration, led the 2019 search for the Endurance that had to be called off because of extreme weather conditions. 'I have mixed emotions. On the one hand, there's great excitement. On the other, for the last three years, I've been very sad that we didn't find it last time. It's never far from my thoughts. That ship is always in my imagination,' he said. Bound said global warming in the Antarctic is 'absolutely devastating' but that the melting ice 'has improved our chances' of discovering the shipwreck. Discussing the dangers, he said that if tourist ships sailed deep the Weddell Sea, they would be ripped open by the ice. Shackleton's attempt to cross Antarctica is an epic story of bravery and survival. The Endurance became trapped in ice and drifted for months before being crushed and sinking. The men drifted on ice floes for months. Eventually they reached the uninhabited Elephant Island, where they lived off penguins and seal meat. Shackleton and five others then headed for the island of South Georgia in a whale boat, eventually rescuing the others from Elephant Island, with all 28 of the crew returning alive.

"The Endurance" is believed to lie at a depth of more than 3,000 metres. Although the ship was crushed, its timbers are likely to be well preserved as a result of the extreme cold, the absence of light, and the relative lack of oxygen. It is possible that the ship's strength of construction means that much of it is intact. The ship for Endurance22 will set off from Cape Town early next year. It has heavy-duty ice-breakers that will force their way through the pack ice for miles on end, Bound said: 'It is a battle. Last time, we ourselves became trapped in the ice, not once but several times, just as "The Endurance" did, and those were worrying moments.' The team will be using underwater search vehicles, equipped with sensors, lights and cameras to bring discoveries to a worldwide audience. John Shears, the expedition leader, said that with the ship, an outstanding crew and cutting-edge technology, 'there has never been as good an opportunity to locate Endurance'. Mr. Bound has been researching the archives for clues to the wreck's location beyond the famous coordinates recorded by Frank Worsley, the ship's navigator. 'We were close in 2019,' he said.

'We covered over half of the search area – up to 9 km across ... But Worsley never took his coordinates on the day the ship sank. His last observation was almost three days before. What was the ship doing in those three days? What was the speed and direction? I have to take all those things into account.'

Donald Lamont, chairman of the Falklands Maritime Heritage Trust, said: 'We hope that this effort will bring the story of Shackleton and his ship to a younger generation, inspiring their interest in the science and the environmental importance of Antarctica for all of us.'

*Dalya Alberge. © Guardian News and Media 2021*

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### Comprehension check

**Are these statements true (T) or false (F) according to the article? Correct any that are false.**

- a. People always thought it would be easy to find the Endurance.
- b. "The Endurance" 22 expedition will make progress more slowly because of the effects of climate change.
- c. The ice would destroy any tourist ships that sailed deep into the Weddell Sea.
- d. The crew of "The Endurance" were killed when the ship sank.
5. The wreck of "The Endurance" is more than 3,000 metres below the surface of the sea.
6. The extreme cold and the absence of light and oxygen have probably preserved the wooden parts of "The Endurance".
7. The 2019 expedition to find the wreck was trapped in the ice twice.
8. The leader of the 2022 expedition believes they have a good chance of finding "The Endurance".
9. One problem is that they do not know exactly where the wreck is.
10. Frank Worsley was the captain of "The Endurance".

### Key language

**Match the words in the left-hand column with those in the right-hand column to make expressions from the text.**

- |                 |                |
|-----------------|----------------|
| 1. cutting-edge | a. exploration |
| 2. global       | b. vehicles    |
| 3. polar        | c. conditions  |
| 4. climate      | d. emotions    |
| 5. weather      | e. technology  |
| 6. extreme      | f. change      |
| 7. search       | g. cold        |
| 8. mixed        | h. warming     |

## Discussion

### a. Discuss these statements.

- ‘There is no point in exploring wrecks like "The Endurance".’
- ‘Antarctica is the last wilderness so we should leave it that way.’

### In your own words

Imagine that you are a member of the crew of "The Endurance" 22 expedition. You sailed from Cape Town and you are now in the Weddell Sea looking for the wreck. Write an email (up to 150 words) to a friend back home describing your experiences so far. Include details about the journey, the sea and weather conditions, any animal life you have seen, what the coast of Antarctica looks like, and what you are doing to find the wreck. Use some of the vocabulary in the text (e.g., underwater search vehicles).

### Keys to exercise 2.

**TEXT 1.** 1. pollutant; 2. welfare; 3. hazardous; 4. demolition; 5. evidence; 6. adverse; 7. airborne; 8. weathering.

**TEXT 2.** 1. disastrous; 2. drought; 3. forecast; 4. experience; 5. severe; 6. endanger.

**TEXT 3.** 1. exposure; 2. survey; 3. environment; 4. irritation; 5. prevention; 6. omnipresent; 7. excess; 8. tinnitus.

**TEXT 4.** 1. harsh; 2. wreck; 3. extreme; 4. ice floes; 5. uninhabited; 6. timber; 7. intact; 8. well-preserved; 9. heavy-duty; 10. cutting-edge.

## APPENDIX I

Таблиця хімічних елементів, які використовуються в науковій літературі

Ar	argon	Аргон
Ac	actinium	Актиній
Ag	Silver	Срібло
Al	aluminium	Алюміній
An	actinon	Актинон
As	arsenic	Миш'як
At	astatine	Астатин
Au	gold	Золото
B	boron	Бор
Ba	barium	Барій
Be	beryllium	Берилій
Bi	bismuth	Вісмут
Bk	berkelium	Берклій
Br	bromine	Бром
C	carbon	Вуглець
Ca	calcium	Кальцій
Cd	cadmium	Кадмій
Cl	chlorine	Хлор
Cm	curium	Кюрій
Co	cobalt	Кобальт
Cr	chromium	Хром
Cu	copper	Мідь
F	fluorine	Фтор
Fe	iron	Залізо
H	hydrogen	Водень
He	helium	Гелій
Hg	mercury	Ртуть
I	iodine	Йод
In	indium	Індій
K	potassium	Калій
Li	lithium	Літій
Mg	magnesium	Магній
Mn	manganese	Марганець
N	nitrogen	Азот
Na	sodium	Натрій

Ni	nickel	Нікель
O	oxygen	Кисень
P	phosphorus	Фосфор
Pb	lead	Свинець
Pt	platinum	Платина
Pu	plutonium	Плутоній
S	sulphur	Сірка
Sb	antimony	Сурма / Стибій
Si	silicon	Кремній
Sn	tin	Олово
Sr	strontium	Стронцій
Ta	tantalum	Тантал
Ti	titanium	Титан
U	uranium	Уран
V	vanadium	Ванадій
Wn	tungsten	Вольфрам
Zn	zinc	Цинк

## APPENDIX II

### **Numerals – Числівник**

#### **Порядок читання цифрових сполучень**

3 – three

13 – thirteen

30 – thirty

33 – thirty three

333 – three hundred and thirty three

333,333 – three hundred and thirty three thousand, three hundred and thirty three

333,333,333 – three hundred and thirty three million, three hundred and thirty three thousand, three hundred and thirty three

123,456,789 – 1h and 23m 4h and 56th. 7h and 89 – one hundred and twenty three million four hundred and fifty six thousand seven hundred and eighty nine.

1 % one percent – один відсоток

20 % twenty percent – двадцять відсотків

### **Fractional Numerals – Дробові числівники**

#### **Common Fractions – Звичайні дроби**

$\frac{1}{2}$  a half; one half

$\frac{1}{3}$  a third; one third

$\frac{1}{10}$  a tenth; one tenth

$\frac{1}{25}$  a (one) twenty fifth

$\frac{1}{4}$  1) a quarter; one quarter

2) a fourth; one fourth

$\frac{1}{5}$  a fifth; one fifth

$\frac{3}{4}$  1) three fourths

2) three quarters

$\frac{5}{16}$  five sixteenths

$\frac{9}{10}$  nine-tenths

$\frac{26}{38}$  twenty six thirty-eighths

$\frac{79}{100}$  seventy-nine hundredths

$\frac{1}{100}$  a (one) hundredth

$\frac{1}{1000}$  a (one) thousandth

$\frac{125}{1000}$  a (one) hundred and twenty-five thousandths

$2 \frac{1}{2}$  two and a half

$3 \frac{1}{3}$  three and a third

$135 \frac{3}{4}$  a (one) hundred and thirty-five and three fourths (three quarters)

**Decimal Fractions – Десятичні дроби**

- 0.2 1) 0 point two
- 2) nought point two
- 3) zero point two
- 4) point two
- 0.02 1) o point o two
- 2) nought point nought two
- 3) zero point zero two
- 4) point nought two
- 5) point zero two
- 0.002 1) o point o two
- 2) nought point nought nought two
- 3) zero point zero zero two
- 4) point nought nought two
- 5) point two oes two
- 0.75 1) nought point seventy-five
- 2) point seven five
- 1.1 one point one
- 1.25 one point two five
- 63.57 1) sixty-three point five seven
- 2) six three point five seven
- 12.707 1) twelve point seven nought seven
- 2) one two point seven nought seven

\*\*\*

- 2x3=6 – twice three is (makes) six
- 3x4=12 – three times four are twelve
- 7+8=15 – seven and (plus) eight are (make) fifteen
- 10-3=7 – ten less (minus) three is seven
- 20:5=4 – twenty divided by five is (makes) four

## APPENDIX III

### Сстійкі англо-українські словосполучення наукової мови

#### A

above:	
above all	перш за все
accord:	
in accord with	згідно з
accordingly	
account:	
of no account	незначний
on account of	в результаті
on no account	ні в якому разі
on one's account	самостійно
	ось чому
on this account	не брати до уваги
	враховувати
	враховувати
to leave ( put) out of account	
to take account of	
to take into account	урешті-решт
after:	
after all	через деякий час
	методом
after a while	значно пізніше
after the fashion	
well after	весь час
all:	узагалі
all along	усі крім
all in all	усюди, навкруги
all but	тим більше
all over	протягом
all the more	перш за все
all through	
first of all	весь час
along:	разом
all along	разом з тим
along with	у цілому
alongside	
altogether	і так далі
and:	
and so on	якщо взагалі

any:	так чи інакше
in any ( anything)	узагалі
anyhow	
anyway	такий як
as:	у порівнянні з
as...as	на відміну від
as against	відносно
as distinct from	ще
as far as...is concerned	відносно
as far back as	фактично
as for	нібито
as good as	фактично
as if, as though	нерідко
as it is, as it does	як тільки
as often as not	а також
as soon as	ще
as well as	
as yet	узагалі
at:	у всякому випадку
at all	у всякому випадку
at all events	у кращому випадку
at any rate	детально
at best	найбільше
at large	відразу
at most	за один раз
at once	деколи
at a time	
at times	
<b>B</b>	
behalf:	
in behalf	заради
on behalf	за дорученням
best:	
at best	у кращому випадку
best value	оптимальна величина
to the best of our knowledge	наскільки нам відомо
to do one's best	робити все можливе
both:	
both...and...	як...так...

by:	узагалі
by and large	поступово
by degree	значно
by then	дякуючи
by virtue of	з допомогою
by way	узагалі кажучи
for and by	

## C

case:	
the case is	річ у тім, що
as the case may be	за обставинами
in case	у випадку
in any case	у всякому випадку
in no case	ні в якому разі
this is far from being the case	справа зовсім не в цьому
certain:	
for certain	упевнено
to make certain	упевнитись
come:	
to come into being	виникати
to come into force	набувати чинності
comparison:	
in comparison with	у порівнянні з
beyond comparison	поза порівнянням
conclusion:	
to bring to a conclusion	закінчувати
to arrive at a conclusion	зробити висновки
to reach a conclusion	дійти висновку
consequence:	
as a consequence	у результаті
consideration:	
on no consideration	неістотний
to take into consideration	взяти до уваги
contrary:	
contrary to	на противагу
contrast:	
by contrast to ( with)	у порівнянні з
course:	
in due course	коли треба
during the course of	протягом

**D**

due:

due to

to be due to

як результат

бути обумовленим

**E**

end:

at the end of

in the end

to this end

with this end in view

event:

at all events

in any event

ever:

ever since

ever so if ever

hardly ever

extent:

to the extent of

to a certain extent

to such an extent

у кінці чогось

урешті-решт

маючи на увазі

у всякому випадку

урешті-решт

з тих пір

якщо це взагалі (сталось)

рідко

до, в межах

певною мірою

настільки

**F**

fact:

the fact is

in fact

far:

far and away

far reaching

as far as it goes

by far

so far

this is far from

срава в тому, що

насправді

без сумніву

багатообіцяючий

відносно

значно

до цього часу

це зовсім не так

for:

for a while

for good

for lack of

for one thing

for the first time

на деякий час

назавжди

у зв'язку з відсутністю

по-перше

уперше

for the sake  
for the time being  
for want of

заради  
покищо  
за відсутності

## G

general:  
in general  
generally:  
generally speaking  
give:  
to give credit for  
given that

узагалі, звичайно  
узагалі кажучи  
віддати належне  
за умов

## H

hence  
henceforth  
hereafter  
hereat  
herein  
hereinafter  
hereof  
hereon  
hereout  
hereto  
heretofore  
hereunder  
hereunto  
hereupon  
herewith  
howsoever

отже  
на майбутнє, із цього часу  
потім  
далі  
таким чином  
у цьому, до цього  
далі  
відносно цього  
на цій основі  
до цього, попередній  
попередній  
до цього часу  
під цим  
до цього часу  
вслід за цим  
нібито

## I

if any  
if ever  
inasmuch  
to draw an inference  
insomuch

якщо взагалі  
з погляду на  
висновок  
робити висновки  
настільки, що

## K

keep:  
to keep in mind

враховувати

to keep in touch  
to keep pace with  
to keep with

підтримувати зв'язок  
не відставати  
відповідно до

## L

lack  
for lack of  
not in the least  
to say the least  
length:  
at length  
lest  
let alone  
long:  
long before  
as long as  
in the long run  
long-term

відсутність  
за відсутності  
зовсім  
найменшою мірою

принаймні  
щоби ...не  
не кажучи про

задовго до  
поки, відносно  
урешті-решт  
довгостроковий

## M

matter:  
a matter of dispute  
form and matter  
as a matter of fact  
as a matter of record  
no matter how  
it does not matter  
means:  
by any means  
by means of  
by no means  
by some means or other  
more:  
more often than not  
more than once  
the more so  
much more likely  
it is more than enough  
once more  
more or less  
all the more so, as

предмет суперечок  
форма та зміст  
фактично  
на основі отриманих даних  
немає значення, як  
це не має значення

неодмінно  
з допомогою  
ні в якому разі  
так чи інакше

нерідко  
неодноразово  
тим більше, що  
вірогідно  
більш ніж потрібно  
ще раз  
більш-менш  
тим більше, чим

moreover	крім того
much:	
much of	значно
as much as	стільки ж
much the same	майже так
in as much as	тому що
so much for	це все, що стосується
<b>N</b>	
no longer	більше не
no matter	неважливо
notwithstanding	не дивлячись на
now and again	тепер
now and then	час від часу
from now on	у подальшому
up to now	до цього часу
<b>O</b>	
once again	ще раз
onwards	уперед
onwards or else	або
order:	
in order to	для того щоб
over and above	крім того
over and over	багато разів, повторно
well over	значно вище (більше)
<b>P</b>	
par	рівність
on a par with	поряд з
par excellence	переважно
part:	
part and parcel	невід'ємна частина
per	в, на, за
per sem	сам по собі
point:	
the point is	справа в тім, що
at all points	відносно всього
in point	той, що розглядається
in point of	відносно
in point of fact	насправді

off the point	не по суті
to the point	по суті
prima facie	на перший погляд
pro et contra	за і проти
pro forma	проформа, для виду
pro rata	пропорційно

**R**

rather:	
rather than	замість того, не раніше ніж
reason:	
by reason of	услід
for reason given	на цій основі
regard:	
as regards	відносно
with due regard for	враховуючи
resort:	
in the last resort	як останній засіб
respect:	
in respect of	відносно
with respect to	відносно
in no respect	ні в якому разі

**S**

sake:	
for the sake of	заради
same:	
the same as	таким же чином
just the same	такий самий
set:	
set forth	викласти
set forward	висунути
set to	приступати
so:	
and so forth	наскільки
and so on	і так далі

**T**

take:	
to take into account	враховувати
to take for granted	скористатись

thereafter	з того часу
thereabouts	поблизу
thereby	тим самим
thereagainst	на противагу
thereanent	відносно
thereat	там, в той час
therefore	тому що
thereupon	за тим
therein	там
thereof	із цього
thereover	відносно
therethrough	таким чином
thereto	крім того
theretofore	до того, до цього часу
thereunder	нижче
therewith	разом з тим
through:	
through and through	досконально
time:	
time and again	часто
from time to time	час від часу
this time	на цей раз

**V**

via	через
in view of	з погляду на

**W**

way:	
in one way or another	так чи інакше
in this way	таким чином
the other way round	навпаки
whatever	будь-який
whenever	усякий раз, коли
whereas	тоді як
wherefore	чому? з якої причини?
wherein	у чому?
whereupon	після чого, тоді
whosoever	чий би не
whoever	як би не, котрий би не

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# **АНГЛІЙСЬКА МОВА ДЛЯ БАКАЛАВРІВ–ЕКОЛОГІВ У 2-Х ЧАСТИНАХ**

## **ЧАСТИНА 1**

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