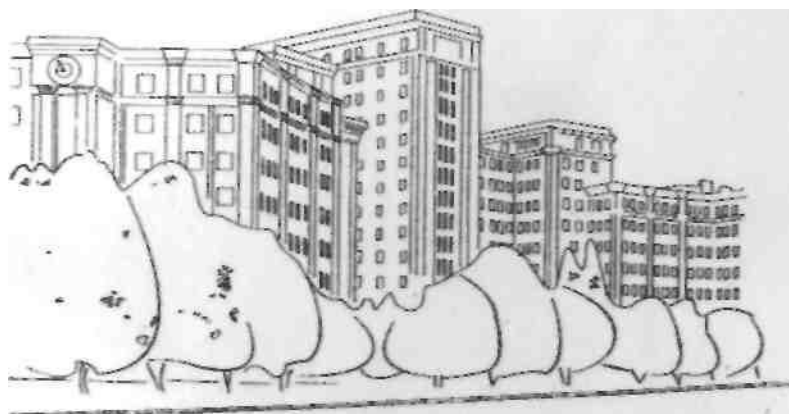


Міністерство освіти і науки України  
Харківський національний університет  
імені В. Н. Каразіна

Н. І. Черкашина

## **ENGLISH FOR STUDENTS OF NATURAL SCIENCES**

*Навчально-методичний посібник з англійської мови для  
студентів природничих факультетів заочної форми навчання*



**Харків 2010**

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ**  
**ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ**  
**імені В. Н. КАРАЗІНА**

Н. І. Черкашина

**English for students of natural sciences**

*НАВЧАЛЬНО-МЕТОДИЧНИЙ ПОСІБНИК  
З АНГЛІЙСЬКОЇ МОВИ  
ДЛЯ СТУДЕНТІВ ПРИРОДНИЧИХ ФАКУЛЬТЕТІВ  
ЗАОЧНОЇ ФОРМИ НАВЧАННЯ*

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Ч 45

*Рекомендовано до друку  
Науково-методичною радою  
Харківського національного університету імені В. Н. Каразіна  
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**Ч-45** *Черкашина Н. І. English for students of natural sciences: Навчально-методичний посібник з англійської мови для студентів природничих факультетів заочної форми навчання. – 2-ге вид., доп. Х.: ХНУ імені В. Н. Каразіна, 2010. – 98 с.*

Навчально-методичний посібник з англійської мови містить завдання для навчання студентів заочного відділення природничих факультетів університету, включає навчальний матеріал, який охоплює більшість розділів нормативної граматики англійської мови і базовий лексичний мінімум з напрямку екологія, географія, геологія, гідрогеологія, а також тести для модульного контролю. Посібник складено у відповідності до діючої програми з англійської мови для неспеціальних факультетів університету.

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## I. Цілі та завдання курсу

Навчання англійської мови у немовному вузі – це самостійний і закінчений курс, який має певний зміст і структуру. Одним із завдань курсу є збереження знань, одержаних у школі, як бази для подальшого навчання у вищому навчальному закладі і навчання протягом життя.

Метою навчання іноземній мові на немовних факультетах університету є практичне володіння іноземною мовою, тобто уміння спілкуватися іноземною мовою на професійному та побутовому рівнях, а також оволодіння навичками й уміннями, що дозволяють використовувати текст як джерело інформації, і різними видами читання як засобами здобуття інформації, що міститься в тексті.

Запропонований навчальний посібник з англійської мови для студентів 1-3 курсів природничих факультетів заочної форми навчання складається з трьох частин, відповідно до програми кожного курсу, і включає: (1) тексти зі спеціальності і вправи лексичного характеру; (2) граматичний матеріал; (3) тести для модульного контролю та контрольні завдання.

По закінченні курсу студент повинен:

- 1) вміти працювати з загальнонауковою і спеціальною літературою, здобувати інформацію з англомовних джерел;
- 2) знати лексичні, граматичні і термінологічні особливості перекладу загальнонаукової і спеціальної літератури;
- 3) вміти спілкуватися на повсякденні теми курсу.

## II. Загальні організаційно-методичні вказівки.

Повний курс навчання включає :

- вивчення матеріалу рекомендованого підручника;
- роботу з рекомендованими і додатковими текстами;
- участь у практичних установчих та підсумкових заняттях;
- виконання контрольних робіт;
- задачу додаткового читання;
- задачу заліків та екзамену.

Слухач може звертатися до викладача з питаннями, які виникають під час роботи в міжсесійний період.

Велике значення для самостійної роботи має послідовність роботи з навчальним матеріалом. Починати потрібно з відпрацювання фонетики і читання слів та словосполучень слів, потім необхідно вивчити нові граматичні явища, нові слова і словосполучення слів, прочитати вголос текст, перекласти його. Обов'язково потрібно виконувати всі лексичні і граматичні вправи.

### **Вимоги до мовного матеріалу**

Програма вимагає мати знання з англійської мови в об'ємі середньої школи і володіти основами граматики.

*Фонетичний мінімум.* Засвоєння основних артикуляційних особливостей вимови англійських голосних і приголосних, відсутність пом'якшення

приголосних і збереження дзвінких приголосних в кінці слова; читання голосних у відкритому і закритому складах; наголос; знання основних інтонаційних моделей різних типів речень, засвоєння навичок фонетично правильного читання тексту.

*Лексичний мінімум.* Лексичний мінімум курсу навчання складає біля 2000 лексичних одиниць (слів і словосполучень), з них 1200 одиниць загальноосвітньої та 800 одиниць спеціальної лексики. Такий об'єм лексичних одиниць є основою для розширення потенційного словникового запасу студента, і тому програма передбачає засвоєння найбільш вживаних словотворчих засобів англійської мови: основних префіксів, суфіксів іменників, прикметників, прислівників, дієслів, явищ конверсії (переходу однієї частини мови в іншу без зміни форми слова).

*Граматичний мінімум.* У процесі навчання студент повинен засвоїти основні граматичні форми і структури англійської мови.

### **Морфологія**

*Іменник.* Артиклі(означений та неозначений). Злічувані й незлічувані іменники. Число іменника. Відмінювання іменників.

*Прикметник.* Морфологічна будова прикметників. Ступені порівняння, порівняльні конструкції прикметників.

*Числівник.* Кількісні та порядкові числівники. Дробові числівники.

*Займенник.* Загальна характеристика займенника. Особові, присвійні, зворотні, взаємні, вказівні, питальні, сполучні, відносні та означальні займенники. Much, Many, Little, Few.

*Дієслово.* Загальне поняття про дієслово та дієслівні форми. Неправильні дієслова. Способи дієслова. Часи дієслова у дійсному способі активного стану. Систематизація видо-часових форм англійського дієслова в активному стані. Уживання Passive Voice. Модальні дієслова. Наказовий спосіб. Умовний спосіб. Неособові форми дієслова. Інфінітив, герундій, дієприкметник.

### **Синтаксис**

Типи речень. Головні члени речення. Другорядні члени речення. Порядок слів в англійському розповідному реченні. Узгодження часів. Непряма мова.

### **Література:**

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### **III. Методичні вказівки.**

Особливістю навчання іноземної мови на заочному відділенні є те, що обсяги самостійної роботи студента з вироблення мовних навичок і вмінь значно перевищують обсяги практичних аудиторних занять. Співвідношення аудиторних і самостійних годин, які відводяться на повний курс вивчення

40г: 240 годин. Таким чином, кожному аудиторному заняттю повинні передувати не менше 12 годин самостійної роботи студента.

### *1. Правила читання.*

Перш за все необхідно навчитися правильно вимовляти і читати слова і речення. Щоб навчитися правильно вимовляти звуки і правильно читати тексти англійською мовою, потрібно:

По-перше, засвоїти правила вимови окремих букв і буквосполучень, а також правила наголосу у словах і в цілому реченні, при цьому особливу увагу слід приділити вимові тих звуків, які не мають аналогів у рідній мові.

По-друге, регулярно тренуватися у читанні і вимові слів та речень з рекомендованих підручників.

Під час читання слід навчитися ділити речення на змістові відрізки – синтагми, що забезпечить правильну техніку читання, необхідну для правильного розуміння текстів. Запам'ятайте вимову і правила читання голосних.

### *2. Робота з лексикою.*

Для того, щоб розуміти прочитану літературу потрібно мати певний запас слів і словосполучень слів. Для цього рекомендується регулярно читати англійською мовою навчальні тексти, газети і оригінальну літературу за спеціальністю.

Роботу з закріплення і збагачення лексичного запасу рекомендуємо проводити таким чином:

- а) робота зі словником, вивчіть англійський алфавіт, ознайомтесь з будовою словника і системою умовних позначень, які прийняті у даному словнику;
- б) слова виписуйте у зошит або на карточки у початковій формі з відповідною граматичною характеристикою, тобто іменник в однині, дієслово в інфінітиві, вказуючи основні форми для неправильних дієслів і приклади їх вживання у тексті.

При перекладі з англійської мови рідною мовою необхідно пам'ятати, що труднощі викликають:

1. *Багатозначність слів.* Наприклад, слово *form* має значення:
  - 1) форма, зовнішній вигляд, фігура (людини)
  - 2) клас (шкільний)
  - 3) бланк
  - 4) формулювати, являти собою.

Підібрати потрібне слово можна тільки виходячи із контексту. Наприклад, *Bonds formed the bulk of his estate.* Основною частиною його майна були облігації.

2. *Омоніми* (різні за значенням, але звучать однаково). Їх слід відрізнити від багатозначних слів.

Наприклад, *weight*- вага; *wait*- чекати; *rain* – дощ; *reign*- правити; *court*-суд; *caught*- піймав. *It rained yesterday.* - Вчора йшов дощ. *How long has Queen Elizabeth II reigned?* - Як довго правила королева Єлизавета II?

3. *Конверсія.* Утворення нових слів від вже існуючих без зміни їх написання називається конверсією. Найбільш розповсюдженим є утворення дієслів від

відповідних іменників.

Наприклад,

function - функція;	to function – функціонувати;
increase - збільшення, ріст;	to increase - збільшуватися, зростати;
result - результат;	to result - бути результатом.

*4. Інтернаціоналізми.* В англійській мові значне місце займають слова, які прийшли з інших мов, в основному з латинської та грецької мов. Ці слова мають широке розповсюдження, і вони стали інтернаціональними. За допомогою кореня таких слів легко здогадатися про їх переклад рідною мовою. Наприклад, mechanization - механізація, atom - атом, і т.д.

*5. Словотворення.* Ефективним засобом розширення запасу слів в англійській мові є знання способів словотворення. Якщо ви вмієте розчленити похідне слово на корінь, суфікс і префікс, тоді легше визначити значення невідомого слова. Крім цього, якщо ви знаєте значення найбільш вживаних префіксів і суфіксів, ви легко зможете зрозуміти значення гнізда слів, утворених з одного корінного слова, яке ви знаєте. (таблиця 1.2, 3).

**Таблиця 1. Найбільш поширені префікси**

префікси	приклади	переклад
anti-	anticyclone	антициклон
co-	cooperation	співробітництво
counter-	counteraction	противага
dis-	disconnect	роз'єднати
extra-	extraordinary	незвичайний
in-	inexpensive	недорогий
multi-	multistage	багатоступеневий
over-	overpay	переплачувати
poly-	poly-semantic	багатозначний
post-	post-war	повоєнний
pre-	preheat	заздалегідь
re-	rewrite	переписати
trans-	transformation	перетворення
ultra-	ultra-violet	ультрафіолетовий
under-	underline	підкреслювати

**Таблиця 2. Основні суфікси іменників**

суфікси	приклади	переклад
-ance	resistance	опір
-ence	difference	різниця
-age	usage	вживання
--dom	freedom	свобода
-ion (-tion)	invitation	запрошення
-ment	development	розвиток
-ness	usefulness	корисність
-ship	membership	членство
-er	converter	перетворювач
-ty	difficulty	важкість

**Таблиця 3. Основні суфікси прикметників і прислівників**

префікси	приклади	переклад
-able	changeable	непостійний
-ible	possible	можливий
-ant	resistant	той, що чинить опір
-ent	different	не такий
-ful	powerful	сильний
-less	helpless	безпорадний
-ous	famous	знаменитий
-ly	happily	щасливо

6. В англійській мові є низка дієслів, які вживаються з прийменниками і утворюють нові поняття, завдяки чому така порівняно невелика група слів характеризується великою багатозначністю. Сюди відносяться такі дієслова, як to get, to be, to make, to go, to put. У словниках дієслова з прийменниками пишуться після основного значення дієслова в алфавітному порядку прийменника. Наприклад,

to go	йти
to go out	виходити
to go about	циркулювати ( про слухи, гроші)
to go back	повертатися
to go away	піти

7. В англійській мові дуже часто іменник виконує функцію означення без зміни своєї форми. Структура « іменник + іменник + іменник », і т.д. викликає труднощі при перекладі , тому що іменники стоять поряд. Головним словом у такій групі буде останнє слово, ті, які стоять перед ним, будуть означеннями.

Деякі іменники-означення можуть перекладатися прикметниками.

limit pressure	граничний тиск
room temperature	кімнатна температура



machine-building industry                      машинобудівна промисловість

Однак, такий спосіб перекладу не завжди можливий: часто такі означення доводиться перекладати іменниками у непрямих відмінках або прийменниковими комплексами. Порядок перекладу обумовлюється змістом між означеннями і словом, яке означається. Переклад слід починати справа наліво з останнього іменника, а іменники, які стоять перед ним у функції означення, потрібно перекладати іменниками у непрямих відмінках (частіше у родовому), або прийменниковим комплексом. Наприклад, the institute radio equipment laboratory – інститутська лабораторія радіоустаткування;

atomic energy conference – конференція з проблем атомної енергетики

8. У текстах наукового характеру англійські словосполучення часто перекладаються одним словом:

raw materials                      сировина

radio operator                      радист

construction works                      будова

Сполучення трьох, чотирьох слів можна перекладати рідною мовою двома-трьома словами:

End user procedure manual – посібник для кінцевого користувача.

9. Іноді при перекладі з англійської мови рідною доводиться користуватися описовим перекладом і передавати значення англійського слова за допомогою декількох рідних слів. Наприклад:

*Іменники*

characteristics                      характерні особливості

efficiency                      коефіцієнт корисної дії

necessities                      предмети першої необхідності

output                      випуск продукції

solid                      тверде тіло

*дієслова і прислівники*

to average                      складати, рівнятися в середньому

mainly (chiefly)                      головним чином

10. Наукова література характеризується великою кількістю термінів. Термін – це слово або словосполучення, яке має одне строго визначене значення для даної галузі науки і техніки. Незнайомий термін слід шукати у термінологічному словнику.

Оскільки основною метою навчання іноземної мови є отримання інформації з англомовних джерел, особливу увагу слід приділяти читанню текстів. Точне і повне розуміння тексту досягається при вивчаючому читанні, яке передбачає вміння самостійно проаналізувати текст з точки зору лексики і граматики. Результатом цього буде якісний переклад рідною мовою за допомогою словника.

## **Part 1**

### **ENTRY TEST**

*Time: 45 minutes*

**Instructions:** Choose the word or phrase (A, B or C) which is correct in the sentence.

EXAMPLE: I ... tired today.

a. am    b. is    c. are

Only 'a' is correct, so you write *a* on your answer sheet.

1. .... oranges are very good.  
a. These    b. This    c. That
2. Are .....people very nice?  
a. that    b. those    c. there
3. .... a dog in the garden.  
a. It has    b. It is    c. There is
4. What's that? ..... is my new car.  
a. They    b. It    c. There
5. .... is a good film at the Odeon.  
a. Their    b. They're    c. There
6. I ..... to go to town tomorrow.  
a. has    b. have    c. had
7. You ought ..... at home.  
a. stay    b. to stay    c. staying
8. He ..... speak English.  
a. knows    b. knows to    c. can
9. He should ..... a letter.  
a. write    b. to write    c. writing
10. Do you want ..... the film?  
a. see    b. to see    c. seeing
11. I hope John's got ..... money.  
a. a    b. any    c. some
12. He is .....  
a. engineer    b. one engineer    c. an engineer
13. I'd like ..... eggs, please.  
a. any    b. an    c. some
14. We've got ..... eggs left.  
a. a few    b. a little    c. a number
15. There aren't ..... people here today.  
a. a lot    b. many    c. much
16. .... she get up early every day?  
a. Is    b. Does    c. Has
17. Were you in London last week? No, I .....  
a. didn't    b. weren't    c. wasn't
18. She often ..... a bath in the morning.  
a. has    b. have    c. is having
19. He .....his hat last week.  
a. loses    b. has lost    c. lost
20. They ..... the 7.30 bus yesterday.  
a. caught    b. catch    c. catches

21. Mary is here, but her parents .....  
a. isn't      b. wasn't      c. aren't
22. He ..... because he was late.  
a. hurries      b. hurried      c. hurry
23. .... she going to do anything today?  
a. Doesn't      b. Does      c. Isn't
24. They ..... television at the moment.  
a. watch      b. is watching      c. are watching
25. .... much work yesterday?  
a. Did you do      b. Do you do      c. Did you
26. Who is she looking ..... ?  
a. on      b. at      c. to
27. This is a nice piece ..... cheese.  
a. of      b. off      c. -
28. Our holidays are ..... June.  
a. in      b. at      c. on
29. They're listening..... the news.  
a. at      b. to      c. -
30. We came here ..... 1999.  
a. on      b. at      c. in
31. What's the matter ..... him?  
a. by      b. with      c. from
32. Your glasses are ..... the bathroom.  
a. in      b. of      c. into
33. Stop him! He's going to jump .....the river!  
a. on      b. onto      c. into
34. No large ships can go ..... that bridge.  
a. over      b. across      c. under
35. It's time for coffee. All the students are  
coming ..... their lessons.  
a. off      b. out of      c. out
36. This book is .....  
a. my      b. me      c. mine
37. She would like to meet .....  
a. you      b. your      c. to you
38. Give the money .....  
a. to them      b. them      c. theirs
39. Whose is that big house? It's .....  
a. her      b. hers      c. to her
40. We're going to ..... favourite shop.  
a. our      b. us      c. ours
41. It is much ..... here.  
a. warm      b. warmer      c. more warm
42. She is not as old ..... I am.  
a. that      b. tan      c. as

43. He's ..... intelligent than I am.  
 a. very      b. more      c. plus
44. He drives .....  
 a. more careful   b. very careful   c. very carefully
45. Yesterday was the ..... day so far this year.  
 a. very hot      b. most hot      c. hottest
46. .... wrote that letter?  
 a. Where      b. Why      c. Who
47. She went home early..... she had finished her work.  
 a. because      b. while      c. without
48. .... did you put it?  
 a. Where      b. Who      c. When
49. '..... is.... Bill?' 'Very well, thanks.'  
 a. How      b. Why      c. Where
50. I'm going home to change first..... I'm going out for a meal.  
 a. Than      b. Then      c. Therefore

### Translate the text with the dictionary

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.

## UNIT 1

### Glossary

1. cliff	скеля	12. coal	вугілля
2. shore	берег моря	13. iron ore	залізна руда
3. owes	завдячує	14. copper	мідь

4. advantage	перевага	15. zink	цинк
5. high tide	морський приплив	16. lead	свинець
6. low tide	морський відплив	17. wheat	пшениця
7. harbour	гавань	18. barley	ячмінь
8. fertile valley	родюча долина	19. oats	овес
9. plentiful rainfall	рясні дощі	20. corn	кукурудза
10. heavy fogs	сильні тумани	21. rye	жито
11. goods	товари	22. sugar beets	цукровий буряк

### 1. Read and translate the text.

**The British Isles** lie off the western shores of Europe and come nearest to the Continent where the white cliffs of Dover face the cliffs of north-east France. The Strait of Dover is so narrow that a tunnel was made to connect the railways of the two countries.

North and west of Dover the British coasts are farther away from the Continent, they are separated from it by the North Sea and the English Channel.

Great Britain is the largest island which includes England, Scotland and Wales. It is separated from Ireland by the Irish Sea.

Great Britain owes much to the seas. In the first place, the seas have acted as a guard and have often kept the island free from wars. In the second place, the seas have given Great Britain a great advantage through the tides. Far out in the Atlantic the tides are scarcely noticed, but in the shallow British seas the difference between high tide and low tide is often very considerable especially in funnel-shaped estuaries like those of the Severn and Humber. Thus in -coming deep water twice in every twenty-four hours up the lower channels and estuaries of the rivers has made it possible for large ports to be built many miles from the open sea. Besides the shallow waters around the British Isles are the home of many fish.

England has an area of 50,874 square miles. Its coast line is very irregular. There are many good harbours. No part of the country is more than 70 miles from the sea.

In general, England slopes from west to east. The main mountain system — the Pennine Chain - runs from the Scottish border to the Midlands, a region of hills and fertile valleys.

The rivers flow east into the North Sea (the Tweed, the Tyne, the Thames and a group of streams which join to make the wide Humber) and west into the Irish Sea or the British Channel (the Mersey, the Avon and the longest river in England - the Severn).

England has no large lakes. But the Lake District in the north-western part of the country is known for its beauty. There are sixteen lakes there.

England has a mild climate. This is due to the winds which blow from the south-west, from the ocean and the Gulf Stream which warms its shores. Rainfall is plentiful during the whole year. The heavy fogs of England are famous.

The most important natural resources of England are iron and coal.

Most of the people work in the great industries of the large cities. The most

important industrial products are wool and cotton goods, machinery, iron and steel goods. Coal, iron, copper, zinc, lead and building stone are the principal materials taken out of the ground.

The principal crops are wheat, barley, oats, corn, rye, vegetables, sugar beets and fruits. England imports about 40 per cent of its food supply.

## 2. COMPREHENSION EXERCISES

### 1. Find in the text the terms which describe the following;

1. a dense, cloud-like mass of water droplets suspended in the lowest layers of the atmosphere that reduces visibility to less than 1 km; 2. the cyclic and daily changes in the elevation of the ocean surface caused by the gravitational attraction exerted by the sun and moon; 3. the amount of precipitation recorded in an area during a defined period, and measured in a standard rain gauge; 4. the average weather conditions experienced at a particular place over a long period (usually more than 70 years).

### 2. Answer the following questions:

#### a) comprehension questions:

1. What separates The British Isles from the continent?
2. What countries does the largest island include?
3. What seas wash Great Britain?
4. What does Great Britain owe to the seas?
5. Define the geographical position of Great Britain.
6. What crops are grown in Great Britain?

#### b) true-false questions:

1. London is the capital of Great Britain.
2. England is the largest of the four countries on the British Isles.
3. Iron is the most valuable resource in Great Britain.
4. The Gulf Stream cools the shores of Great Britain.
5. Barley does not grow in UK.

#### c) multiple-choice questions:

1. *What influences on the climate of Great Britain?*

- a) The English Channel
- b) the surrounding seas
- c) the Gulf Stream
- d) the Pennine Chain .

2. *Which of the following crops does not grow in the Great Britain?*

- a) pineapples
- b) barley
- c) potatoes
- d) wheat.

3. *How can you characterize the climate of England?*

- a) continental
- b) mild
- c) extremely continental
- d) damp tropical

4. *Most people in the United Kingdom work*

- a) in heavy industry
- b) in textile industry
- c) in computers
- d) on farms.

### 3. GRAMMAR EXERCISES

#### 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.

#### 2. In the following sentences, one verb form is right and one is wrong. Underline the correct one and cross out the wrong one.

- a. I read/am reading a book about astrology.
- b. I read/am reading lots of books every year.
- c. We go/are going to a party on Saturday.
- d. Nurses look/are looking after people in hospital.
- e. Ann comes/is coming from Ireland.
- f. She comes/is coming for dinner this evening.
- g. I speak/am speaking four languages.
- h. Do you want/Are you wanting to go out tonight?

#### 3. Complete the sentences using the correct form of the verbs in brackets:

1. The earth (to go) round the sun.
2. Laterite soils (found) in South America.
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.

**4. Underline the mistake in the following sentences. Then correct them.**

1. Is you working very hard? Are you working very hard?
2. At the moment they working with Poland?
3. Is Nick and Mike planning the conference together?
4. What you think about?
5. Is raining in Bangkok?

**5. Read the text. (Find Cornwall on the map). Speak about the country, its position, climate, nature, industry, the people and their occupations and traditions.**

Cornwall is a rocky peninsula jutting out into the Atlantic. Open to the southwest winds of the ocean it is characterized by warm winters, cool sunny summers and rich rainfall.

The centre of the peninsula is occupied by uninhabited moorlands. Around this area and between it and the coast lies an area well watered by the many streams, that come hurrying down from the high moorlands to the sea. These valleys are rich and fertile. The rich grasslands, the mild climate and the rainfall have given rise to cattle rearing and dairy industry. The most important crop is oats.

In the days of Roman invasion Cornwall was known for tin-mining. It was one of the most densely populated parts of the British Isles. Yet today one can see only two or three mines being worked.

What tin-mining was for the inland Cornishman, the sea was for the coast dweller. Fishing was until the beginning of the twentieth century one of the most important industries of the area. Most of the boats that do remain are only fishing boats in name. They are used for trips round the small picturesque harbours for holiday-makers.

But one industry in Cornwall continues to grow. It is the mining of china-clay. Ships from all over the world carry the precious Cornish china-clay to Sweden, Australia and many other countries.

The chain of snow white pyramids rises above the industrial district. Snow peaks in the south of Cornwall! But the chief charm of Cornwall is the coast with its many beautiful bays and covers.

Cornishmen differ from the English in their traditions and customs. One of the most famous folk traditions of Cornwall is the Flora Dance. Two or even three times a year, on certain days, all the people of the village, old and young, gather in the market place. They form up a procession and to the traditional Flora Dance tune, dancing, wind their way through all the houses of the village, in at the front door and out through the back. Every town, village and hamlet in Cornwall has its Flora Dance.

## UNIT 2

### Glossary



1. peninsula	півострів
2. gulf	затока
3. bay	бухта, губа
4. latitude	широта
5. ameliorate	покращувати
6. enhance	збільшувати
7. prevalent	переважаючий

## 1. Read and translate the text.

### EUROPE

**Position and size** - With an area of about 3 750 000 square miles, Europe is the smallest of the continents except Australia. It is characterized by the comparatively great length of the coastline, broken up everywhere by peninsulas, gulfs, bays and fringed by islands with the result that only the heart of Russia is more than 500 miles from the sea. Europe lies almost entirely in middle latitudes - the North Temperate /one; only a small fragment in the north is within the Arctic Circle. **Climate** -In general, it may be said that a number of factors have a determining influence on the character of European weather and climate. The factors may be grouped as follows:

a) The western coasts of the continent are bathed by warm current - the North Atlantic Drift, which is a continuation of the Gulf Stream. The existence of this warm current, especially round the British Isles, has undoubtedly an important effect in ameliorating winter conditions. But the effect of the warm water itself is enormously enhanced by the prevalent south-westerly wind; for the warmth is communicated through winds and not by the actual warm current.

b) According to the modern concepts of air-mass meteorology, a very important difference is found between cold Polar air and warm air coming from tropical regions. The position and amount of the cold Polar air varies with the season. The margin, the Polar front, in winter may be regarded as following roughly the 32 F isotherm. The currents of warm tropical air which reach Europe as the Westerlies exert their influences on the remainder of Europe.

c) The configuration of Europe, particularly the existence of the Mediterranean Sea and its continuation in the Black sea, as well as, to a less extent, the existence of the Baltic Sea, permits the penetration eastwards of oceanic conditions.

## 2. COMPREHENSION EXERCISES

### 1. Find in the text the terms which describe the following:

1. The area marking the points of contact between land and water bodies, such as the sea or a lake .2. a line on a weather chart which joins all points of the same temperature at a particular time.3.the winds which blow from the subtropical high pressure latitudes towards the lower pressures of the mid-latitudes between 35° and 65° N and S.

### 2. Answer the following questions:

#### a) Comprehension questions:

1. What is the area of Europe?
2. What is the population of the EU?
3. What countries make up Europe?
4. What is the climate in Europe?
5. Are there any high mountains in Europe? What are they?

**b) True-false questions:**

1. Europe is one of the biggest continents.
2. Its coastline is short.
3. There are no big peninsulas.
4. Europe lies in middle latitudes.
5. The North Atlantic Drift is a continuation of the Gulf Stream.
6. The currents of warm tropical air exert their influences on the remainder of Europe.

**c) Multiple-choice questions:**

1. *What influences European weather?*

- a) northern winds
- b) warm currents
- c) drifting polar ice
- d) south-westerly wind

2. *Europe lies in:*

- a) the Alps
- b) in the Atlantic Ocean
- c) in the middle latitudes
- d) within the Polar Circle

3. *Winter in Europe is*

- a) severe
- b) snowless
- c) with plenty of rains
- d) dry with minus temperatures.

### 3. GRAMMAR EXERCISES

**1. 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?

**2. Supply the missing words.**

- a) wh..... and other crops are raised in the Temperate Zone while raw rubber is cultivated in the ...2. Liners can enter the estuaries of the Humber and the Severn only at high..... 3. Which climate is milder, that of the Frigid Zone or that of the ... Zone ? 4. A mixed forest is a forest of...and ...trees.
- b) The longest.....in the British Isles is the Shannon. It is about 240 miles long. On

its way to the sea the Shannon.....through several lakes. At the city of Limerick the Shannon broadens out into a great..... or mouth, 60 miles long, where the waters rise and fall with the...

The Shannon is very important to Ireland, for from it is produced electricity which is fed to all the ..... in the country.

**3. Memorize the following proverbs with the passive form of the verb-predicate. Give their Russian equivalents.**

1. The road to hell is paved with good intentions.
2. A man is known by the company he keeps.
3. Never ask pardon before you are accused.
4. A liar is not believed when he tells the truth.
5. What is done cannot be undone.

**4. Finish each statement. One clause is affirmative and the negative. All have a main verb.**

EXAMPLE: Americans eat a lot of meat, but Japanese people *don't*.

EXAMPLE: Japanese people don't eat a lot of meat, but Americans *do*.

1. Americans have a high rate of heart disease, but Japanese people \_\_\_\_\_
2. Japanese people don't consume a lot of fat, but Americans \_\_\_\_\_
3. Animal fat contains cholesterol, but plant oil \_\_\_\_\_
4. Some Americans watch what they eat, but others \_\_\_\_\_
5. A lemon doesn't contain much sodium, but soy sauce \_\_\_\_\_
6. Children drink a lot of milk, but adults \_\_\_\_\_

**5. Read and translate the text. Give its main idea.**

The Republic of Ireland (Eire) lies west of England in the Atlantic ocean. It is separated from the island of Great Britain by the Irish Sea.

Eire takes up all the island of Ireland except the north-eastern corner. Here there are six counties which make up Northern Ireland (Ulster), a part of the United Kingdom.

The coasts of the island are mountainous. The central plain contains most of the good farm lands. It also has great peat bogs.

The longest river is the Shannon. It is also the longest in the British Isles.

Ireland has a mild climate with plenty of rainfall. The plentiful rainfall gives the vegetation a vivid green colour. Because of its greenness Ireland is often called "the Emerald Isle".

Seventy-five per cent of the people of Eire earn their living as farmers or cattle raisers. Much of the land is too swampy and hilly to farm, but the thick covering of rich green grass makes excellent pasture land for horses, cattle, pigs and sheep.

The most important farm crops include oats, wheat, barley, rye, flax, potatoes and sugar-beets.

But the climate of Eire is too damp to grow much grain.

**UNIT 3**

## Glossary

1. iron ore	залізна руда
2. clay	глина
3. sedimentary rocks	осадові породи
4. igneous rocks	вивержені породи
5. limestone	вапняк
6. ferroalloys	феросплави
7. sodium	натрій
8. potassium	калій
9. cleavage	розщеплення
10. sulphur	сірка

### 1. Read and translate the text.

## MINERALS

Minerals that make up rocks are defined as inorganic substances which occur naturally and have a definite chemical composition and physical properties which vary within known limits.

The major properties are colour, crystal form, hardness, cleavage and others. Cleavage is one of the most diagnostically useful mineralogical properties which can be found throughout the mineral.

Minerals of use to man can be grouped into two broad categories: 1) metals, such as aluminium, copper, gold, silver, iron, tin, platinum, chromium, nickel, lead and zinc, and 2) non-metallic minerals, such as diamonds, salt, limestone, cement, sulphur, and asbestos. When minerals occur so that they can be worked at a profit they are called ore deposits. Mineral deposits are seldom equally rich throughout.

Economic minerals are those which are of economic importance and include both metallic and non-metallic minerals.

Most minerals consist of several elements. Such elements are oxygen, silicon, titanium, aluminium, iron, magnesium, calcium, sodium, potassium and hydrogen. They make up more than 99 per cent by weight of all the rock-forming minerals. Of these, aluminium, iron and magnesium are industrial metals. The other metals are present in small quantities, mostly in igneous rocks.

For example, iron is one of the most abundant metals in the Earth's crust. There are three important classes of iron deposits: deposits associated with igneous rocks; residual deposits and sedimentary deposits. Iron deposits associated with igneous rocks are usually small but very rich bodies either of haematite or magnetite. Large concentrations have been successfully mined in Pennsylvania (the USA) and in the Russian Federation.

Residual deposits of iron minerals are formed wherever weathering occurs. Iron deposits formed this way are very widespread. It should be stressed that the residual deposits were among the first to be exploited by man.

Sedimentary iron deposits make up most of the world's current production.

As the essential component of every variety of steel, iron is obviously the most important of all industrial metals. It has played a large part in the development of our modern civilization. Iron ores are mainly used for producing cast iron, steels

and ferroalloys. From a scientific point of view, iron's most important property is that it becomes magnetized.

The magnetic iron ore is the main wealth of the Kursk Magnetic Anomaly (KMA). Iron fields are worked by surface mining which is more economical. But the KMA is rich not only in iron ores. Its deposits contain bauxite, phosphorite, cement, sand and clays.

## 2. COMPREHENSION EXERCISES

### 1. Find in the text the terms which describe the following:

1. The property of certain rocks such as slate to split along planes of weakness which are often not related to the original bedding; 2. any naturally occurring solid inorganic substance of definite chemical composition and crystalline structure. 3. a hard strong metal that is used to make steel and is also found in small quantities in blood and food. 4. a pale yellow substance that produces a strong unpleasant smell when it burns and is used in medicine and industry.

### 2. Answer the following questions:

#### a) Comprehension questions:

1. What are minerals?
2. What are the major properties of minerals?
3. Why is cleavage the most important property of minerals?
4. How can minerals be grouped?
5. When are minerals called deposits?
6. What are the three classes of iron deposits?

#### b) True-false questions:

1. Iron is the most important of all industrial metals. 2. Cleavage is one of the most diagnostically useful mineralogical properties. 3. When minerals occur so that they can be worked at a profit they are not called ore deposits. 4. Sedimentary iron deposits make up least of the world's current production.

#### c) Multiple-choice questions:

1. *Minerals that make up rocks, are defined as*

- a) inorganic substances
- b) organic substances
- c) alloys
- d) mixtures

2. *Aluminium, iron and magnesium are*

- a) industrial metals
- b) agricultural products
- c) ferroalloys
- d) chemical elements

3. *Iron is*

- a) the most important of all industrial metals
- b) the least important metal
- c) made up of many other elements
- d) is used in industry only

4. *The Kursk Magnetic Anomaly*

- a) is rich in magnetic iron ore

- b) is in Ukraine
- c) Its deposits contain bauxite, phosphorite.
- d) cement, sand and clays are not found there .

### 3. GRAMMAR EXERCISES

#### 1. Put some / any/I no/ and their derivatives

1. Do you live \_\_\_\_\_ in the centre?
2. There's \_\_\_\_\_ at the door. Can you go and see who it is?
3. Why are you looking under the table? Have you lost \_\_\_\_\_ ?
4. He left the house without saying \_\_\_\_\_ to \_\_\_\_\_.
5. The film is really great. You can ask \_\_\_\_\_ who has seen it.
6. Can you give me \_\_\_\_\_ information about places to see \_\_\_\_\_ in the town?
7. "Where did you go for your holidays?" " \_\_\_\_\_ " " I stayed at home."
8. There were \_\_\_\_\_ shops open.
9. We had to walk because there was \_\_\_\_\_ bus.
10. The station is \_\_\_\_\_ near here.

#### 2. Fill in the gaps with the prepositions (*of, for, in, at, to, during, with, from, on*):

One ... the professors ... our Institute is known (известен) ... his work... the field... geology. He finished school... St. Petersburg and entered ... the Institute of Mining there... the Institute he studied the full range ... subjects relating... geology and mining... his practical training he visited many coal-fields and collected material... his graduation paper ... the stratigraphy of the Urals. After graduating ... the Institute he worked as a geologist in the Kuzbas. He investigated geological conditions and their influence ....the choice ... methods... mining useful minerals.

#### 3. Fill in the gaps with *to be* or *to do* in Present Simple or Present Continuous negative.

*Model:* They aren't watching television now.  
They don't watch television every evening.

1. He \_\_\_\_\_ listening to the radio right now.
2. He \_\_\_\_\_ listen to the radio every day.
3. They \_\_\_\_\_ do their homework in class.
4. They \_\_\_\_\_ doing their homework right now.
5. I \_\_\_\_\_ see any students in that room.
6. Where's your brother? \_\_\_\_\_ he seeing your sister home?

#### 4. 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.

## 5. Read and translate the text. Give its main idea.

### THE EARTH

The earth is one of the planets of the solar system. The planets revolve around the sun and in turn some planets have moons that revolve around them. The earth has a diameter of approximately 8000 miles and is about 25 000 miles in circumference at the equator. Our moon has a diameter of over 2000 miles and is the largest moon in the solar system. It is the brightest object in the night sky and its attraction is the chief cause of the tides. The sun is one of the millions of stars with temperatures so high that they are self-luminous. The sun is a glowing ball 865 000 miles in diameter. But the sun is not the brightest star. Many stars are bigger and brighter than the sun.

Shape of the Earth. - The earth is a sphere. There are many ways to prove that .If we watch a distant ship coming into view we see first of all the masts and then the hull. Similarly, if the ship is moving away its lower part disappears first.

A man standing on the seashore can only see a short distance; if he wants to see farther he must ascend a hill.

There are times when the earth gets between the sun and the moon, so that the earth casts a shadow on the moon. This shadow is always circular. Now, only a spherical body always throws a circular shadow and so we know that the earth must be spherical.

### TEST I.

#### Task I. Максимальна кількість балів: 10 (Total 10)

*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 ... your compliment always.

- 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 10**

*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) many    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) short    B) shortest    C) shorter
5. New inventions of the 1900s made pollution steadily the ...  
 A) less    B) least    C) worse    D) worst

**Task III. Total 20**

*Give English equivalents of the following:*

- |                                      |                   |
|--------------------------------------|-------------------|
| 1 болото                             | 11 наслідки       |
| 2 відкладатися                       | 12 посуха         |
| 3 геологічна епоха кам'яного вугілля | 13 горіння        |
| 4 леткий                             | 14 перевага       |
| 5 вугільні горизонти                 | 15 прилив         |
| 6 домішки                            | 16 родюча долина  |
| 7 шар, пласт                         | 17 сильні тумани  |
| 8 теплиця                            | 18 пшениця        |
| 9 двоокис вуглецю                    | 19 жито           |
| 10 викопне паливо                    | 20 цукровий буряк |

**Task IV. Total 10**

*Compose sentences with proposed question words.*

1. Railways have several advantages over road transport. (What...?) (common)
2. Vehicles are as comfortable as dangerous. (What...?)(common)
3. Pollution in developed countries is higher than in the underdeveloped. (What...? Where...?)
4. Pollution problems first arose during ancient times. (When...? What problems...?)
5. In 1986 an explosion and fire occurred at a nuclear power plant in Chernobyl. (When...? Where...?)



### **Task V. Total 10**

*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 gases                      B) radioactive emission                      C) oil spill
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 20**

*Translate into English.*

1. Ми повинні створювати суспільні організації для боротьби із забрудненням довкілля.
2. Цей район найбрудніший у місті.
3. У 20-му сторіччі групи людей створили кілька потужних екологічних рухів.
4. Політичні зміни у Східній Європі в кінці 20-го сторіччя були пов'язані з екологічними проблемами.
5. Кожен зобов'язаний боротися із забрудненням довкілля.
6. Проблема забруднення повітря, землі та води стала головною наприкінці 20-го сторіччя.
7. Вчені та інженери повинні знаходити шляхи зменшення забруднення довкілля.
8. Усі забруднюючі речовини можуть також впливати на клімат.
9. Парниковий ефект може підвищити температуру на землі.
10. Численні дослідження в США та в Європі показують, що шум є причиною виникнення багатьох хвороб.

### **Task VII. Total 10**

*Compose sentences using the following words.*

1. Dinner, to, thanks, for, many, inviting me.
2. It's, go, place, to, to, eat, place, but, a, good, terrible, a.
3. Just, that's, I, wanted, I, for, exchange, needed, what, to, what.

4. Do, I, least, could, was, the, it.

5. You, grateful, idea, am, for, present, your, how, have, no.

**Task VIII. Total 10**

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

1) to become	6) to blow
2) to have	7) to give
3) to take	8) to go
4) to make	9) to leave
5) to understand	10) to come

**UNIT 4**

**Glossary**

1. tiny	крихітний
2. to solidify	затвердіти
3. droplets	краплі
4. transparency	прозорість
5. liquid	рідина
6. hollow	порожній
7. buoy	буй
8. affinity	схожість
9. combustion	горіння
10. humidity	вологість

**1. Read and translate the text.**

**FOG**

Fog is simply a cloud on the ground, composed, like any clouds, of tiny droplets of water or, in rare cases, of ice crystals, forming an ice fog. Ice fogs usually occur only in extremely cold climate because the water droplets in a cloud are so tiny they do not solidify until the air temperature is far below freezing, generally 30 degrees below zero Celsius or lower.

The droplets of fog are nearly spherical; they vary in diameter between two and 50 microns and in concentration between 20 and 500 droplets per cubic centimeter of air. The transparency of a fog depends mainly on the concentration of droplets; the more droplets, the denser the fog. A wet sea fog may contain a gram of water per cubic meter; a very light fog may have as little as .02 gram of water per cubic meter.

Since water is 800 times denser than air, investigators were long puzzled as to why fogs did not quickly disappear through fallout of the water particles to the ground. To explain the persistence of fogs many early investigations concluded that the droplets must be hollow (that is, bubbles). It turns out, however, that the droplets are fully liquid and do fall at the predictable rate, but in fog-creating conditions they either are buoyed up by rising air currents or arc continually

replaced by new droplets condensing from the water vapor in the air.

The atmosphere always contains some water vapor, supplied by evaporation from different bodies of water, vegetation and other sources. The droplets condense on tiny particles of dust in the air called condensation nuclei. These are hygroscopic particles which because of their affinity for water vapor, initiate condensation at sub-saturation humidity -sometimes as low as 65 percent. The nucleus on which the water condenses, which may be a soil particle or a grain of sea salt, a combustion product or cosmic dust, usually dissolves in the droplet. Because the saturation point is lower in solution than it is for pure water, the droplets of solution tend to condense more water vapor on them and grow in size.

Given suitable conditions of temperature and humidity, the density of a fog and its microphysical properties will depend on the availability of condensation nuclei and their nature. Fogs become particularly dense near certain industrial plants because of the high concentration of hygroscopic combustion particles in the air.

## 2. COMPREHENSION EXERCISES

### 1. Find in the text the terms which describe the following:

1. a thick cloud of very small drops of water in the air close to the land or sea, that is very difficult to see through. 2. a small drop of a liquid 3. the process of energy absorption which allows a liquid to change state and become a gas. 4. the amount of water vapour in the atmosphere, at a specific temperature there is a maximum limit to the quantity of moisture that can be held by a body of air.

### 2. Answer the following questions:

#### a) comprehension questions:

1. What is fog?
2. Where do ice fogs usually form?
3. When do water droplets solidify?
4. What shape are fog droplets?
5. What is the diameter of a fog droplet?
6. What is a condensation nucleus?

#### b) true-false questions:

1. Ice fogs occur in extremely cold climates. 2. Fog does not consist of water droplets. 3. There is no water vapour in the atmosphere. 4. The droplets of solution tend to condense more water vapor on them and grow in size. 5. Water is 800 times denser than air.

#### c) multiple-choice questions:

1. *The droplets of fog are*

- a) nearly spherical
- b) square
- c) flat
- d) rectangular

2. *Fog is simply*

- a) a cloud on the ground
- b) blocks of ice
- c) water vapour

- d) a tip of a glacier
- 3. *The atmosphere always contains*
  - a) some water vapour
  - b) some mist
  - c) some ice
  - d) gases
- 4. *The density of a fog depends on*
  - a) the availability of condensation
  - b) dryness
  - c) rainfall
  - d) air pollution.

### 3. GRAMMAR EXERCISES

#### 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 on environment science 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 survival.

#### 2. Form questions to the italicized words:

- a. Planets revolve *about the sun*.
- b. The earth receives *heat from the sun*.
- c. A mass of rock debris descended *into the valley* in 1855.
- d. A sphere will produce a *circular* shadow at all angles.
- e. The first flight into space took place *on April 1961*.

#### 3. Translate the sentences. Pay attention to the modal verbs and the infinitives that follow:

- a. Volcanoes may form mountains.
- b. We can picture the solid earth's crust as a thin shell below which very hot rocks are .
- c. The attraction of the sun can also cause tides.
- d. At night the earth may become cooler than the air above. In cold countries the surface of the earth at night may become colder than 32 F.
- e. If you want to measure the temperature of the air you must place the thermometer in the shade at about 5 feet from the ground.

#### 4. Put the following sentences into the Past and Future Simple tense:

- a. We must climb this mountain in the morning.
- b. He cannot live at such a height,
- c. You must cover this distance in two hours.
- d. There are many different plants in his garden.

## 5. Read and translate the text. Give its main idea.

### THE ATMOSPHERE

The earth contains three essential parts, the lithosphere, the hydrosphere and the atmosphere. The atmosphere or air sphere covers the whole of the surface of the earth. The air consists principally of two gases - oxygen and nitrogen. There are about 21 parts of oxygen and 79 parts of nitrogen. Men and nearly all animals must have oxygen or they cannot live. In the atmosphere there is also a little carbon dioxide. Besides oxygen, nitrogen and carbon dioxide there are small quantities of other gases in the atmosphere; by far the most important is moisture or water vapour.

You must picture the earth as a ball surrounded by an envelope of air - the atmosphere. The coat is at least 50 miles thick but the upper layers are pressing down on the lower layers, so the air there is much denser and heavier while in the upper layers it is thin or "rarefied". Wherever you may be when you read this, a column of air at least 50 miles high is pressing down upon you. Although you do not feel it, this column of air is exerting a pressure equal to 15 lbs on every square inch of your body. People who climb high mountains where the air is thin find it very difficult to live and breathe. On the top of Mount Everest ( 30 000 feet) the pressure is much less than one-fifth what it is at sea-level and it is almost impossible to live at such a height even for a short time. Even at sea-level the pressure is not the same at all places.

### UNIT 5

#### Glossary

1. greenhouse	теплиця
2. to escape	зникати
3. carbon dioxide	двоокис вуглецю
4. acceptable	допустимий
5. fossil fuel	викопне паливо
6. derivatives	похідні
7. consequences	наслідки
8. devastating	руйнівний
9. inundate	заливати
10. drought	посуха

#### 1. Read and translate the text.

#### Global Warming

Like the glass panes in a greenhouse, gases in the earth's atmosphere permit the sun's radiation to heat the earth but do not permit the infrared energy radiated back out by the earth to escape into space. These gases, primarily carbon dioxide, methane, nitrous oxide, and water vapor, are responsible for maintaining a global temperature acceptable to life, and this process is referred to as the greenhouse effect. As the gases increase, more heat is trapped within the atmosphere, and the worldwide temperature edges upward.

Within the last century, the amount of carbon dioxide in the atmosphere has increased dramatically, largely because of the practice of burning fossil fuels—coal and petroleum and its derivatives. Global temperature has also increased 1° C (about 1.8° F) within the past century. Atmospheric scientists have now concluded that at least half of that increase can be attributed to human activity, and they have predicted that unless dramatic action is taken, temperature will continue to rise by between 1° and 3.5° C (between 1.8° and 6.3° F) over the next century. Although this may not seem like a great difference, global temperature was only 2.2° C (4° F) cooler during the last ice age than it is presently. The consequences of such a modest increase in temperature may well be devastating. Sea levels will rise, completely inundating a number of low-lying island nations and flooding many coastal cities such as New York and Miami. Many plant and animal species will probably be driven into extinction, agricultural regions will be disrupted, and the frequency of severe hurricanes and droughts is likely to increase.

## **2. COMPREHENSION EXERCISES**

### **1. Find in the text the terms which describe the following:**

1. a building with glass sides and a roof for growing plants in
- 2.the remains of an animal or a plant which have become hard and turned into rock.
3. mineral oil that is found under the ground or the sea and is used to produce petrol, gas, paraffin, diesel, oil, etc.
- 4.a situation in which a plant, an animal, a way of life etc. stops existing.

### **2. Answer the following questions:**

#### **a) comprehension questions:**

1. What is the role of gases in the atmosphere?
2. Is infrared energy radiated back into space?
3. What are the major gases in the atmosphere?
4. What is a greenhouse effect?
5. Is the amount of carbon dioxide in the atmosphere increasing?
6. Why is the amount of carbon dioxide in the atmosphere increasing?
7. Is human activity to blame for the increase of global temperature?
8. What will be the consequences of such a modest increase in temperature?

#### **b) true-false questions**

1. Gases in the earth's atmosphere permit the sun's radiation to heat the earth.
2. Carbon dioxide, methane, nitrous oxide, and water vapor, are responsible for maintaining a global temperature acceptable to life.
3. Worldwide temperature does not edge upward.
4. Global temperature has increased 1° C (about 1.8° F) within the past century.
5. Many plant and animal species will be thriving.

#### **c) multiple-choice questions:**

1. *Within the last century, the amount of carbon dioxide in the atmosphere*
  - a) has increased dramatically
  - b) has decreased dramatically
  - c) remained stable

- d) has not changed
- 2. *The increase of temperature can be attributed to*
  - a) human activity
  - b) living matter
  - c) natural processes
  - d) extra-terrestrial matters
- 3. *The consequences of such a modest increase in temperature may be*
  - a) devastating
  - b) very favourable for agriculture
  - c) ineffective
  - d) useful for man

### **3. GRAMMAR EXERCISES**

#### **1. 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 Kyiv this month.
3. Recently the ozone layer over the poles depletes/ has been depleting
4. She has travelled/has been travelling to the UK many times since 1999.
5. Some countries have made/have been making a lot of efforts to reduce CFCs emissions since 1992 when the Kyoto protocol was signed.

#### **2. 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.

#### **3. 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.

#### **4. Compose sentences with proposed question words.**

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

5. Particulates interfere with the ability of lungs to exchange gases. (What ...? Why ...?)



## 5. Read and translate the text. Give its main idea.

### Depletion of the Ozone Layer

The ozone layer, a thin band in the stratosphere, the upper part of the atmosphere, serves to shield the earth from the sun's harmful ultraviolet rays. In the 1970s, scientists discovered that the layer was being attacked by chlorofluorocarbons (CFCs), chemicals used in refrigeration, air-conditioning systems, cleaning solvents, and aerosol sprays. CFCs release chlorine into the atmosphere; chlorine, in turn, breaks ozone down into its constituent parts of oxygen. Because chlorine is not affected by its interaction with ozone, each chlorine molecule has the ability to destroy a large amount of ozone for an extended period of time.

The consequences of the depletion of the ozone layer are dramatic. Increased ultraviolet radiation will lead to a growing number of skin cancers and cataracts and also reduce the ability of people's immune systems to respond to infection. Additionally, the growth rates of the world's oceanic plankton, the base of all marine food chains, will be negatively affected, perhaps leading to increased atmospheric carbon dioxide and thus to global warming. Even if the use of CFCs was immediately banned, the chlorine already released into the atmosphere would continue to destroy the ozone layer for many decades. Additionally, the latest studies suggest that global warming may increase the amount of ozone destroyed.

Predicting the rate of ozone depletion is difficult. Optimists claim that if international agreements for the phasing out of ozone-depleting chemicals agreed to in Montreal in 1987 (the Montreal Protocol on Substances that Deplete the Ozone Layer) are followed, ozone loss will peak in the year 2000. With many of the world's fastest growing countries in the process of industrializing and modernizing, there is reason to believe that destruction will continue to increase well beyond that year.

## UNIT 6

### Glossary

1. swamp	болото
2. deposit	відкладатися
3. Carboniferous geological epochs	геологічна епоха кам'яного вугілля
4. coal seams	вугільні горизонти
5. volatile	леткий
6. impurities	домішки
7. coal bed	вугільний пласт
8. stratum (-a)	шар, пласт
9. combustion	горіння

### 1. Read and translate the text.

#### COAL

For a long time coal has been the principal fuel, the main source of thermal and electric energy. Now it continues to play an important part in the economy.

Coal is the product of vegetable matter that has been formed from the remains of plants and animals accumulated in swamp areas millions of years ago. Although some coals were deposited 4,000,000,000 years ago during the Silurian period, most coals were formed during the Upper and Lower Carboniferous geological epochs about 250,000,000 years ago.

Coal formation processes are similar to those of sedimentary rocks. Various coal seams can be studied and related geologically to the sedimentary rocks with which they are associated. Coal contains varying amounts of carbon and volatile material as well as impurities such as sulphur, phosphorus, incombustible rock material and moisture.

Physical characteristics of coal concern the structural aspects of the coal bed and texture. Structurally coal beds are characterized by the same irregularities in thickness, uniformity and continuity as other strata of sedimentary origin. Thickness varies greatly. Coal beds may consist of essentially uniform continuous strata or like other sedimentary deposits may be made up of bands or benches of varying thickness. The benches may be separated by thin layers of clay, shale, pyrite or other mineral matter, commonly called partings. Like other sedimentary rocks coal beds may be structurally disturbed by folding and faulting.

Many classifications of coal have been suggested: by geologic age, coking properties, commercial application and chemical composition.

There exist four main types of coal: anthracite, bituminous, sub-bituminous, lignite and brown coal. When speaking about the classification of coal based on its nature as rock mineral, scientists distinguish the following rock varieties or lithotypes such as vitrain, clarain, durain and fusain. These are the four constituents of coal.

Although the utilization of coal varies widely with rank, three general fields of coal utilization may be distinguished. They are combustion (domestic, industrial, railroads and public utilization), gasification and carbonification (high-temperature coke for metallurgical uses and low-temperature coke for producing smokeless fuel).

## **2. COMPREHENSION EXERCISES**

### **1. Find in the text the terms which describe the following:**

1. the period in the earth's history when layers of coal were formed underground. 2. a substance that is present in small amounts in another substance, making it dirty or of poor quality. 3. a chemical process in which substances combine with the oxygen in the air to produce heat and light 4. the way a surface, substance or fabric feels when you touch it, for example, how rough, smooth, hard or soft it is.

### **2. Answer the following questions:**

#### **a) comprehension questions:**

1. What was coal for a long time in the history of mankind?
2. What is the origin of coal?
3. When were most coals formed?
4. What does coal contain?

5. What classifications of coal have been suggested?
6. What are the main rock varieties?
7. What are the main rock constituents?
8. What fields of coal utilization do you know?

**b) true-false questions:**

1. Coal is the most important source of energy. 2. Coal has formed recently. 3. There are many types of coal. 4. Like other sedimentary rocks coal beds may be structurally disturbed by folding and faulting 5. Only one classification of coal has been suggested.

**c) multiple-choice questions:**

1. *Coal formation processes are*

- a) similar to those of sedimentary rocks
- b) different from all other chemical processes
- c) occur on the surface of the Earth
- d) are very fast

2. *There exist*

- a) four main types of coal
- b) only one type of coal
- c) many different types of coal
- d) two widely spread types of coal

3. *Physical characteristics of coal concern*

- a) the structural aspects of the coal bed and texture
- b) chemistry
- c) deposition
- d) distribution

**3. Which of the titles is the most suitable to the text:**

1. The Origin of Coal.
2. The Classification of Coal.
3. Coal as Fossil Fuel.
4. Coal and Its Industrial Application.

**3. GRAMMAR EXERCISES**

**1. Fill in the gaps with adjectives formed from the italicized nouns:**

1. *Power* stations are equipped with ...machines.
2. A.M. Terpigorev's investigations in mine safety were a *success*. He worked out a series of safety measures in gassy collieries. His ... research greatly improved the working conditions in mines.
3. The extensive *use* of scientific and technological achievements makes it possible to develop all branches of production. The scientists are working out new methods of mining .minerals.
4. Fire damp does much *harm* to the health of miners. It is the most... of all the gases in the mine air.

**2. Fill in the gaps in the sentences choosing the right word in brackets:**

1. There are ... causes of weathering, but ... depends on the change in temperature, (*many, much*)

2. As is known, only minerals and rocks are resistant to the action of natural waters, (*little, few*)
3. The roots of plants developed pressure which did not fracture overlaying rocks, (*little, few*)
4. A new geological map of the region will appear in a years. (*little, few*)
5. ... ..minerals undergo changes. They have already undergone transformation, (*many, much*)
6. Now there are ... sources of energy as important as atomic energy, (*little, few*)

**3. Ask questions according to the model (Special question):**

*Model:* Weathering takes place in the upper layers of the Earth's crust, (*where?*)  
*Where does weathering take place?*

1. The main cause of physical weathering is the change in temperature. (*what?*)
2. Physical weathering can best be observed in the deserts and high mountains, (*where?*)
3. Oxygen, carbon dioxide and water are the main chemical **agents** which cause the destruction of rocks, (*what agents?*)
4. Certain marine organisms accelerate the destruction of rocks by making holes in them to live in. (*how?*)

**4. Define by suffixes the parts of speech of the following words and translate them:**

create — creator — creation; elect — election; investigate — investigator — investigation; recent — recently; significant — significance; consider — considerable — consideration; encourage — encouragement; found — founder — foundation; manager — management; exist — existence

**5. Read and translate the text. Give its main idea**

**SALT**

In small quantities salt occurs almost universally. It is a minor constituent of many clays, shale, and sand and it is also present to a slight extent in many soils. It exists in the cavities and pore spaces of some rocks and thus may give rise to salt-water springs and salt wells. The largest quantities of salt, however, occur in sea water, in salt lakes, and underground in solid beds or masses termed rock salt. Rock salt is the source of most commercial salt, although there is also important production from the evaporation of waters from the ocean and salt lakes. Rock salt is the basis for extensive mining operations in many countries. Methods of winning the salt vary from underground mining of the solid beds to obtaining it by solution methods, that is, by pumping up the brine.

Not so many years ago salt was used chiefly for domestic purposes, and that use still provides the principal demand in most of the non-industrial countries of the world. However, the recent expansion of the chemical industries in Europe and the United States has led to new and greatly accelerated demands for salt, because this material has been found to be an indispensable raw material for the manufacture of a great number of chemicals. In late years the chemical industries have used from 60 to 65 per cent of all the salt produced in the United States, its major importance being its use in the manufacture of various bleaches, soda ash,

and soaps, as well as numerous other articles.

In the United States in recent years, the use of salt for livestock has ranked second, for water treatment third, and for table and other household purposes fourth. Often overlooked is its importance in dust and ice control on highways and railways.

## TEST 2

### Task I. Максимальна кількість балів: 10 (Total 10)

*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 today the environmental crisis.

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

3. I ... to read the article on the ecological development 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 10

*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 what the world's oceans can successfully sustain.
5. He is testing samples of soil now.

### Task III. Total 10

*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 leads to the end of the ...

- A) population                C) world  
B) experiment                D) civilization

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 peoples ....

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

#### **Task IV. Total 20**

*Give English equivalents of the following.*

- |                    |                 |
|--------------------|-----------------|
| 1 залізна руда     | 11 крихітний    |
| 2 осадові породи   | 12 затвердіти   |
| 3 вивержені породи | 13 краплі       |
| 4 вапняк           | 14 рідина       |
| 5 феросплави       | 15 горіння      |
| 6 калій            | 16 вологість    |
| 7 розщеплення      | 17 широта       |
| 8 сірка            | 18 збільшувати  |
| 9 півострів        | 19 переважаючий |
| 10 затока          | 20 прозорість   |

#### **Task V. Total 10**

*Compose sentences with proposed question words.*

1. Our planet is finite. (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 started functioning in 1971 (When...?)
5. In our country there are several ecological pressure and interest groups. (Where...? ... What...?)

#### **Task VI. Total 10**

*Compose sentences using the following words.*

1. futurologists, the, and, of, the, planet prospects, problems, blue, interest, scientists, and.
2. the, in, headquarters, of, the, Amsterdam, Greenpeace, are.
3. movement, this, in, 25, operates, it, countries.
4. Aim, of, the, is, Greenpeace, to, wildlife, from, wastes, toxic, protect, tests and nuclear.
5. The, of, is, and, plants, in, of, animals, danger, extinction, all, protection, of.

## Task VII. Total 20

*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, є по всьому світі.
6. Зараз ми намагаємося зменшити забруднення довкілля.
7. Кожна людина може вплинути на вирішення проблеми забруднення довкілля.
8. У Китаї з кожним роком зростає виробництво автомобілів, які забруднюють атмосферу.
9. Велосипед – найекологічніший вид транспорту.
10. Екологи розробили декларацію Взаємозалежності.

## Task VIII. Total 10

*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      |

## PART II

### UNIT 1

#### Glossary

- |                         |                      |
|-------------------------|----------------------|
| 1. exploration          | дослідження          |
| 2. adverse              | несприятливий        |
| 3. affect               | впливати             |
| 4. take into account    | брати до уваги       |
| 5. be concerned (about) | хвилювати            |
| 6. turn into            | перетворювати        |
| 7. threaten             | загрожувати          |
| 8. destroy              | руйнувати            |
| 9. meet the needs       | задовольняти потреби |
| 10. harmful             | шкідливий            |

#### 1. Read and translate the text.

##### Man and Environment

Human progress has reached the stage of intensive exploration of nuclear



and solar energy, the World Ocean and outer space. Now it is evident, however, that often man is adversely affecting the environment and his activity is sometimes fraught with fatal consequences.

It is becoming increasingly clear that man cannot and must not use his tremendous power so carelessly, infinitely interfere in nature and radically try to change it, without taking into account possible negative effects of his economic activity. The more material wealth people create, the more they realize that they cannot but be concerned about how the biosphere is changing as a result of productive activity. Current ecological research shows that man can turn oases into deserts, threatening to destroy everything on earth.

In the 19<sup>th</sup> century and even in the first half of the 20<sup>th</sup> century, material production did not require taking into account the consequences which man's interference in nature may have in the distant future, and it was not considered an objectively essential condition for the existence of the whole of mankind, whereas, in the second half of the 20<sup>th</sup> century such a consideration has become vitally important. Hence man should carefully study the impact of his activity on various components of the surrounding nature. Today this impact has reached such proportions that the biosphere's inner resources can no longer compensate for society's harmful influence on the environment, both on individual species and on all of life on earth without help from the outside.

Many ecologists consider that the disappearance of particular living species constitutes the main ecological and social problem of the day. The present day situation is fraught with the extinction of animals and plants on a scale much greater than their both natural and man-caused extinction during the preceding millions of years.

## **2. COMPREHENSION EXERCISES**

### **1. Find in the text the terms which describe the following:**

1.the act of traveling through a place in order to find out about it or look for smth in it.2.causing or ending in death; causing disaster or failure.3.the part of the earth's surface and atmosphere in which plants and animals can live.4. an area in the desert where there is water and where plants grow.5. a large amount of money, property, etc. that a person or country owns.

### **2. Answer the following questions:**

#### **a) comprehension questions:**

- a. What is the main ecological problem?
- b. What is the difference in views on nature in the 19th century and nowadays?
- c. How does the man influence on environment?
- d. What can be done to change the present-day environmental situation in Ukraine?

#### **b) true-false questions:**

1. Human progress has reached the stage of intensive exploration of nuclear and

solar energy.2. Many ecologists consider that the disappearance of particular living species constitutes the main ecological and social problem of the day.3. In the 19<sup>th</sup> century material production did not require taking into account the consequences of human activity.4. Man should not study the impact of his activity on surrounding nature.5. The biosphere's inner resources can compensate for society's harmful influence.

**c) multiple-choice questions:**

*1. Man is affecting the environment:*

- a) adversely
- b) positively
- c) beneficially
- d) actively.

*2. Human activity is*

- a) fraught with fatal consequences
- b) beneficial for nature
- c) destructive
- d) useful for all living species in nature.

*3. The main ecological and social problem of the day is*

- a) destruction of rainforests
- b) pollution of water
- c) population growth
- d) thoughtless use of natural resources

*4. Man should:*

- a) carefully study the impact of his activity on nature
- b) continue destroying the environment
- c) stop thinking about the consequences of his activity
- d) use as many natural resources as possible to satisfy his greed.

### **3. GRAMMAR EXERCISES**

**1. Make collocations with the following words and translate them:**

- |              |             |
|--------------|-------------|
| tremendous   |             |
| uncontrolled |             |
| harmful      |             |
| ecological   | impact      |
| irreversible |             |
| adverse      |             |
| intensive    |             |
| current      |             |
| purposeful   |             |
| essential —  | exploration |
| outer space  |             |
| careful      |             |
| planned      |             |

main  
depleted  
valuable                      species  
individual plant  
and animal

safe  
natural  
thermal                      environment  
ecological  
social

## **2. Rewrite the sentences to include a participle clause instead of a relative clause.**

**Example:** *Can you see the woman who's dressed in red and sitting in the corner?*

*Can you see the woman dressed in red sitting in the corner?*

- a. People who live in blocks of flats often complain of loneliness.
- b. Letters that are posted before 5 p.m. should arrive the next day.
- c. The train that is standing on platform 5 is for Manchester.
- d. Firemen have rescued passengers who were trapped in the accident.
- e. It took workmen days to clear up the litter that was dropped by the crowds.
- f. They live in a lovely house that overlooks the river Thames.

## **3. Translate into English paying attention to the Participles.**

- a. Долини, прорізани ріками, спочатку дуже вузькі.
- б. Континентальні платформи – це підняті частини поверхні літосфери.
- в. Вітер, насичений гострими піщинками, стирає тверді породи.
- г. Коли стало холодно, вода в тріщинах замерзла.
- д. Рівнини, які зустрічаються на краях континентів, називаються прибережними рівнинами.
- е. Долини, які прорили льодовики, широкі.
- ж. Вода, що тече, має могутню силу, особливо після сильного буревію.

## **4. Translate paying attention to the Passive Voice.**

1. Iron is found in veins and beds of the earth's crust.
2. All minerals are found in rocks.
3. Diamonds are found only in a volcanic rock called Kimberlite.
4. It has been estimated that 95 per cent of the crust is composed of igneous rocks.
5. Both methods have been used and have shown that the temperature of magma vary from 600 to 1200 °C.
6. Before the eruption of Ratinai the floor of this valley had been covered by a white-hot mass of volcanic sand.

## 5. Read and translate the text. Give its main idea.

### Preserving the environment

Recently more and more attention has been focused on the problem of preserving the environment. Over the past thirty years or so the quality of many people's lives has deteriorated in some respects because of technological progress. Those people living near airports are constantly attacked by the noise of increasingly larger and more powerful jet aircraft taking off and landing. We have ugly buildings which have appeared in towns and cities. Some of these are blocks of flats high-rise buildings built because of the high price of land.

The motor car has been responsible for many changes in the environment. On the one hand it has brought mobility to millions of people but on the other it has led to the construction of more and more noisy and dangerous roads and has polluted the atmosphere with exhaust fumes.

While towns and cities have become larger and uglier and more densely polluted, the rural areas have lost most of their population owing to the need for fewer workers in agriculture. The countryside has also been affected by the large-scale use of insecticides. For one thing the killing of insects has resulted in a loss of balance in the ecology. Insects, although a nuisance to farmers, provide food for birds. Many people are afraid that fruit and vegetables sprayed with chemicals may have some poisonous effect upon the people who eat them.

Recently, however, certain counter measures against the destruction of the environment have been introduced. One of the first acts of Parliament to counter pollution was Clean Air Act, which opened the way to smokeless zones in large towns and cities. This followed a very bad winter in which many people with bronchial complaints became very ill or died through the effects of a mixture of smoke, fog and fumes known as "smog". Rivers which are fouled up with industrial chemical waste are now being cleaned, and fish which could not live there a few years ago can be caught again.

## UNIT 2

### Glossary

1. shifting sands	бархани.
2. there are also times	бувають такі випадки
3. the identification of rocks involves much more properties	визначення
порід потребує більше даних	
4. relative weight of the rock	відносна вага породи
5. shale	сланець
6. ash	попіл
7. cinder	зола
8. well	свердловина

### 1. Read and translate the text

## The nature of rocks

To the geologist, rock is the natural, solid material that makes up the earth. The definition of a rock means solid at temperatures which normally occur in the earth's crust.

In speaking of rocks, geologists use the word *solid* in its technical sense. A solid is a matter that is not a liquid or gas. What the geologists would sometimes call *solid rock* might seem strange to you. The wet sands on the beach and the shifting sands in the desert are a solid and a rock. This is also true of the layers of mud and muck in the swamps, or the ash and cinders from volcanoes. They are also rocks.

The third word, *material*, brings no additional problems to the definition of a rock. But it should be noted that materials in the crust of the earth may have two distinct origins: *organic and inorganic*. Most of the material in the crust of the earth is inorganic. This means that it is in no way related to life or living things. Lava pouring from a volcano makes an excellent example of inorganic material. So do the great masses of granite pushed miles into the air.

Some rocks are organic – made up by living things. Coal and oil deposits, for example, are the remains of ancient plants. Oil, you may say, is a liquid and therefore is not a rock. However, there are no great underground lakes of oil as some people imagine. The oil is usually soaked up in the pores of sand and other rocks. Under special conditions it drains into wells from where it is pumped to the surface. Millions of gallons of oil are locked up in rocks, especially in the oil shales. Asphalt is another organic rock.

Less well-known are the rocks which have been formed from the remains of sea animals. Shells cemented together form several kinds of limestones. Sometimes these are the shells of microscopic animals, sometimes they are much larger shells.

Coral is another kind of rock made by living things. Coral animals take lime from the sea water and build it into reefs in which millions upon millions of coral animals live. Islands of coral dot the South Pacific.

Diamonds are not rocks, even though they are found in the crust of the earth.

## 2. COMPREHENSION EXERCISES

### 1. Find in the text the terms which describe the following:

1. *the study of rocks*; 2. *basis for life*; 3. *texture, colour, hardness, relative weight*.

The study of rocks is *petrology*. It is a difficult science, for most rocks are harder to identify than birds, flowers or trees. But the study is important, for rocks and minerals yield the materials that make modern civilization possible. The rock which forms soil is the basis for life on land. Dissolved minerals taken from the rocks by running water make the sea salty and make ocean life possible to exist.

The identification of rocks is easy when the rocks are made of minerals and when the minerals are large enough to be identified. When the rock is fine-grained and when the minerals all look alike, as they do in some of the dark rocks, it takes

skill to identify them. The geologist will often cut a piece of rock with a diamond saw and polish its surface until it is perfectly smooth. He then cements the smooth surface to a glass slide, and polishes the rest of the rock until it is paper thin. This thin layer of rock is examined under a microscope, using Polaroid light. As the light passes through the minerals in the rock, it is altered, producing beautiful colors. These colors depend on the kind of minerals and on the angle at which the crystals have been cut. Such patterns aid much in the process of identification.

The identification of rocks involves much more properties. The texture, color, hardness and relative weight of the rock can also be used as clues. The geologist also looks for the geologic structures in which the rocks occur. Certain rocks are found only in volcanoes, others in caves. Still others are more likely to be found in valleys than on high rides.

## **2. Answer the following questions:**

1. What is rock to the geologist?
2. What is solid rock?
3. What rocks can be formed from the remains of sea animals?
4. Is oil a rock?
5. Are diamonds rocks?
6. When is the identification of rocks easy?
7. What can be used as clues in identification of minerals?

## **3. Give the Ukrainian for:**

- a) man-made, smooth, alive, common, relative, liquid, to polish, desert, pattern, mixture, cement, shale, coal, deposit, to exist, to identify;
- b) sea animal, mineral like substance, diamond saw, paper thin, glass slide, ocean life;
- c) as, for, however, still, though, until.

## **4. Give the English for:**

Пустеля, родовище, суміш, рідина, існувати, болото, полірувати, штучний, гладкий, глинисті сланці, вугілля, звичайний, бархани, хоч, однак.

## **5. Find synonyms among the following words:**

Man-made, to look for, layer, to change, help, strange, artificial, bed, to search for, odd, stratum, aid, to alter, pure, to eliminate, dirty, to remove.

## **6. Find antonyms among the following words**

Alive, smooth, wet, possible, fine-grained, likely, thin, rough, course-grained, unlikely, thick, dead, dry, impossible, organic, ancient, inorganic, modern.

## **7. Form nouns from the following verbs:**

To mix, to consider, to alter, to exist, to produce, to identify, to recognize.

## **3. GRAMMAR EXERCISES**

### **1. Complete the conversation using the infinitive or the –ing form:**

**A:** Good morning, madam. Can I 1) ..... (help) you?

**W:** Yes. I'd like 2) ..... (book) a holiday please.

**A:** Certainly. I must 3) ..... (ask) you a few questions. Now... where would you like 4) ..... (go)? How long are you going 5) ..... (stay)? Would you prefer 6) ..... (have) a relaxing beach holiday or 7) ..... (go) sightseeing? Which countries are you interested in 8) ..... (visit)? What means of transport do you prefer?

**W:** Well, young man. I don't know where 9) ..... (go) or how long 10) ..... (stay). I hate 11) ..... (go) to the beach and I don't enjoy sightseeing. I don't want 12) ..... (visit) any foreign countries because foreign food makes me 13) ..... (feel) ill. As for means of transport, I'm too frightened 14) ..... (fly) in an aeroplane. I hate 15) ..... (go) on boats, I don't like 16) ..... (travel) by train and 17) ..... (travel) on a coach makes me 18) ..... (feel) sick.

**A:** Well madam, I don't know what 19) ..... (suggest). I don't want 20) ..... (appear) rude, but I really think you should 21) ..... (stay) at home!!!

## 2. Cross out the unnecessary word:

1. He went to the florist's for to buy a bouquet of flowers.
2. Emily is not so talented enough to enter the competition.
3. I don't go for camping very often.
4. Mrs Keaton made her daughter to stay at home during the holidays.
5. I hope that to hear from you soon
6. We saw Helen to get into her car and dive away at top speed.

## 3. Translate into English using the Infinitive.

1. Я радий, що працюю разом з вами.
2. Я радий запросити вас на вечір.
3. Я хочу надіслати телеграму.
4. Я хочу, щоб мене відправили на конференцію.
5. Забути цей день було неможливо.
6. Вчитися наполегливо – завдання кожного учня.
7. Допомогти йому тепер – значить врятувати.
8. Вона першою розповіла мені про це.
9. Ми взяли таксі, щоб приїхати на вокзал вчасно.
10. У цьому тексті надто багато нових слів, щоб зрозуміти його без словника.

## 4. Translate the sentences paying attention to the Gerund.

- a. In speaking of rocks, geologists use the word "solid" in its technical sense.
- b. On cooling or through reactions with the wall rocks the metals are deposited.
- c. Astronomers get a fairly good idea of the chemical composition of the universe by studying the light from the stars and the sun.
- d. Understanding what is meant by matter is the first step in understanding rocks.
- e. In spite of the difficulty in defining rocks, most rocks are easily recognized when you see them.
- f. By comparing the textures of the fresh and altered rock it becomes evident that they were once alike and parts of the same body.

## 5. Read and translate the text. Give its main idea.

### THE SEA

The sea is generally accepted by scientists as the locale of the origin of life on earth. Without the sea, life as we know it today, could not exist. The functions of the sea in relation to earth life are numerous. It acts as a great thermostat and heat reservoir, levelling out the temperature extremes which would prevail over the earth without its moderating influences. It is the earth's water reservoir and supply without which the continents would be lifeless deserts. The sea provides a means for the least expensive form of transportation known to man. It is a playground for mankind; a major source of his food as well as a dumping ground for his garbage. And the sea is a major storehouse of the minerals which serve as the foundation of an industrial society.

As a source of minerals, the sea has been little exploited relative to its potential. The major reason for this default are a lack of knowledge concerning what is in the ocean and of the advantages of exploiting marine mineral deposits, the absence of a technology to economically exploit the deposits, and no pressing need, either economic or political, to exploit them at the present time.

In regard to mineral resources, the sea can be divided into five regions: marine beaches, sea water, the continental shelves, surficial sediments, and the hard rock beneath the surficial sea-floor sediments. A variety of minerals are presently being extracted from the first three regions of the ocean. Very little is known about the fifth region, that of the hard rock underlying the soft ocean floor sediments. No sample of this rock has ever been obtained for chemical analysis although the thickness of the layer between the unconsolidated sediments and the mantle of the earth averages about 3 km. The emphasis consequently, will be on the fourth region the surficial sea-floor sediments. Such emphasis is proper for it is the fourth region that has recently been found to contain vast mineral resources of great economic promise. In addition, it is a region from which few, if any, minerals are now being taken.

## UNIT 3

### Glossary

ran out of	вичерпуватись (про ресурси )
take for granted	приймати за належне
generate	виробляти
item	пункт у списку
nuclear power station	атомна електростанція
radioactive	радіоактивний
obvious	очевидний
percentage	процентний склад
consequence	наслідки



fertilizer  
red tape

добрива  
бюрократія

## 2. Read and translate the text

### Energy sense makes future sense

The world is running out of oil, and energy experts believe that there could be serious shortages in ten years' time. Not only is each individual using more oil than ever before, as the standard of living in industrialized countries rises, but the population explosion means that each year many more people will be using oil in some form or other. Until recently we took oil for granted: it seemed it would never stop flowing. It was so cheap and plentiful that the whole world came to depend on it. Governments neglected other sources of energy: electricity was generated from oil and power stations were fired by it. It found its way into many of the products of light industry. Many people are surprised when they learn how many items in their homes contain oil.

The increase in the price of oil has brought the world to its senses. Governments are searching for a suitable alternative, but so far in vain. They are considering how they can make better use of the two other major fuels, coal and natural gas, but they have found that neither can take the place of oil in their economics. In recent years there has been a growing concern for the environment and coal is not a popular fuel with environmentalists. Coal mines are ugly, and their development has a serious effect on animal and plant life; coal itself is a heavy pollutant. Natural gas, the purest of the three fuels, is also the most limited in supply.

The answer would seem to lie in nuclear power stations. They need very little fuel to produce enormous amounts of power and they do not pollute the atmosphere. Their dangers, however, are so great and the cost of building them is so high that some governments are unwilling to invest in them. Not only could one accident in a single nuclear power station spread as much radio-activity as a thousand Hiroshima atom bombs, but the radio-active waste from these stations is extremely dangerous -for one hundred thousand years. So is there no possible alternative to nuclear power?

## 2. COMPREHENSION EXERCISES

### 1. Choose the best answer in the following:

- 1 The world
  - a) has run out of oil
  - b) did run out of oil
  - c) Will never run out of oil
  - d) Is running out of oil
2. The main disadvantage of coal is that

- a) it is not expensive
- b) there is not enough of it c)it is a heavy pollutant d)it is too easy to mine
- 3. Natural gas cannot replace oil because
  - a) supplies are limited
  - b) it is a heavy pollutant
  - c) it is very expensive
  - d) it is dangerous to use
- 4. Nuclear power stations
  - a) pollute the atmosphere
  - b) often explode
  - c) produce extremely dangerous waste
  - d) are inexpensive to build.
- 5. We should save energy by
  - a) driving faster
  - b) not stop at traffic lights
  - c) having our cars regularly serviced d) driving slowly in traffic jams.

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

to involve	satisfactory, satisfying a requirement
to convert	for a long line or series
possessing	length in time
predominately	smb. smth. with, supply or provide
to furnish	to be superior in number, place, influence, strength
span	course or movement of events
currently	to be still present after a part has gone
to remain	to change from one form to another
long-range	to own, to have
adequate	to be caught or mixed up

**3. Read, translate and memorize the following special terms.**

Microorganism, biomass, sunlight, fossil fuel, steam, coal, oil, wastes, photosynthesis, food herbivorous, ecosystem, substance, muscle, virgin, lubricant.

**4. Translate into English.**

- 1.Води озера Байкал – найбільшого прісноводного озера у світі – постійно забруднюються шкідливими викидами паперово-целюлозного комбінату.
- 2.Величезна кількість енергії потрібна для випуску алюмінію.
- 3.Крім того, більша частина алюмінію добувається з бокситових покладів, які знаходяться у тропічних країнах.
- 4.Величезні площі вологих тропічних лісів знищуються зараз тільки заради видобутку бокситів.
- 5.Викопне паливо, яке дуже забруднює повітря, у майбутньому буде замінено

новими чистішими видами палива.

6. Кількість сміття у великих містах катастрофічно збільшується, і з цим потрібно боротись.

### 3. GRAMMAR EXERCISES

#### 1. Join a sentence from column B to one from column A

*The sentence must support the same argument. Use the construction "...not only...but..." Note the position of "not only" after the verb "to be", "but" before other verbs.*

Example: Riding a bike is cheap. It saves petrol.

Riding a bike is not only cheap, but it saves petrol.

Column A	Column B
Oil is our main source of	Coal mines are ugly
Coal is a heavy pollutant	many items in the home
Riding a bike saves	it wastes petrol
Natural gas is cheaper	it will save you a fortune
Fast driving causes	it is the cleanest of the
Sharing a car with	it keeps you healthy

#### 2. Fill the gaps with a preposition and an -ing form.

About like	having remembering
Without by	making being stung
With of	buying arriving
At for	asking going

- I got into trouble..... at school late.
- You can lose weight.....exercise.
- How..... out for a meal tonight?
- How dare you take my money..... me?
- I'm fed up.....no money.
- This machine is used.....pasta.
- I'm hopeless.....people's names.
- I'm thinking.....a new car. A Renault, maybe.
- Thank you .....to see me.
- Yuk! Monday morning! I don't feel.....to work!
- I'm always afraid..... by a wasp.

#### 3. Translate the sentences paying attention to the Infinitive.

- These deposits are said to be of magmatic origin.
- The moon is believed to be composed of material similar in composition to the earth's mantle.
- A zone of glassy rock is believed to be just beneath the sima at the upper edge of

the mantle.

d. The salt water is believed to be sea water that filled the openings in the rocks when sediments were laid down.

e. The gold is believed to have come from a deep-seated magmatic source.

f. Certain valuable lead and zinc deposits generally are believed to have been concentrated by ground water and to have no connections with igneous processes.

**4. Translate into English paying attention to the Future Tenses.**

1. Спеціалісти стверджують, що використання вугілля у промисловості буде зростати.

2. Питання енергетичної кризи часто обговорюється науковцями.

3. Якщо людство не перестане забруднювати навколишнє середовище, через декілька років нам нічим буде дихати.

4. Згідно з песимістичними прогнозами потепління клімату матиме величезний вплив на життя людей у майбутньому.

5. Увага до невеликих ГЕС буде зростати, тому що потужностей великих станцій не достатньо для забезпечення усіх енергетичних потреб країни.

## 5. Read and translate the text. Give its main idea.

### Oil Development in Alaska

Brooks Range, the north-western extension of the Rocky Mountains, crosses Alaska somewhat north of the Arctic Circle. The range reaches altitudes of around 3 000 m near the eastern boundary of Alaska but is progressively lower toward the west. Rock structure in Brooks Range generally trends westwards. The rocks, which are of many ages, are intensely folded and faulted. The range is considered to have little potential for oil or gas. It forms the south flank of a huge westward-trending geosyncline that extends northward across the Arctic slope and has its northern flank somewhere under the Arctic Ocean. The older, complex rocks of Brooks Range underlie the younger rocks of the foothills and coastal plain provinces to form the basement rocks of the geosyncline. The depth to basement at this axis of the geosyncline may be as much as 8 000 m, but at Barrow, north of the axis, where the basement is rising toward the north flank, the depth is only about 800 m.

The potential oil-bearing and gas-bearing rocks are those that lie on the basement rocks and fill the geosyncline. They range from Mississippian age up to Cretaceous and, east of the Colville River, include some Tertiary rocks. Over the sediments that fill the geosyncline in the coastal plain province is a more or less continuous blanket of recent silt, up to about a hundred metres thick, which is called the Gubik formation. It obscures the underlying rocks from direct observation.

All of northern Alaska is underlain by continuous permafrost; the ground is permanently frozen except for a layer at the surface several centimetres to about a metre thick that thaws in the summer. The thickness of the permafrost reaches at least 400 m and in places may be even thicker. The Gubik formation therefore with few exceptions is frozen throughout its depth.

### TEST 3

#### Task I. Максимальна кількість балів: 10 (Total 10)

*Choose the correct word to complete the sentences.*

- Energy ... by the Sun.  
A) was produced      C) has been produced  
B) is produced      D) will produce
- A new campaign for energy survival ... at the end of the 20<sup>th</sup> century.  
A) launch      C) will launch  
B) is launched      D) was launched
- Kerosene ... mainly a fuel for lamps.  
A) was considered      C) will be considered  
B) is considered      D) was being considered
- Muscle power ... with machines in the industrial countries.

- A) was replaced      C) were replaced  
B) was being        D) replaces  
replaced

5. Many pipelines ... by the federal government by the end of 1950<sup>th</sup>.  
A) were sold            C) will be sold  
B) was sold            D) had been sold

**Task II. Total 20**

*Give English or Ukrainian equivalents of the following.*

1. Fossil remains
2. Energy consumption
3. Widespread use
4. Human and animal labor
5. На душу населення
6. Споживання енергії
7. Природний газ
8. Мікроорганізми
9. Біомаса
10. Фотосинтез
11. Екосистема
12. Тверде паливо

**Task III. Total 15**

*Make the following sentences passive and translate them.*

1. Complex industrial societies use the most energy.
2. The Sun provides energy.
3. Early civilizations used human muscles, animal muscles and fire as sources of energy.
4. The Chinese used some gas and oil as early as 1000 B.C.
5. Today we use about 2,000,000 kilometers of natural gas distribution pipelines.

**Task IV. Total 5**

*Compose questions with the following question-words.*

1. After the Second World War the U.S. government sold lots of pipelines to private corporations. (When?)
2. Natural gas is used in many parts of the developed world. (Where?)
3. Natural gas is being used for home heating and for industrial purposes at present. (What ... for ...?)
4. The main use of oil was to make kerosene, a fuel for lamps. (What?)
5. India experiences wood shortages just as the North America. (Who?)

**Task V. Total 20**

*Translate the following.*

1. Більше 2 млрд. банок напоїв Пепсі-Коли було випущено в США в 1963р.
2. Більша частина алюмінію видобувається в тропічних країнах.
3. Подивіться, що мені дали.
4. Мене запросили до театру на прем'єру.
5. Деревина перевозиться на фабрики вантажівками, потягами та водним транспортом.

**Task VI. Total 10**

*Compose sentences with the following words.*

1. Are, in, there, fact, a, items, few, of, that, cannot, recycled, be, domestic, waste, only.
2. Energy, for, the, process, paper-making, generated, can, be.
3. Urban, were, revolution, Europe, and, before, the, America, most, industrial.
4. The, of, us, gas, did, natural, rapidly, as, as, oil, of, use, the, increase, not, use.
5. Apartment, I, my, was, new, to, a, friend, helping, move, to.

**Task VII. Total 20**

*Translate in writing without a dictionary (Time for the task – 10 min).*

**The History of Nuclear Energy Development**

The first controlled fission of an atom occurred in Germany in 1938, but the United States was the first country to develop an atomic bomb. In 1945, the U.S. military dropped atomic bombs on the Japanese cities of Hiroshima and Nagasaki. The incredible devastation of these two cities demonstrated the potential of nuclear energy for destruction and for peaceful uses. For many years, most atomic research involved military applications of nuclear energy as bombs and as power sources for ships. During the 50 years following World War II, the two major military powers of the world – the United States and the Soviet Union – conducted secret nuclear research projects related to the building and testing of bombs. This continued to be a primary focus of nuclear research until the recent changes in the former Soviet Union, which led to a world in which nuclear war is much less of a concern. A legacy of this military research is a great deal of soil, water, and air contaminated with radioactive material. Many of these contaminated sites have come to light recently and require major clean up efforts. The U.S. Department of Energy has begun to clean up the pollution created by its weapons production activities.

**UNIT 4**

## Glossary

1. Shortage	нестача
2. Shopping basket	кошик для покупок
3. Scarce	рідкісний
4. Sliced	нарізаний скибками
5. Wrapping	обгортка
6. Card board	картонна коробка
7. Cereals	крупа
8. Loose	незапакований
9. Reuse	повторно використовувати

## 2. Read and translate the text

### Waste not, want not

Can you believe it? There's a world paper shortage, there's a national bottle shortage, and we're running out of raw materials like timber and tin or so the paper say. Well, I've just emptied my shopping basket after my weekly shopping trip and it was full of things made from these scarce materials. Half of what I'd bought I threw away at once: all those unnecessary paper bags, plastic bags, fresh wrapping paper and old newspapers they put the food in nowadays.

You can't even buy a loaf of bread without getting a piece of paper round it - that's if you can find a loaf that hasn't already been sliced and then wrapped. Supermarkets are the worst offenders. Pieces of meat are put on small plastic trays and then wrapped in polythene, cartons of cream are put in extra paper bags at the check-out point, fruit and vegetables are packed in plastic bags, cheese is sold wrapped in polythene and eggs come in special cardboard or plastic boxes. Some things are double-packed by the manufacturers: tins of fish come in small cardboard boxes, breakfast cereals are packed in plastic bags inside cardboard containers.

All this packaging makes shopping cleaner and more convenient, but at what cost? Every time you throw away a paper bag you're throwing away part of a tree - and trees don't grow overnight! At this rate there soon won't be any trees left, and then what shall we do?

Perhaps we'll learn to do what my mother did. She used to keep a store of paper bags in a kitchen drawer and use them again and again for her shopping. Most goods were sold loose those days and the shopkeeper weighed out the amount you wanted.

Why can't manufacturers today cut down on the amount of packaging they use? I know they say their goods are double - and even triple - wrapped because their customers prefer this, but have they actually asked the customers what they think? Someone must pay for all that packaging and I suspect it's you and me. Given the choice the average housewife would rather get food than plastic bags for her money.

Of course, liquid goods have always been sold in bottles, jars or cans, but



why can't we use these containers more man once? There have been attempts to replace the familiar British milk bottle with cartons, but in most parts of the country the milkman still delivers our milk in bottles and collects the empties the next day. Why don't we re-use our wine and beer bottles too?

In fact, when I was a little girl, I used to get extra pocket-money by returning bottles to the shops for a penny each. If we re-used all our bottles we would save on the raw materials and energy needed to make new ones.

## 2. COMPREHENSION EXERCISES

### 1. Answer the following questions:

- 1 What does Mrs. Holt find difficult to understand?
2. How does she think the following can help save raw materials:
  - a) manufacturers
  - b) housewives
  - c) shops
  - d) local councils
  - e) the government?

### 2. Match the saying with the statement.

Prevention is better than cure	The price of raw materials has risen, we had a bad harvest and we have had a serious earthquake
It never rains but it pours	We might never have discovered that cows produce good milk when fed on cardboard, if there hadn't been a shortage of cattle food
Actions speak louder than words	We should enjoy our raw materials while we have them, and not worry about the future
Necessity is the mother of invention	the government should supply money for collecting tin and paper and not just offer encouragement
Live now, pay later	it is better to stop manufacturers wasting valuable raw materials than try to salvage them from rubbish

### 3. Complete the following passage using one of the following: *Down, out, up*

When I sorted.....my rubbish, I found it contained a lot of paper and tin. I had read that world supplies of raw materials were being used .....and that the price of goods could be brought.....if paper and tin were recycled. We

suggested this to our local council, but they turned.....our proposal. They said that experiments elsewhere had turned.....too expensive because of the cost of collections.

### 3. GRAMMAR EXERCISES

**1. The following passage describes the production of paper. Put the words in brackets into the appropriate form, using the passive when necessary:**

#### From trees to pulp

The trees ... (transport) to the paper mill by lorry, train or ship. First the bark ... (remove). This ... (burn) at a later stage so that energy can ... (generate) for the paper-making process. Then the logs ... (cut) into chips and ... (cook) under high pressure for four hours to make paper pulp. Next the pulp ... (bleach) to ... (remove) dirt spots and ... (improve) its ageing properties.

#### From pulp to paper

The manufacturing process also ... (require) chemicals to strengthen the paper.

The fibres ... (mix) with additives and ... (dilute) with water. This mixture ... (spray) onto the paper machine where it ... (press), then ... (dry) and ... (wind) onto one large reel which ... (weigh) up to 20 tons. Each part of the process ... (control) by computers which automatically ... (correct) any errors.

**2. Look at the notes, write a report .Use the passive:**

#### Yet again we experienced an earthquake last night

A remote area in northern Spain/shake/by an earthquake last night. Several villages/totally destroy/and many people/leave/homeless. The total extent of the damage/still not known/ but luckily few casualties/report as people/warn/of the danger earlier and many villages/ evacuate. Victims of the earthquake now/offer/shelter in local churches/where food and drink/provide.

#### 3. Translate the sentences paying attention to the Passive Voice

a) The exploration of the northernmost section of the island was interfered with by heavy ice conditions.

b) The fact that the southern section of the sea along the Murman coast is ice-free is accounted for by the warm marine current.

c) The reports of the students on the results of their research were listened to attentively.

d) The results of the well borings for oil are commented upon in today's newspaper.

e) France has been noted for its well-balanced economic life.

f) Finland is a country where distinct regional contrasts are seldom met with.

g) The Crimea is noted for the beauty of its southern shore and its subtropical climate.

#### 4. Translate into English

1. На цьому заводі виробляють сільськогосподарські машини.

2. Ця фабрика була збудована ще 100 років тому.

3. Підручники продаватимуться завтра.
4. Коли було видано цю книжку?
5. Вам заплатять за цю роботу завтра.
6. Її запросили виступити перед школярами ще раз.
7. Це питання зараз обговорюється на зборах.
8. Міст буде збудовано восени.
9. Про цю подію багато говорять.
10. Що зараз будеється у місті?

## 5. Read and translate the text. Give its main idea.

### “Acid deposition”

**Acid deposition** is the accumulation of potential acid-forming particles on a surface. Acids result from natural causes, such as vegetation, volcanoes, and lightning; and from human activities, such as coal burning and use of the internal combustion engine. (See figure 1). These combustion processes produce sulfur dioxide ( $\text{SO}_2$ ) and oxides of nitrogen ( $\text{NO}_x$ ). Oxidizing agents, such as ozone, hydroxyl ions, or hydrogen peroxide, along with water, are necessary to convert the sulfur dioxide or nitrogen oxides to sulfuric or nitric acid. Various reactive hydrocarbons (HC) encourage the production of oxidizing agents. The acid-forming reactants are classified as wet or dry. Wet reactions occur in the atmosphere and come to earth as some form of precipitation: acid rain, acid snow, or acid dew. Dry deposition occurs with the settling of the precursors of the acid on a surface. An acid does not actually form until these materials mix with water. Even though the acids are formed and deposited in several different ways, all of these processes usually are referred to as **acid rain**.

Acid rain is a term for rain, snow, sleet, or other wet precipitation that is polluted by such acids as sulfuric acid and nitric acid. Acid rain harms thousands of lakes, rivers and streams worldwide, killing fish and other aquatic life. Scientists believe it also damages buildings, bridges, statues, forests, and soil

Acid rain is a worldwide problem. It can cause damage in several ways. Buildings and monuments are often made from materials that contain limestone (calcium carbonate,  $\text{CaCO}_3$ ), because limestone is relatively soft and easy to work. Sulfuric acid ( $\text{H}_2\text{SO}_4$ ), a major component of acid rain, converts limestone to gypsum ( $\text{CaSO}_4$ ), which is more soluble and is eroded over many years of contact with acid rain. Metal surfaces can also be attacked by acid rain.

## UNIT 5

### Glossary

1. destined	призначений
2. trigger	викликати
3. ultimately	врешті-решт
4. swamp	болото
5. flood	повінь, затоплювати

6.surge	підніматися
7.devastating	руйнівний
8.predict	проорокувати
9.brakes	гальмо
10.subsequent	наступний

## 1. Read and translate the text.

### Closer to the melting point.

Half of Greenland and vast areas of Antarctica are destined to melt if global warming continues at the same pace until the end of the century, scientists warned. Their research shows that the loss of so much ice will trigger dramatic rises in sea levels, ultimately swamping low-lying regions of England – Essex, Lincolnshire and Norfolk – and threatening the flood defences of cities such as London, Liverpool and Bristol. The last time so much ice was The warning comes from climate scientists lost from the poles – in a period between ice ages 129,000 years ago – global sea levels rose by four to six metres.

Experts believe many coastal regions would suffer long before sea levels rose significantly, because even a minor rise will make storm surges more devastating and increase the risk of flooding. A rise of one metre would in effect close the port of London as the Thames barrier would need to be raised for 300 days a year to protect the city, according to one scientist.

The warning comes from climate scientists who combined historical records of Arctic and Antarctic ice melting with advanced computer models capable of predicting future environmental conditions. They found that if nothing is done to put the brakes on climate change, Greenland, the west Antarctic ice sheet and other expanses of polar ice will be warmed beyond a “tipping point” after which their melting is inevitable.

If temperatures do rise as the scientists predict, the ice at the poles will not be lost immediately. Enough ice is likely to melt within the next 100 years to raise sea levels by a metre, but ultimately the fresh water pouring into the North Atlantic would slow down the Gulf stream, which bathes Britain in warm water from the tropics, by a quarter.

The major concern is that unless climate change slows down significantly, the eventual loss of polar ice and subsequent six-metre rise in sea levels will be unavoidable.

The melting 129,000 years ago was driven by natural processes. This time greenhouse gas emissions have been warming the planet since the industrial age. Carbon dioxide levels in the atmosphere stand at around 380 parts per million, but many scientists believe they will rise to 550ppm by the middle of the century.

## 2. COMPREHENSION EXERCISES

### 1. Answer the following questions:

1. What do scientists warn about?
2. What does their research show?

3. What will happen to low-lying parts of England?
4. What will happen to Greenland?
5. How long will it take the polar ice to melt?
6. Will the Gulf Stream slow down?
7. What will be the concentration of CO<sup>2</sup> in the atmosphere?

## 2. Match the word with its synonym

Vast	destroying
Trigger	problem
Devastating	bog
swamp	big
bathe	ultimate
concern	to start
eventual	wash

## 3. Say whether these statements are true or false according to the text:

1. If the climate warming continues, vast areas of Atlantic will be flooded.
2. The eventual loss of polar ice will be unavoidable.
3. Greenland will freeze.
4. The ice at the poles will be lost immediately.
5. The warning comes from linguist scientists.

## 4. 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.

## 3. GRAMMAR EXERCISES

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

We might go for a walk tomorrow. ...., we will take the dog with us.

The guests will arrive soon. ...., we will greet them at the door.

I am going to phone Nick in a minute. .... him, I want you to leave the room.

I might visit Vicki tomorrow. .... her, I will buy her a present.

The bus comes at eight o'clock. ...., we will get on it.

She might invite us to her party. .... us, we will go.  
The film will start soon. ...., I will record it.

**2. Rewrite the following as conditional sentences:**

You need to go to Egypt to see the Sphinx.

If .....

John didn't leave early so he didn't get there on time.

If .....

She used factor 12 suntan lotion as she gets sunburnt easily.

If .....

The fax machine is broken so I'll have to send it by post.

If .....

More tickets need to be sold, otherwise the concert will be cancelled.

If .....

You'll have trouble selling your house if you're not prepared to accept a lower offer.

Unless.....

He cancelled his trip because he had run out of money.

If .....

He lost his job. He's unemployed now.

.....

**3. 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).

#### 4. Translate into English.

1. Якби люди менше втручалися у природні процеси, клімат не змінювався б 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 теплішим.
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 будуть прийняті міри щодо зменшення викидів парникових газів, озоновий шар може зникнути.
8. На вашому місці я б завершив цей проект якнайшвидше.
9. Наші діти й 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.

#### IV Read and translate the text. Give its main idea.

##### “Greenhouse effect”

In the 1960s Professor Bert Bolin predicted that the "greenhouse effect", caused by an increase in the amount of carbon dioxide (CO<sub>2</sub>) in the atmosphere would lead to important changes in the Earth's climate. At the time his predictions were regarded as science fiction. But it is now generally agreed that the amount of carbon dioxide in the atmosphere will double from 0.03% to 0.06% in the next 50 years and that temperatures worldwide will rise by 2° Celsius.

Although a temperature rise of 2° may not seem significant, the local effects may be much greater: in Polar Regions a rise of 10° by 2025 is expected and in Northern Europe a rise of 4°. Indeed the first effects will be felt before the end of the century - perhaps they are already being felt...

But how does the "greenhouse effect" operate and why should such a tiny proportion of CO<sub>2</sub> have such a harmful effect? When living creatures breathe out or when things are burned, CO<sub>2</sub> enters the atmosphere. Until recently all of this was absorbed by plants, which converted it back into oxygen.

However, the balance of nature has been disturbed. In power stations, in factories and in our cars, we are burning more and more fossil fuels (coal, oil and natural gas) and this produces huge quantities of CO<sub>2</sub> - 18 billion tons of it enter the atmosphere every year. Added to this, the destruction of forests means that less CO<sub>2</sub> can be converted into oxygen by plants. So, the amount of CO<sub>2</sub> in the atmosphere is increasing every year.

**Greenhouse effect** is a warming near the earth's surface that results when the earth's atmosphere traps the sun's heat. Without this effect, the average surface temperature of the earth would be about 59 Fahrenheit degrees (33 Celsius degrees) lower than it is.

As the temperature rises, the amount of water vapour in the air will increase and this too will absorb more of the earth's heat. The oceans too will become warmer and store more heat, so that they increase the warming effect.

## UNIT 6

### Glossary

1. burgeoning population- зростаюче населення
2. cesspool (n) – стічна яма
3. clashes - сутички
4. clog (v) – засмічувати
5. cripple (v) – калічити, нівечити, робити непридатним
6. disaster (n) – лихо, нещастя
7. effluent (n) – стік, стічні води, річка, потік
8. endanger (v) – наражати на небезпеку
9. scarce (adj) – недостатній, бідний
10. sewage (n) – стічні води

### 1. Read and translate the text.

#### Clean water is a human right

Latin America's largest metropolis, with more than 20 million people, is sinking. Mexico City is built on an ancient lake that has been drained, and now the underground aquifers are collapsing. But that is only half the problem. In what is developing into one of the world's most pressing environment problem, rivers of sewage flow through many poor neighbourhoods, the city loses 40-50% of all its water in leaks, and 100 cubic metres of hard-to-dispose waste is generated every second.

Yet every day more than 1,000 people come to live in Mexico City, and the local authorities are overwhelmed. Last year a million people depended on water trucks, or "pipas", to meet their basic need for water. The rich bought it bottled, the poorest paid by the bucketful, and there were clashes between neighbours as people stole water from each other. Even though more than 800km of new pipes have been laid in the past few years, 40% of people still refuse to pay or do not receive bills. The whole system urgently needs several billion dollars' investment.

Moreover, the problems are worsening. The United Nations has declared that water quality is declining in most regions, that there is an increasing demand for water to grow crops for burgeoning populations, and that urban areas are exploding. By 2030 some 2 billion people will live in illegal squatter settlements and slums without access to water. But what may shock people most is that after almost 15 years of promises by world bodies, national governments, water companies and others, the world's poorest are still not getting the most basic human need.

There is now no chance that the millennium development goal of halving the proportion of people without access to clean water by 2015 will be met. At this rate of progress, says the World Water Council, "access to clean water cannot be



guaranteed until beyond 2050 in Latin America and the Caribbean”. Blame for the failure will be put on large institutions, states and international companies that have the money, or access to it, but that have failed to target the poor.

## 2. COMPREHENSION EXERCISES

### 1. Answer the following questions:

1. What is the population of Mexico?
2. What was the city built on?
3. What are the main problems that city is facing today?
4. What has the United Nations declared?
5. How many people will live in squatter settlements and slums without access to water in 2030?

### 2. Give English equivalents for the following.

1. старе озеро
2. споживання на душу населення
3. питна вода
4. доступ до чистої води
5. нетрі
6. попит та пропозиція
7. провина
8. мати за мету

### 3. 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

## 3. GRAMMAR EXERCISES

### 1. Translate the sentences paying special attention to complex objects.

1. He didn't want us to be disturbed by the fact that winters were becoming warmer and natural disasters much powerful because of the climate warming.
2. The scientists believe greenhouses gases are the cause of climate warming.
3. A laptop enables people to work on a plane.
4. She neglected the fact of greenhouse effect influence to be discussed at the meeting as a very important one.
5. They would like to be told about the consequences of the recent tsumani in South-East Asia.

**2. The words in the following sentences are in the wrong order. Rewrite them in the correct order.**

- a) me she to in myself taught believe.
- b) dirty they me to their do work paid.
- c) we atmosphere still know the don't results effect gases of greenhouse the on.
- d) allow smoke don't they you to work at.
- e) should be car encouraged makers gas with CO<sup>2</sup> less to produce less with.

**3. 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' ...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

**4. Translate into English**

1. Сьогодні дуже холодно: цілу ніч йшов сніг.
2. Ми познайомились місяць тому, 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 Криму? – Я взагалі ніколи не був у Криму.
9. Дощ закінчився, і знову світило сонце.
10. Аральське море майже наполовину висхло через людську діяльність.

**5. Put the verbs in brackets into the correct past forms:**

Christopher Columbus ..... (be/born) in Italy in 1451. He ..... (work) as a woollen 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) another three voyages after this. He ..... (retire) to Valladolid 12 years after his first voyage and in 1517 he ..... (die) there.

**6. Read and translate the text. Give its main idea.**

*Water Pollution*

Estimates suggest that nearly 1.5 billion people lack safe drinking water and that at least 5 million deaths per year can be attributed to waterborne diseases. Water pollution may come from point or non-point sources. Point sources discharge pollutants at specific locations—from, for example, factories, sewage treatment plants, or oil tankers. The technology exists for point sources of pollution to be monitored and regulated, although political factors may complicate matters. Non-point sources—runoff water containing pesticides and fertilizers from acres of agricultural land, for example—are much more difficult to control. Pollution arising from non-point sources accounts for a majority of the contaminants in streams and lakes.

With almost 80 percent of the planet covered by oceans, people have long acted as if those bodies of water could serve as a limitless dumping ground for wastes. Raw sewage, garbage, and oil spills have begun to overwhelm the diluting capabilities of the oceans, and most coastal waters are now polluted. Beaches around the world are closed regularly, often because of high amounts of bacteria from sewage disposal, and marine wildlife is beginning to suffer.

**TEST 4**

**1. Choose the correct word to complete the sentences. Total 10**

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 if problems if I had been invited in time.

- A) participate                C) has participate  
B) have participated        D) 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

**2. Give English or Ukrainian equivalents of the following. Total 5**

1. Питна вода
2. Споживання на душу населення
3. Dumping ground
4. Вантаж осадової породи
5. Температура вище нуля

**3. Complete the following conditional sentences and translate them. Total 10**

1. You will attend the lecture of sewage water if ....
2. If the earth gets water 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 ....

**4. Make the following sentences disjunctive questions. Total 5**

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 political sensitive issue.

**5. Translate the following into English. Total 20**

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 сферою, об'єму води на нашій планеті було б достатньо.

**6. Open the brackets to use the correct verb form. Total 10**

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.

**7. Give three forms of the following irregular verbs. Total 10**

1. бачити
2. чути
3. дивитися
4. розуміти
5. відчувати
6. кричати
7. пити
8. вчити
9. ходити
10. їсти

**8. Translate in writing without dictionary (Time for the task – 10 min).**

**Total 30**

**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.

## PART III

### UNIT 1

#### Glossary

1. bounded	оточений
2. isthmus	перешийок
3. shallow	мілкий
4. picturesque	мальовничий
5. to be noted for	характеризуватися
6. inlet	бухта
7. strait	протока
8. bank bars	мілина
9. designation	назва
10. plain	рівнина
11. peninsula	півострів
12. elevation	височина
13. lowland	низина
14. evaporate	випаровуватися
15. clayey schists	глинисті сланці
16. deposit	родовище
17. crumbly limestone	крихкий вапняк
18. range	хребет
19. pasture	пасовище
20. cave	печера
21. deciduous	листяний
22. coniferous	хвойний
23. in the vicinity of	поблизу

#### 1. Read and translate the text.

##### The Crimea

The Crimea Peninsula is the only natural geographical division of Ukraine almost entirely bounded by the sea. It is attached to the continent only by the five-mile wide Perekop Isthmus. Washed by the deep Black Sea on the west and south and by the shallow Sea of Azov on the east the Crimea has always been noted for the picturesque beauty of its southern shores and its subtropical climate. Its north-eastern shores consist of a complicated system of shallow inlets, straits and bank bars known by the common designation of Sivash. From the main body of the peninsula the elongated Kerch peninsula extends toward the Northern Caucasus from which it is separated by the Kerch Strait.

From the standpoint of relief and physical geography, the Crimea can be divided into three divisions: the steppe plains of the north including the Kerch peninsula, the Crimean mountains, and the southern coast. The Crimean steppe comprising about three fourth of the total area of the peninsula, is a southern continuation of the steppes of the southern Ukraine. It represents a level lowland rising gently

toward the foothills of the Crimean mountains in the south and nearly devoid of water. Even the longest river of the Crimea, the Salgir rising in the mountains evaporates in the steppe during the summer months. Water is obtained from artesian wells. Salt lakes abound along the shallow coasts. The Kerch peninsula rises in many low hill ranges, composed mainly of clayey schists which contain a number of mud volcanoes, similar to those found on the Apsheron peninsula near Baku. The Kerch peninsula is the chief mineral region of the Crimea and contains vast deposits of phosphoric iron ore.

The Crimean mountains were formed in the Alpine orogenesis. They extend 80 miles long and 30 miles wide along the south coast of the peninsula. They are composed chiefly of limestone. In the west they form three ridges: the longest (northernmost) is considerably eroded and consists of crumbly yellow limestone. The central range, somewhat higher, consists of soft white limestone and has been dissected by river action into separate plateau blocks. The hard gray limestone formations of the southern range which reaches the highest elevation at the Roman-Kosh ( 5,063 feet), break off nearly vertically at the south coast. The summits of the Crimean mountains are covered with steppe grasses and Alpine plants which serve as excellent summer pastures for the stock of the lowland steppe.

## **2. COMPREHENSION EXERCISES**

### **1. Answer the following questions:**

- a. What is the geographical position of the Crimea?
- b. What are the three main divisions of the Crimea?
- c. What is the steppe region noted for?
- d. Of what ridges are the Crimean mountains formed?
- e. What is the vegetation of the Crimean mountains?

### **2. Write out the equivalents in pairs:**

to be distinguished by; to connect; similar to; to include ; to stretch; to quarry; laborious; especially; also; from the point of view; a number of; stream; several; as well as; from the standpoint of; notably; difficult; to mine; to extend; to consist of; like; to be noted for; to join; rivulet.

### **3. Say whether the statements are true or false:**

1. The Crimean mountains are the highest mountains in Europe.
2. The Crimea Peninsula is the only natural geographical division of Ukraine.
3. The Kerch peninsula contains vast deposits of phosphoric iron ore.
4. The Crimean mountains were formed in the Alpine orogenesis.
5. The summits of the Crimean mountains are covered with steppe grasses.

## **3. GRAMMAR EXERCISES**

### **1. Translate the sentences paying attention to different forms of the Participle.**

1. The moving wall of ice changes everything in its path.
2. Precipitation totalling more than 20 inches annually occurs mainly in the winter months in the Crimea.
3. Metamorphic rocks are the changed products of igneous or sedimentary rocks or



other metamorphic rocks.

4. The polar station being built on the island is of great importance.

5. Making its way down the valley, the river cuts through rocks of different resistance.

## **2. Translate the sentences paying attention to the Infinitive**

a. This investigation would be a part of work to be done.

b. The area to be studied lies between the two grounded terminals or electrodes.

c. The majority of the sections to be evaluated were already behind casing when the study started.

d. There are other factors also to be considered such as the character and amount of the transported material and the character and structure of the rocks through which the channel is excavated.

e. The geologist's picture will serve to present a basis in estimating the shaft-sinking plan to be used.

## **3. Fill in the correct form of the infinitive or the –ing form. Mind the tenses.**

1. He is not likely.....(return) before five o'clock.

2. They might not .....(complain) about the meal if the service hadn't been so dreadful.

3. Man is said.....(invent) the wheel about ten thousand years ago.

4. They hope .....(make) a lot of money in their new business.

5. She's too tired .....(concentrate) on her work today.

## **4. Fill in the correct form of the infinitive.**

1. I've looked everywhere, but the file appears ...(misplace).

2. He is not old enough...(allow) to stay out late.

3. I don't think I'll be able to make it tomorrow. I'm supposed meet) Jane for lunch.

4. She was only pretending...(read); she was really daydreaming.

5. I need you ...(help) me prepare the food for the party.

6. The team is said ...(win) the match through sheer luck.

7. The accident is believed...( cause) by reckless driving.

8. The newspaper received many calls from people claiming...(see) UFO.

9. He was the first British writer...(award) the Nobel prize for literature.

10.He is not likely ...(return) before five o'clock.

## **5 Translate into English.**

1. Індонезія має плани побудувати першу атомну електростанцію в сейсмічно небезпечній зоні.

2. Сподіваються, що слухи про швидке потепління клімату трохи перебільшені.

3. Неможливо зупинити рух людства до прогресу.

4. Чи не будете ви такі люб'язні, пояснити мені причини появи озонної діри над Антарктикою?

5. Щоб наші діти могли дихати чистим повітрям, необхідно скоротити викиди парникових газів.



## 6. Read and translate the text. Give its main idea.

### Oxford

Oxford is situated in the centre of the Clay Vale, at the confluence of the Thames and Cherwell. Thus it stands at the "crossroads" of the country, and provides shops and markets for a rural area. Oxford is also known to retain from the Middle Ages a fair famous all over England.

Oxford is a modern industrial town, its suburb of Cowley being one of the main single producers of motor-cars in the British Isles. But its importance as an industrial town and market centre is, however, masked by its significance as a university city.

No exact date can be offered for the founding of the Oxford University, but according to some historians its beginning is believed to be related to the exodus of English students from the University of Paris in 1167 or 1168.

The choice of the small rural village of Oxford as a seat of learning was significant. Far removed from foreign influence, Oxford was comparatively easy reach of all parts of England. From the beginning the university was designed not for the aristocrats, but for the English commoners. The foundation of Oxford was more national than that of other universities in the Middle Ages, and the protection and advancement of the British Empire and Commonwealth has unswervingly been a dominant motive. Although the foregoing references do not indicate exact founding dates, there is more specific dating for the founding of Oxford's oldest resident colleges: University (1249), Balliol (about 1263) and Merton (1264).

Constituting one of the most unique collection of beautiful buildings in the world, the Oxford University colleges, in addition to the above mentioned oldest ones, are Exeter, Oriel, Queen's New, Lincoln, All Souls, Magdalen, Christ, etc.

In addition there are numerous academic halls. Most of these colleges began as hostels opened by charitable individuals and groups to provide lodging, care and general supervision of students.

The present facilities at Oxford include theology and oriental studies, law, English language and literature, medieval and modern history, humane letters, social studies, medicine, physical and chemical sciences, biology, anthropology, geology, agriculture, forestry and music.

## UNIT 2

### Glossary

1. search	пошук
2. forecast	прогноз
3. accuracy	точність
4. prediction	пророкування
5. properties	властивості
6. humidity	вологість
7. acquire	здобувати
8. stagnate	застоюватися
9. circumstances	обставини

10.transition	перехід
11.source region	осередковий район
12.beneath	внизу
13.a zone of discontinuity	зона розриву

## 1. Read and translate the text

### Air masses, fronts and cyclones

Meteorologists are constantly searching for improved methods of analysis in order to forecast the daily weather with greater accuracy. Contemporary weather analysis and prediction consist largely in the study of the properties of individual, discrete masses of air and the changes resulting when they meet.

An air mass is a portion of the atmosphere having a uniform horizontal distribution of certain physical characteristics especially of temperature and humidity, these qualities being acquired when a mass of air stagnates or moves very slowly over a large and relatively unvaried surface of land or sea. Under these circumstances surface air gradually takes on properties of temperature and moisture approaching those of the underlying surface, and there then follows a steady, progressive transmission of properties to greater heights, resulting finally in a fairly

clearly marked vertical transition of characteristics. Those parts of the earth where air masses acquire their distinguishing qualities are called source regions.

The height to which an air mass is modified depends upon the length of time it remains in its source region and also upon the difference between the initial properties of the air when it first arrived and those of the underlying surface. If for example an invading flow of air is cooler than the surface beneath as it comes to virtual rest over a source region, it is warmed from below and convective currents are formed, rapidly bearing aloft new characteristics of temperature and moisture to considerable heights. If, on the other hand, it is warmer than the surface of the source region, cooling of its surface layers takes place, vertical thermal currents do not develop and the air is modified only in its lower portion. The process of modification may be accomplished in just a few days of slow horizontal drift, although it often takes longer, sometimes several weeks. Radiation, convection, turbulence and advection are the chief means by which it is brought about

Two converging air masses tend to retain their individual properties after they have met, creating a zone of discontinuity between them called a front. A front is a rather narrow transition zone, marked by lower barometric pressure between two discrete air masses. It is usually along a front that the ordinary changes in weather evident to the casual observer take place. A front is often described as resembling an inclined plane, separating cooler air below from warmer air above, in a wedge-like fashion.

## 2. COMPREHENSION EXERCISES

### 1. Answer the following questions to the text:

- How does an air mass acquire its qualities?
- What determines the height to which an air mass is modified?

- c What do we call a front?
- d. How does it develop?
- e. What is called a source region?

**2. Write out the equivalents in pairs:**

constantly; approximately; to search; to occur; to forecast; to modify;  
 contemporary; to resemble; largely; to cause; to acquire; pronounced; gradually;  
 rather; roughly; fairly; clearly marked; to take place; all the time; to change; to  
 look for; to look alike; to predict; to bring about; present day; mainly; to take on; to  
 be noted for; little by little; to be distinguished by; a period; to rise; a spell; to  
 uplift.

**3. Translate the sentences paying attention to Participle Constructions:**

- a. Ordinary surface air is a mechanical mixture of a number of gases, chief among them being nitrogen and oxygen, which together comprise about 98 per cent of the volume.
- b. The two masses of colder air having met beneath the cyclone, the cyclonic mass of thinner air is uplifted and driven eastward in general circulation.
- c. When air masses having different temperature and humidity properties come together they do not mix readily but maintain a boundary surface of discontinuity for some time, the warmer, lighter air being forced aloft over colder mass.

**3. GRAMMAR EXERCISES**

**1. Fill in the blanks with prepositions or adverbs wherever necessary.**

1. Scientists are constantly searching... improved methods ... .analysis .. .order to forecast the daily weather ... .greater accuracy.2. A mass...air takes.. its qualities when it moves slowly... .a large and relatively unvaried surface....land or sea. 3. Measurements and calculations of the amount...heat coming... outer limits...the atmosphere has resulted...an average figure...1,94 gram calories per square centimeter per minute. 4. Plateaus on the coast are subject.. .the attacks...waves and currents.5. The Kerch Peninsula is noted ...the vast deposits.....phosphoric iron ore.

**2. Fill in the correct relative pronoun.**

Who	which	whose	when	where	why	whom
-----	-------	-------	------	-------	-----	------

- 1. The lady ....is speaking to the airport officials is the one.....luggage mysteriously disappeared.
- 2. It was 2009 ..... I traveled to Poland, as I had always wanted to visit the place ....my parents were born.
- 3. Her brothers, both ....are university students, enjoy playing football at weekends.
- 4. In the café.....I go for my lunch break, I often see a man.....looks a lot like our Professor Green.
- 5. The old building .....is now being restored, is said to have belonged to a wealthy

banker.

### **3. Put the verbs in brackets into the Present Perfect Simple or Present perfect Continuous.**

1. John ....(feel) quite depressed recently, so he is thinking of taking a week off to go skiing.
2. I ....(know) Professor Ivanenko since my first year at the University.
3. Mike ....(wait) for the bus for nearly an hour and it hasn't come yet.
4. " I ....(always/live) in this town and I don't intend to leave now", said the old lady.
5. Her eyes are red because she ... (work) on the computer all morning.

### **4. Translate into English using the dictionary:**

Вчені, проаналізувавши перші значні дослідження впливу підвищених температур на природний світ, прогнозують, що зміна клімату у наступні 50 років призведе до вимирання чверті всіх тварин і рослин на землі. Ці дані шокували вчених, які проводили дослідження. Вони прийшли до висновку, що більше 1 млн видів буде загублено до 2050 року. Велика частина цих втрат – більше одного з десяти всіх рослин і тварин - вже не підлягають відновленню із-за викидів в атмосферу газів , які нагрівають атмосферу землі. Але вчені вважають, що дії, спрямовані на запобігання викидів парникових газів, ще можуть допомогти врятувати багато видів від такої загрози.

Дослідження, які проводились у Європі, Австралії, Центральній та Південній Америці і в Південній Африці, показали, що види флори та фауни, які живуть в гірській місцевості, мають більше шансів вижити, тому що вони можуть піднятися вище у гори, де холодніше.

### **5. Read and translate the text. Give its main idea.**

#### **Africa, the Dark Continent**

It is sometimes called the "Dark Continent", not because there is more darkness than in other places, but because, when the name was first given, so little was known about the country.

Lake South America, Africa is wide in the north and narrower in the south, and, also as in South America, a mighty river flows through dense forests near the Equator. This river is the Congo.

The north of Africa lies only a few miles from Europe, and the Isthmus of Suez formerly joined Africa to Asia. In former times all ships from England to India, China or Japan had to sail thousands of miles round the south of Africa.

Between the northern shore and the rest of Africa stretches the Sahara desert, the largest in the world. For hundreds of miles the ground is nothing but hot, dry sand. Very rarely you can see a plant. Water is scarce and is found only at certain wells. Such a district is known as an "oasis" or fertile area in the desert.

The river Nile flows across the desert lands of Africa. It is a large river, which has made the land near it extremely fertile. In the Nile Valley are found large groves,

pretty flowers, rich orchards and fields of golden grain.

The River Nile rises a big lake called Victoria Nyanza. When the rains are heavy, several rivers flow from the mountains to this lake. At this season the Nile spreads itself over a large area. Mud and sand are carried from hundreds of miles. On the flat land the river crawl along slowly and there the mud settles down.

Lakes have been made to store up water for the land and small canals have been cut to carry this water to the fields.

The Nile as it flows over the marshy land to the sea, divides into several streams and thus has various mouths. The land of the delta is mostly marshy, and in hot countries is suitable for the growth of rice. Where the land is less marshy, the cotton plant grows, and Egypt is famous for cotton and tobacco.

The Suez Canal, through which ships from Europe pass to Asia is only a few miles from the Nile delta. It is nearly a hundred miles long, and on each side stretches dry, sandy desert. The canal is so wide and deep that the largest liners can go through, and at special places two ships can pass each other. It took years to cut the Suez Canal and even now boats called "dredgers" have to keep it clean, because a great deal of sand is blown into it from the desert lands around.

### UNIT 3

#### Glossary

1. glacier	льодовик
2. blanket	покрив
3. existence	існування
4. indeterminate	невизначений
5. unreliable	ненадійний
6. recover	відновлювати
7. effect	вплив
8. remnants	залишки
9. responsible for	бути відповідальним
10. piedmont	передгірний
11. abundant	рясний
12. endure	продовжуватися
13. tabular	шаруватий, плаский
14. hexagonal	шестигранний
15. neve	фірн
16. load	вантаж
17. trickle	струменіти
18. thoroughly	ретельно
19. altered	змінений

#### 1. Read and translate the text:

##### Glaciers

Late in the Pleistocene Epoch, some 30, 000 or 40,000 years ago, nearly half of North America, all of northern Europe, Greenland and Antarctica and much of

northern Asia were covered by great blankets of snow and ice called continental glaciers. At the same time valley glaciers in all the high mountain regions of the earth were much larger than the present ones, and thousands were in existence where none are now. It is estimated that more than one-fifth of the whole land surface, about 12,000,000 square miles, was covered with ice during this time.

The earth has not recovered from the effects of this "Great Ice Age". Even now 5,000,00 square miles of Antarctica and 600,000 square miles of Greenland are covered with glacial ice. In addition, there are hundreds of valley glaciers in the high mountains of western North America, the Alps, the Caucasus, the Andes and the Himalayas. Nearly all present glaciers are the remnants of the much greater ones of Pleistocene times.

Glaciers may be divided into four principal types: continental glaciers, ice caps, valley glaciers and piedmont glaciers. All have certain characteristics in common, but they differ in size, position and in their origin.

Three conditions are necessary for the formation of a glacier: first, abundant snowfall; second, cool or cold temperatures; and third, a sufficiently low rate of summer melting and evaporation, so that snow fields endure and increase in size through a long period of years. Snow field may accumulate on plains, plateaus or mountains. Wherever the conditions are favourable, the snow field grows in depth and in surface area from year to year. The transformation of snow to glacial ice occurs chiefly in the snow fields. As it falls through the air, snow consists of delicate, thin, tabular, hexagonal crystals. After having lain on the ground for some time and having been covered by later falls, the snow gradually changes to granular ice which is called neve'. This change is brought about by the partial melting of the snow crystals due to the weight of the overlying load. The water from the melting snow trickles down and almost immediately freezes, thus making grains of ice. A thick snow bank formed by the successive snowfalls of only one winter will have ice at the bottom, thoroughly granular snow in the centre and slightly altered snow at the top. After many years of accumulation the ice at the bottom of the snow field becomes very thick and, at last, is ready to move.

## 2. COMPREHENSION EXERCISES

### 1. Answer the questions to the text:

- a. How did the continents look late in the Pleistocene Epoch?
- b. Where are the remnants of ancient glaciers found now?
- c. What types of glaciers do you know?
- d. What conditions are necessary for the formation of a glacier?
- e. How is snow transformed to glacial ice?

### 2. Write out the equivalents in pairs:

To waste away; present; to take place; blanket; finally; to resume; to cause; margin; mainly; fast; to help; little by little; because of; to resemble; to change; to calculate; to continue; to recede; recent; to occur, sheet; eventually; to begin again; to bring about; edge; chiefly; rapid; to aid; due to; gradually; to alter; to look like; to go on; to estimate.



### 3. Say whether the following statements are true or false:

1. Late in the Pleistocene Epoch all of northern Europe was covered by great blankets of snow and ice.
2. Valley glaciers in all the high mountain regions of the earth were much smaller than the present ones.
3. Five conditions are necessary for the formation of a glacier.
4. The earth has not recovered from the effects of "Great Ice Age".
5. The snow gradually changes to granular ice which is called "neve".

### 3. GRAMMAR EXERCISES

#### 1. Translate the sentences paying attention to the different functions of the Gerund.

- a) Forecasting weather with great accuracy is no easy matter.
- b) Cooling may be caused by radiation, by contact with cold surfaces, by mixing masses of air of different temperatures.
- c) The sole object of our expedition was exploring the floor of the Pacific Ocean.
- d) The most important thing in the contemporary weather analysis is studying the properties of individual, discrete masses of air and the changes resulting when they meet.
- e) Improved methods of observing atmosphere are developed.

#### 2. Analyze the following sentences. State whether -ing-forms are participles or gerunds. Translate the sentences.

- a. The face of the earth is always changing.
- b. Having studied hundreds of sections of rocks we may learn the extent of the area over which a bed was deposited.
- c. Obtaining oil from undersea fields they used new methods and modern equipment.
- d. Wind direction may be determined quite simply by watching the movement of clouds, smoke or waves on water surfaces.
- e. One method of obtaining salt is allowing water to evaporate.

#### 3. Match the idioms with their definitions.

It's a small world	One can run into somebody they know almost anywhere.
An Englishman's home is his castle.	When visiting a place always respect its customs and traditions.
There's no place like home.	Whatever methods you use, they will have the same results.
All roads lead to Rome.	An Englishman feels safest and does as he wishes in his home.
When in Rome do as the Romans do.	One's home is the best place to be.

#### 4. Translate into English.

Гідросфера

*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 безнапірні й напірні води, тріщинні води і води карстових порожнин у легкорозчинних гірських породах ( вапняках, гіпсах, тощо).

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.

## **5. Read and translate the text. Give its main idea.**

### **Troubles never come singly**

The problem of the Sea of Azov is only 40 years old. The sea's basin has valuable fertile lands. Intensive agricultural and industrial development and population growth required a lot of fresh water. By the late of 1960s the annual runoffs of the Don and Kuban dropped by a shocking 10-15 cubic kilometres.

Obeying the law of communicating vessels, through the Kerch Strait the waters of the Black sea poured into the Sea of Azov. They brought hundreds of millions of tonnes of salts, which abruptly altered the sea's biological regime. Together with the salts came voracious jelly-fish -dangerous rivals in plantation consumption.

The sea's salinity climbed threateningly, in some spots reaching 14 grams of salt per litre of water whereas it had never risen above 10 grams before.

Scientists and economists sounded the alarm. Some researches expressed the fear that if measures were not taken, the Sea of Azov could degenerate into a swamp.

Analyses showed that there was sufficient oxygen in water so what was the problem? It was discovered that the culprit was the same Black Sea water brought by currents: being very salty, it freezes at a lower temperature. And since the Azov had not yet acquired an ice crust, the water had cooled to the very bottom. In the fish's gills and swimming bladder scientists found little ice crystals which had caused asphyxia.

## **TEST 5**

### **Task 1 Choose the correct form: Past Simple or Past Progressive: Total 10**

1. They calculated/were calculating their expenses when the financial statement was submitted / was being submitted.
2. What did you do/were you doing at 10 o'clock last night?
3. I saw/was seeing you in the office yesterday.You discussed/were discussing the latest events with the Vice -President.
4. While he compared/was comparing the prices, he found out/was finding out that some of them were highly competitive.

5. When I was/was being young, I wanted/was wanting to start my own business.

**Task 2. Choose the correct form to complete the sentences: Total 10**

1. The documents ..... to the Deputy Minister by e-mail half an hour ago:  
a) is sent; b) were sent; c) was sent; d) did sent.
2. His garage ..... when he bought a car:  
a) was building; b) was built; c) was being built; d) were being built.
3. She was walking along the road when the car ..... :  
a) was crashing; b) crashes; c) had crashed; d) crashed.
4. Did you ..... the Tower when you were in London?  
a) seen; b) saw; c) sees; d) see.
5. What ..... you doing at 8 p.m.?  
a) do; b) did; c) were; d) was.

**Task 3 Restore the questions to these answers: Total 5**

1. What \_\_\_\_\_ for two hours? – I was waiting for my employer.  
What \_\_\_\_\_? – I wanted him to increase my salary.  
– \_\_\_\_\_? – No, he didn't. I hope he will some day.
2. Where \_\_\_\_\_ when I saw you? – I was going to a library.  
– \_\_\_\_\_? – Yes, I did. I spent over four hours there.
3. You missed your working hours yesterday. What's the matter?  
\_\_\_\_\_  
– Yes, I was. I had a terrible headache.

**Task 4. Translate the sentences: Total 30**

1. Do you know the two gentlemen discussing something at the window?
2. Having been calculated in a wrong way, the profit was not very high.
3. Using new equipment sent by their sponsors, they received the required results.
4. Walking home I met a friend of mine who was waiting for his girl.
5. Rising prices resulted from shortage of supplies.
6. Looking for a job, he reads advertisements in newspapers.
7. Having considered all aspects of this issue, the Board of Directors decided to increase the volume of production.
8. The conference fee paid prior to April 1 will be lower.
9. The company offers a program for advanced learners.
10. The problems being discussed at the conference are not very interesting for me. I'm interested in problems concerning noise pollution.

**Task 5. Match lines in A and B to make one sentence: Total 10**

	A	B
1	Known as a scientist,	a) the business lost some of its customers.
2	Having increased the prices,	b) he has improved his pronunciation.
3	Taking a language course,	c) a degree is not enough for a successful career today.

4	Examining the level of environmental pollution in the region,	d) he was a peace-maker as well.
5	Having explained the rule,	e) they collected some important data to process.
6	Fast becoming the minimum qualification for an engineer	f) the teacher gave a few examples.

### Task 6. Compose sentences with proposed question words. Total 10

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

### Task 7. Translate into English: Total 25

#### Мінеральні ресурси

Мінерально-сировинна база України є багатством її народу, вона забезпечує незалежність і національну безпеку. За різноманітністю і багатством мінерально-сировинної бази Україна вигідно відрізняється від більшості республік колишнього СРСР і багатьох держав, займаючи 0,5 % суші й переробляючи близько 5% світового обсягу мінеральної сировини.

На території України розвідано близько 8 тисяч родовищ, майже 90 видів корисних копалин, з яких 20 мають важливе економічне значення. Серед них – нафта, газ, залізні, марганцеві, титанові, уранові руди, вугілля, сірка, ртуть, каолін, графіт, вогнетривкі глини, питні мінеральні води та інше.

## UNIT 4

### Glossary

1. heating oil	паливо комунально-побутового призначення
2. crude oil	сира нафта
3. residual fuel	залишкове паливо
4. interior	внутрішній
5. pressure	тиск
6. oil well	нафтова свердловина
7. minute quantity	маленька кількість
8. joining	сполуки
9. octane rating	октанове число

### 1. Read and translate the text

## Petroleum products

Petroleum products, such as gasoline, kerosene, home heating oil, residual fuel oil, and lubricating oils, come from one source- crude oil found below the earth's surface, as well as under large bodies of water, from a few hundred feet below the surface to as deep as 25,000 feet into the earth's interior. Sometimes crude oil is secured by drilling a hole through the earth, but more dry holes are drilled than those producing oil. Pressure at the source or pumping forces crude oil to the surface.

Crude oil wells flow at varying rates, from ten to thousands of barrels per hour. Petroleum products are always measured in 42-gallon barrels.

Petroleum products vary greatly in physical appearance: thin, thick, transparent or opaque, but regardless, their chemical composition is made up of only two elements: carbon and hydrogen, which form compounds called hydrocarbons. Other chemical elements found in union with the hydrocarbons are few and are of such minute quantities that they are disregarded. The combination of carbon and hydrogen forms many thousands of compounds which are possible because of the various positions and joinings of these two atoms in the hydrocarbon molecule.

The various petroleum products are refined from the crude oil by heating and condensing the vapors. These products are the so-called light oils, such as gasoline, kerosene, and distillate oil. The residue remaining after the light oils are distilled is known as heavy or residual fuel oil and is used mostly for burning under boilers. Additional complicated refining processes rearrange the chemical structure of the hydrocarbons to produce other products, some of which are used to upgrade and increase the octane rating of various types of gasolines.

## 2. COMPREHENSION EXERCISES

### 1. Answer the following questions:

- Which of the following is *not* true?
  - Crude oil is found below land and water.
  - Crude oil is always found a few hundred feet below the surface.
  - Pumping and pressure force crude oil to the surface.
  - A variety of petroleum products is obtained from crude oil.
- Many thousands of hydrocarbon compounds are possible because
  - the petroleum products vary greatly in physical appearance
  - complicated refining processes rearrange the chemical structure
  - the two atoms in the molecule assume many positions
  - the pressure needed to force it to the surface causes molecular transformations
- Which of the following is true?
  - The various petroleum products are produced by filtration
  - Heating and condensation produce the various products.
  - Chemical separation is used to produce the various products.
  - Mechanical means such as the centrifuge are used to produce the various products.
- How is crude oil brought to the surface?

- a) expansion of the hydrocarbons
  - b) pressure and pumping
  - c) vacuum created in the drilling pipe
  - d) expansion and contraction of the earth's surface
5. Which of the following is not listed as light oil?

- a) distillate oil
- b) gasoline
- c) lubricating oil
- d) kerosene

**2. Match the words with their explanation**

iceberg	A watercourse of significant size supplied by atmosphere precipitation from its reservoir with a well-expressed channel
abyss	Total amount of all pores and hollows in rock; is usually expressed in percentage of total amount of a taken sample
river	A science about the world ocean as a part of hydrosphere
porosity	A zone of the biggest sea depths characterized by absence of light, high pressure, constant temperature, salinity and density of water
oceanology	Floating block of ice in the sea or the ocean, broken away from ice shelf; up to 90% of their volume is above water

**3. GRAMMAR EXERCISES**

**1. Translate paying attention to the Participle.**

1. A rock is a substance composed of one or more minerals.
2. Rocks are composed of primary minerals and other minerals derived from them.
3. Dissolved minerals taken from the rocks by running water make the sea salty and make ocean life possible to exist.
4. The instruments used now are capable of measuring extremely small differences in gravitational force.
5. One of the greatest eruptions recorded is that of Krakatao.

**2. Fill in the gaps with adjectives formed from the nouns given in bold:**

1. Higher schools give the young people an all-round *education*. The number of higher....institutions increased greatly.
2. *Chemistry* is an important branch of the national economy. The ....industry produces plastics, synthetic materials and other products.
3. The students specialize in *geology* at the....institutes.
4. The scientists carried out research and developed mining *technique*. They popularized ....achievements among miners.

**3. Make up sentences of the following words.**

1. tradition, our, interesting, has, university, many.
2. an, plays, of, role, people, life, the, music, important, in.
3. this, did, the university, why, enter, you?
4. sport, is, what, favourite, your?

**4. Insert suitable articles where necessary.**

What should you do when you meet...American for... first time? Some people suggest that you smile and say "Hi!" in...informal situation or "How do you do?" in...formal situation...others recommend ...firm handshake. Everyone agrees that ...kiss is not appropriate, even on...cheek. It is common to make...small talk when you first meet...person. You can talk about ...weather, ...recent sporting event, or better yet, ask...other person ...question about his or her life. In any case, don't remain silent when you meet...people for...first time because if you do,...American might think you are...snob.

**5. Translate into English.**

**Трансформація енергії у біосфері**

Живі організми постійно споживають енергію. Джерело енергії – Сонце. Живий світ Землі, її біосфера, складаються з організмів трьох основних типів. Потік енергії у біосфері має один напрямок: від Сонця через рослини (автотрофи) до тварин (гетеротрофи), або від продуцентів до консументів.

Автотрофи – це організми, які створюють органічні речовини з неорганічних у процесі фотосинтезу, використовуючи сонячну енергію. До автотрофів належать зелені вищі рослини, лишайники, водорості і бактерії, що мають фото синтезуючі пігменти. В екології автотрофи називають також продуцентами. Продуценти - це організми, що створюють органічну речовину за рахунок утилізації сонячної енергії, води, вуглецю та мінеральних солей. До цього типу належать рослини, яких на Землі є близько 350 000 видів. Продуценти утворюють складні сполуки, у хімічних зв'язках яких зосереджена енергія, що вивільняється при розкладанні їх у процесі травлення тварин та інших гетеротрофів.

**6. Read and translate the text. Give its main idea.**

**Oil**

Oil is the remains of tiny plants and animals which lived in the sea millions of years ago. When they died, they sank to the bottom and were covered by layers of mud and sand. Over the years, the remains were buried deeper and deeper, and the mud and sand turned to rock. Heat, bacteria and the weight of rock above slowly changed the remains into oil (and natural gas). Some seeped upwards to the surface and escaped. But some was stopped by layers of solid rock. Here it stayed, trapped in the holes in porous rock, rather like water in a sponge. In some places, earth movements bent the rock layers, creating huge natural traps for oil. The geological name for this oil is petroleum. Today, oil companies search for it under the sea-bed or under land once covered by sea.

The search for oil starts with geologists who decide where the most likely rock layers are to be found. Next, geophysicists survey the area. They measure slight changes of magnetism or gravity which might give clues about the rocks

underneath. Then they set off explosions to send shock waves down through the rocks. By recording the echoes reflected back, they can work out how the rock layers are arranged. If the signs are good, test drillings are made to see if there really is oil there.

## UNIT 5

### Glossary

1. slash and burn agriculture	підсічно-вогняне сільське господарство
2. nutrients	поживні речовини
3. tilling	оранка
4. fertilizer	добриво
5. to clear	розчищати
6. infertility	безплідність
7. laterite soil	червонозем
8. leaching	лужність
9. recycling	переробка
10. legume	бобові

### 1. Read and translate the text

#### Tropical Rain Forests and Farming

Because tropical rain forests are so lush and fast-growing, many people have suggested that they would be excellent agricultural areas. In fact, primitive people in such areas have practiced slash-and-burn agriculture for centuries.

This method of use involves cutting and burning the vegetation on a small plot of land. The burning releases the nutrients in the vegetation. If planting and tilling are done quickly, the crop covers the soil and prevents its exposure to the hot sun and erosion caused by the frequent rains.

During the first year, a good crop can be harvested, but the yield declines each succeeding year unless massive amounts of fertilizer are used. For the primitive inhabitants of these areas, this was no problem because they simply abandoned the garden and cleared a new site. The old garden was quickly repopulated by the seeds of trees in the surrounding forest and succession occurred, resulting in a return to the original forest community. Most attempts to farm large areas using temperate-region agricultural techniques have resulted in failures because of the infertility of the soil and the soil's tendency to become hard.

One kind of soil found in the hot and humid tropical rain forests such as those found in South America is called a laterite soil. Abundant rainfall is common in the areas where laterite soil is found. Since the soil is porous, it is subjected to a great deal of leaching, which results in the removal of soil nutrients as the water flows over and through the exposed soil. Silica is removed, but the soil retains a relatively high concentration of oxides of iron and aluminum. The presence of these compounds contributes to the reddish colour of this soil. Laterite soil gets its name from the Latin word for brick, because whenever it is directly exposed to weathering, it hardens into a bricklike mass. In the past, these blocks were used as building materials. A temple in the People's Republic of Kampuchea (Cambodia) is



constructed entirely of blocks of laterite soil.

If this is such an infertile soil, why does it support such a lush tropical forest? The high temperature and high amount of moisture encourage the growth of plants; however, there are few nutrients in the soil. The plants rely on a rapid uptake of nutrients from the plants and animals that die. Whenever a plant dies, it decays rapidly, and surrounding plants absorb the nutrients needed for their growth. Tropical forest trees bear mutualistic fungi called mycorrhizae in association with an extensive root network near the surface of the soil. The mycorrhizae quickly penetrate each fallen leaf and take all nutrients back into the roots of their host tree. This activity prevents the loss of valuable nutrients due to the leaching action of high rainfall and porous soil. Nutrients from decaying organisms do not usually go unused in a healthy tropical rain forest.

Other trees perform a different role. It is estimated that 10 to 15 percent of the trees in tropical rain forests are legumes, which have symbiotic nitrogen-fixing bacteria associated with their roots. These trees, which are mixed throughout the forest, provide this much-needed nutrient for other trees that surround them. Thus, the lush vegetation in tropical rain forests is the result of a very finely tuned ecological system that recycles nutrients as fast as they are released. The nutrients are in the plants not in the soil.

## 2. COMPREHENSION EXERCISES

### 1. Answer the following questions:

- Why do people think that tropical rain forests are excellent agricultural areas?
- Describe slash-and-bum agriculture.
- Can one harvest good crop every year as a result of this method?
- What is laterite soil?
- Where one can find laterite soil?
- Why does laterite soil support a lush tropical forest?

### 2. Match the following words with the explanations:

lush-	inability to grow plants
infertile-	a hundred years
century-	growing very well
populate-	to fill up the area
fertile-	food providing for life and growth

### 3. Say whether the following statements are true or false:

- Tropical rain forests are excellent agricultural areas.
- Slash-and-bum agriculture involves cutting and burning the vegetation on a small plot of land.
- During the first year a good crop can be harvested.
- The high temperature and high amount of moisture encourage the growth of plants.
- 10 to 15 percent of the trees in tropical rain forests are legumes.

## 3. GRAMMAR EXERCISES

### 1. Put the verbs in brackets into correct form and translate the sentences:

- When he has finished he (to let) you know.
- As soon as she (to learn) shorthand she'll get a better job.
- When you have eaten something you (to feel) better.
- We'll have a holiday after we (to take) our examinations.
- After we (to visit) the museum we'll go to a pub.

### 2. Put the adverbs in the right places:

- You are here when something happens (usually).
- Her mum cooks a meal in the evening (always).
- We book that April holiday in January (usually).
- They think that we have got bread (probably).
- You should look where you're going (always).

### 3. Translate into English, using Participle I where possible.

- Отримавши телеграму, моя сестра негайно виїхала до Москви.
- Увійшовши до класу, вчителька запитала чергового про те, хто сьогодні відсутній.
- Почувши голос товариша, я вийшов з кімнати, щоб зустріти його.
- Будьте обережними, переходячи вулицю.
- Проживши багато років в Англії, він добре розмовляє англійською.

### 4. Put the verbs in brackets into the Past Perfect or the Past Perfect Continuous:

Yesterday was a bad day for Andrew. He 1) ..... (not/sleep) well because there was a terrible storm at night. After he 2)..... (have) a shower, he made breakfast. After he 3)..... (eat), he got into his car and drove to work. He only 4)..... (drive) for five minutes when he remembered that he 5)..... (leave) his briefcase at home. He turned the car around and went home again. Then, he realised that he 6) ..... (lock) himself out. The keys were still inside the house! Andrew was already late for work, so he decided to leave the briefcase and go to work. When he arrived, his secretary told him that his boss 7) ..... (try) to call him at home

### **5. 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 довкілля, 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.

### **6. Read and translate the text. Give its main idea.**

#### **Areas with Minimal Human Impact- Wilderness and Remote Areas.**

There are still many areas of the world that have had minimal human impact . Some of these are remote areas with harsh environmental conditions, such as the continent of Antarctica, northern arctic areas, the tops of some tall mountains, or extremely arid areas, such as desert areas of Africa, central Australia, and central Asia. Most of these have been explored and found to be too harsh to sustain human habitation because growing food would be impossible.

Many other areas of the world, such as tropical rainforests, currently support ecosystems that are little affected by humans but are under threat because they are capable of supporting agriculture or other human uses. The primary factor that will determine the survival of these natural areas is population pressure. As the human population grows, it will need more food and more space. This ultimately leads to the destruction of natural ecosystems and their replacement by human-modified

ecosystems. Many countries have established parks and other special designations of land use to protect areas of natural beauty or communities of organisms thought worthy of protection. This has been most noticeable in Africa, Central and South America, North America, and Australia. Until recently, these continents had large amounts of land that were relatively untouched.

Europe, the British Isles, and the agricultural regions of North America have almost none of their original vegetation remaining. The forests were cut for shipbuilding, fuel, and agriculture, and the prairies were converted to cropland. The forests that remain are small remnants of the original communities and have been modified by the introduction of many exotic species of plants and animals that have replaced the original inhabitants. Historically, the pressures to modify the environment were greatest in Europe because of the large population and the Industrial Revolution.

## UNIT 6

### Glossary

1. disturbances	порушення, хвилювання
2. volcanic eruption	вулканічне виверження
3. barely perceptible	майже непомітний
4. to attain	досягати
5. misleading	оманливий
6. crustal instability	нестабільність кори
7. debris	обломки
8. fault	розлом, зсув
9. shoal	мілина
10. intricate	складний, заплутаний

### 1. Read and translate the text. Give its main idea.

#### TSUNAMIS

Exceptional disturbances of ocean water occur during and after earthquakes, landslides or volcanic eruptions in and around the ocean basins. These produce waves several hundreds miles in length, with periods of up to half an hour, with velocities of up to 800 km/hr across the deep oceans. They are barely perceptible in mid-ocean but on entering shallow coastal waters they build up into giant "tidal waves" which may attain heights of more than 30 m by the time they reach the coast. The term "tidal waves" is misleading, for they are not tidal in origin, and the scientific term for them is the Japanese word "tsunami". They are most common in the Pacific Ocean, which is bordered by zones of crustal instability, and they are responsible for occasional catastrophic flooding and erosion of pacific coasts, often with much devastation and loss of life far from the originating disturbance.

In April 1946 a tsunami was initiated by an earthquake off the Aleutian Islands, and waves travelling southwards arrived in the Hawaiian Islands, 3700 km away, in less than five hours, having moved at an average speed of 750 km/hr. The town of Hilo in Hawaii was hit by waves rising 9 m, and at one point a wave

carried 16.8 mm. Beaches were swept away, and the waves carried reef debris, including large blocks of coral, on to the coast, and eroded hollows on hillsides far above normal high tide level. Giant waves were recorded at many other places around the Pacific Ocean.

It is now realized that tsunamis are not necessarily "damped down" by distances; the magnitude of waves received depends partly on offshore topography, the waves being higher where the offshore zone is gently shelving; and partly on the orientation of a coast in relation to the source of the disturbance. An earthquake along a fault line is likely to produce higher waves on coasts facing and parallel to the fault than on coasts which run obliquely to it; the greatest effects of the 1960 tsunami off the coast of Chile were on parts of the Japanese coast parallel to the line of disturbance of the Chilean earthquake. Wave heights are much reduced where coral reefs border the coast, where there is deep water close inshore, or where the waves have been refracted round reefs, shoals or islands of intricate configuration.

## 2. COMPREHENSION EXERCISES

### 1. Answer the following questions:

1. When do exceptional disturbances of ocean water occur?
2. What do these disturbances produce?
3. Are they visible in mid-ocean?
4. When do they build up into giant "tidal waves"?
5. Are they tidal in origin?
6. Where are tsunami most common?

### 2. Say whether the following statements are true or false:

1. Disturbances of ocean water occur during and after earthquakes, landslides or volcanic eruptions in and around the ocean basins.
2. Tsunamis are not necessarily "damped down" by distances.
3. Tsunamis produce waves several hundreds centimeters in length, with periods of up to half an hour, with velocities of up to 800 km/hr across the deep oceans.
4. An earthquake along a fault line is likely to produce higher waves on coasts.
5. Tsunamis are most common in the Atlantic Ocean.

### 3. Match the words with their explanations:

tsunami	Gradual destruction of the surface of smth through the action of wind, rain, etc.
earthquake	A place where there is a break that is longer than usual in the layers of rock in the earth's crust
fault	A large amount of water covering an area that is usually dry
flood	A sudden, violent shaking of the earth's surface
erosion	An extremely large wave in the sea

### 3. GRAMMAR EXERCISES

#### 1. Fill in the correct form of the infinitive.

1. I've looked everywhere, but the file appears ...(misplace).
2. He is not old enough...(allow) to stay out late.
3. I don't think I'll be able to make it tomorrow. I'm supposed ...(meet) Jane for lunch.
4. She was only pretending...(read); she was really daydreaming.
5. I need you ...(help) me prepare the food for the party.
6. The team is said ...(win) the match through sheer luck.
7. The accident is believed...( cause) by reckless driving.
8. The newspaper received many calls from people claiming...(see) UFO.
9. He was the first British writer...(award) the Nobel prize for literature.
10. He is not likely ...(return) before five o'clock.

#### 2. Translate the sentences paying special attention to complex objects.

1. He didn't want us to be disturbed by the fact that winters were becoming warmer and natural disasters much powerful because of the climate warming.
2. The scientists believe greenhouses gases are the cause of climate warming.
3. A laptop enables people to work on a plane.
4. She neglected the fact of greenhouse effect influence to be discussed at the meeting as a very important one.
5. They would like to be told about the consequences of the recent tsumani in South-East Asia.

#### 3. Put the verbs in brackets into the Past Perfect or the Past Perfect Continuous:

Yesterday was a bad day for Andrew. He 1) ..... (not/sleep) well because there was a terrible storm at night. After he 2)..... (have) a shower, he made breakfast. After he 3)..... (eat), he got into his car and drove to work. He only 4)..... (drive) for five minutes when he remembered that he 5)..... (leave) his briefcase at home. He turned the car around and went home again. Then, he realised that he 6) ..... (lock) himself out. The keys were still inside the house! Andrew was already late for work, so he decided to leave the briefcase and go to work. When he arrived, his secretary told him that his boss 7) ..... (try) to call him at home.

#### 4. Translate into English.

##### Теорії походження підземних вод

**Екзогенні підземні води** потрапляють у гірські породи або підчас процесів інфільтрації поверхневих вод і конденсації водяної пари, або в результаті седиментації (осадо накопичення). Ці води часто називають відповідно інфільтраційними, конденсаційними і седиментаційними.

**Інфільтраційна теорія** походження підземних вод – підземні води формуються за рахунок атмосферних опадів, які через дрібні канали в гірських породах попадають у шари Землі, де й накопичуються. Ця теорія була сформульована в 1717 р. французьким фізиком Маріоттом.

Коли атмосферні опади випадають на поверхню тріщинуватих порід (базальтів, гранітів, пісковиків, особливо закарстованих), то на глибину вони проникають безпосередньо по тріщинах. Підземні води, що утворились завдяки просочуванню атмосферних вод у породи крізь великі тріщини, називаються **інфлюаційними**.

**Конденсаційна теорія** походження підземних вод – підземні води, що виникають у породах та тріщинах гірських порід із водяної пари. Ця теорія була висунута німецьким гідрологом Фольгером у 1877р.

## **5. Read and translate the text. Give its main idea.**

### **Climate studies can predict malaria epidemics**

Scientists have developed an early-warning system for the outbreak of malaria epidemics. They claim that the system, which is based on computer models of climate change, can predict outbreaks up to five months in advance.

Malaria kills more than 1 million people every year, and infects 500 million worldwide. Although endemic in many parts of the world, the disease is concentrated in sub-Saharan Africa, which accounts for almost 90% of all cases. “Although the greatest burden of malaria in Africa is suffered by those living in endemic regions, epidemics pose a serious threat to many millions of people and their prevention remains a priority”, wrote the researchers in their paper, published in Nature.

Climate is the key in the development of not only the malaria parasite but also the mosquitoes that carry it. In Botswana the national malaria control programme has developed an early-warning system based on population vulnerability, rainfall, and health surveillance to predict and detect unusual changes in the seasonal pattern of disease. The risk of an epidemic in Botswana increases dramatically just after a season of good rainfall.

A separate study published last year showed that monitoring rainfall and sea surface temperature could predict the peak of a malaria season up to a month in advance. But the earlier warning could give health workers more time to build up drug stocks or to target insecticides. Preventive and protective measures – spraying stagnant waters, providing anti-malarial drugs, bed nets, etc – can be targeted on the regions most at risk, thus making better use of existing resources.

## **TEST 6**

### **I. Choose the correct word to complete the sentences. Максимальна кількість балів: 10 (Total 10)**

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 | C) were |
| B) is      | D) was  |

3. She said that salt contained in soil ... away when it rains.

- A) was washed            C) are washed  
B) is being washed    D) will be 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

**2. Give English or Ukrainian equivalents of the following. (Total 10)**

спалах малярії

епідемія

загроза

система раннього сповіщення

account for

burden

vulnerability

insecticide

health surveillance

запас медикаментів

**3. Turn the following into indirect questions. (Total 10)**

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).

**4. Translate into English: Total 20**

1. „Чи можна Вас запитати, де знаходиться інститут екологічних проблем?” - запитала вона.
2. “Я можу допомогти тобі підготуватися до екзамену краще” - сказала вона, після того як він провалив екзамен.
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?”.

**5. Give three forms of the following irregular verbs. Total 10**

- |                     |              |
|---------------------|--------------|
| 1. їхати (залишати) | 6. працювати |
| 2. знати            | 7. підіймати |
| 3. тримати          | 8. будувати  |



4. рости

9. заявляти

5. давати

10. переносити

**6. Open the brackets and put the correct verb form. Total 10**

1. Soil (to contain) mineral and organic particles.
2. Scientists studying water (to be called) hydrologists.
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.

**7. Compose sentences with the following words. Total 10**

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.

**8. Translate in writing without a dictionary (Time for the task – 10 min).**

**Total 20**

**The meteorology ancient history**

The science of meteorology did not suddenly spring into being. What is now considered meteorology was in antiquity just a branch of astronomy. Later meteorological theories began to be formulated in the terms of mechanics, optics and the prevailing theories of matter. In fact it has only been in the last hundred years that meteorology was accepted as a science in its own right. However, if one were forced to name a time in which meteorology first began to crystallize into a science, this would be that of Aristotle's famous treatise "Meteorologica". This treatise, the oldest comprehensive composition on the subject of meteorology marked the beginning of systematic inquiries as to physical causes in earth, sky and air.

When and where the first rational attempts were made to foresee or understand meteorological phenomena is unknown. The ancient people of Middle East and Egypt, pioneers in the science of astronomy, attempted to connect the phenomena of weather with motions of heavenly bodies. However, the first men to take a scientific interest in meteorological phenomena were ancient Greek mathematicians and natural philosophers.

## Appendix

### 1. UKRAINE

#### *Word list*

sovereign	суверенний
border (v)	граничити
neighbour	сусід
wash (v)	омиватися
cathedral	собор
grain harvester	комбайн
metal cutting	металорізальний
Presidential Parliamentary	президентсько-парламентська
republic	республіка
government	уряд
state	державна
to head	очолювати
direct voting	пряме голосування
term of presidency	термін президентства
legislative	законодавчий
executive power	виконавча влада

#### TEXT

Ukraine is one of the largest sovereign states in Europe. It borders on Poland, Slovakia and Hungary in the west and Romania and Moldova in the south-west. Its northern neighbour is Byelorussia and its eastern one is the Russian Federation. In the south Ukraine is washed by the Black sea and the Sea of Azov. Its population is about 46 million people. It covers an area of about 600000 sq. km.

Kyiv is the capital of this state, its political, administrative, scientific, cultural and industrial centre.

Kyiv was a large commercial centre of the East Slavs and was called "the Mother of all Russian towns". Many historical places in Kyiv remind us of its ancient history. Among them are the Golden Gate, St.Sophia' s Cathedral, St. Vladimir' s Camedral, Kyiv-Pecherskaya Lavra and many others. At present Kyiv is one of the leading industrial centres of Ukraine. It is also the seat of the Ukrainian Government. The leading industries of Ukraine are power engineering, machine building and chemical production. It produces modern supersonic airplanes, grain harvesters, powerful locomotives, agricultural products, etc.

Ukraine is a Presidential-Parliamentary Republic according to the form of government. Ukraine is headed by the President elected by direct voting; the term of presidency is 5 years. Legislative power in Ukraine is exercised by the Verkhovna Rada and the executive power is exercised by the Cabinet of Ministers headed by the Prime Minister. Ukraine is a democratic, socio-legal state.

There are many large cities in Ukraine, among them Kharkiv, an important industrial, scientific and students' centre, Donetsk - a coal mining centre, Odesa -a big sea port and resort- city, Lviv - a large industrial, scientific and cultural centre,

Zaporizhzhia,- a metallurgical centre, Dnipropetrovsk - a large machine-building centre and many others

**Questions:**

1. What kind of state is Ukraine?
2. What countries does Ukraine border on?
3. What is the population of Ukraine?
4. What can you say about the capital of Ukraine?
5. What are the largest cities of Ukraine famous for?
6. Who is the head of the state?
7. What kind of state is Ukraine according to the form of government?
8. Whom does the executive power belong to in Ukraine?

## 2. KHARKIV

**Word list:**

to found	заснувати
interflow	зливатися
military stronghold	військова фортеця
aim	ціль
investment	інвестиції
tool bearings	підшипники
puppet theatre	ляльковий театр
educational establishment	учбовий заклад
as early as	ще

### TEXT

Kharkiv was founded in 1654 at the place where three rivers the Kharkiv, the Lopan', the Udy interflow.

The city is situated in 478 km north-east of Kyiv, the capital of Ukraine. It was founded as a small military stronghold. Kharkiv was the centre of Slobodskaya Ukraine. From 1919 to 1934 Kharkiv was the capital of the Soviet Ukraine.

Today Kharkiv is the largest centre of Ukraine according to its industrial potential and the second according to its population. About 1,5 million people live here. The main aim of the city development is to turn it into the largest financial and commercial centre of Ukraine. Such a city Kharkiv was before the revolution with more than 80 commercial banks and other financial offices. They made large investments into industry, culture, education.

At present Kharkiv is one of the largest industrial cities in Ukraine producing tractors, turbines, tool bearings, etc. It has powerful heavy machine-building.

There is an underground here which came into operation on August 23, 1975. By the way, on that day in 1943 Kharkiv was liberated from fascist occupation. And, certainly, the 23<sup>rd</sup> of August is a great holiday for the citizens of Kharkiv.

Kharkiv is a large academic and cultural centre, there are many institutes, universities, technical schools and colleges. More than 300 000 students study in

the city. The oldest educational establishment in the city is Kharkiv National University, founded as early as in 1805. There are 6 theatres, among them the Opera and Ballet theatre, the Puppet theatre, the Ukrainian Drama theatre, the circus, many palaces of culture and clubs. The largest library in the city is the Korolenko library, designed by a well-known architect academician N.Beketov. There is a world-famous monument to Taras Shevchenko in Kharkiv designed by a well-known sculptor Monizer in 1935.

Kharkiv is an international city where people of different nationalities live and work.

**Questions:**

1. When and where was Kharkiv founded?
2. Where is the city situated?
3. What is the population of the city?
4. What kind of city was Kharkiv before the revolution?
5. Why is the 23<sup>rd</sup> of August a great holiday for the residents of Kharkiv?

### 3. THE UNITED STATES OF AMERICA

**Word list:**

1. to occupy _____	займати площу
2. to stretch _____	простягнутися
3. to be rich in _____	бути багатим
4. to produce _____	випускати
5. copper _____	мідь
6. iron ore _____	залізна руда
7. legislative branch of government	законотворча гілка влади
8. the House of Representatives	Палата Представників
9. to be elected _____	бути обраним
10. to veto a bill _____	накласти вето на закон
11. two-thirds majority vote	дві треті більшості голосів

#### The United States of America

The USA is one of the biggest countries in the world. It occupies most of North America. It stretches from the Pacific Ocean to the Atlantic Ocean, from the Great Lakes to the Gulf of Mexico. In the north the States have a common border with Canada. In the south it borders on Mexico. The total area of the USA is over nine million square kilometres. There are 50 states in the USA and many big cities, such as New York, Chicago, Los Angeles, Philadelphia and others. The national capital is Washington, DC. Its population is about 3,4 million people.

The USA became the world leading country at the beginning of the 20<sup>th</sup> century.

The USA is a Presidential Republic. The legislative branch of the US Government, or (he Congress represents all of 50 American states. It consists of two parts: the House of Representatives and the Senate. Each state has two senators who are elected every 6 years.

The job of the Congress is to make laws. The President can veto a bill. The Congress can pass the law anyway if it gets a two-thirds majority vote. The Congress can also declare war. The House of Representatives can also impeach the President.

The executive branch of the government puts the countries' laws into effect. The President of the United States is a member of the executive branch. The President must be at least 35 years old and be a natural citizen of the USA. The President is elected every four years and cannot serve more than two terms.

The population of the USA is more than 236 million people, most of the population lives in towns and cities. The USA is a very large country so it has several different climatic regions. The coldest regions are in the north and north-east. The south has a subtropical climate.

The USA is rich in mineral and natural resources. It produces copper, oil, iron ore and coal. It is a highly-developed industrial and agricultural country. Shipbuilding, electronics, automobile industry, aircraft industry, space researches are highly developed in the States. The US grows a lot of fruit, namely oranges, grapefruit, lemons. Wines and vegetables are shipped all over the States and to others parts of the world. The most important crops grown in the States are tobacco, soy-beans, peanuts, grapes and many others.

**Questions:**

1. How can you characterize the geographical position of the USA?
2. What is the total area and the population of the United States?
3. What are the main natural and mineral resources of the States?
4. What are the major cities of the USA?
5. How many states are there in the USA?
6. What is the legislative branch of the US government?
7. What are the jobs of the Congress?
8. Who can be elected President of the USA?

#### **4. THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND**

**Word list:**

- |   |   |
|---|---|
| 1. The United Kingdom of Great Britain and Northern Ireland – | Сполучене Королівство Великої Британії і Північної Ірландії |
| 2. urban  | міський   |
| 3. a constitutional monarchy                                  | конституційна монархія                                      |
| 4. the majority party leader                                  | лідер партії більшості                                      |
| 5. to be exercised  | виконувати  |
| 6. the Houses of Parliament                                   | Будинок Парламенту  |
| 7. the House of Lords   | Палата Лордів   |
| 8. the House of Commons                                       | Палата Общин  |
| 9. constituency   | виборчий округ  |
| 10 the Shadow Cabinet   | Тіньовий Кабінет  |
| 11. the judiciary branch                                      | законодавча влада   |

## **Text**

### **The United Kingdom of Great Britain**

The United Kingdom of Great Britain and Northern Ireland is situated on the British Isles. The British Isles consist of two large islands: Great Britain and Ireland, and about 5 000 smaller islands. Their total area is over 244 000 square kilometres. Great Britain is very irregularly shaped, being deeply indented by numerous gulfs of the sea; no part of the country is more than 120 km from the sea. The British Isles are separated from the Continent by the North Sea and the English Channel. The western coast of Great Britain is washed by the Atlantic Ocean and the Irish sea.

The surface of the British Isles varies very much. The north of Scotland is mountainous and is called the Highlands. The South which has beautiful valleys and plains is called the Lowlands. There are a lot of rivers in Great Britain but they are not very long. The Severn is the longest river while the Thames is the deepest and the most important one. The mountains, the Atlantic Ocean and the warm waters of the Gulf Stream make the climate of the UK mild the whole year round.

The population of the UK is about 80 mln people, about 80% of it is urban.

The United Kingdom is made up of four countries: England, Wales, Scotland and Northern Ireland. The UK is a highly developed industrial country. It produces and exports machinery, electronics, textile. One of the chief industries of the country is shipbuilding.

The UK is a constitutional monarchy with a Parliament and the Queen as Head of the State. The legislative power in the country is exercised by the Houses of Parliament. The British Parliament consists of two chambers: the House of Lords and the House of Commons. The members of the Houses of Commons are elected by the people from the constituencies in England, Wales and Northern Ireland. The house of Commons is the real governing body of the United Kingdom. The executive power is exercised by the Prime Minister and his Cabinet. The Government is formed by the political party which is supported by the majority in the House of Commons. The Prime Minister is the leader of die majority party and is appointed by the Queen. The Prime Minister chooses a team of ministers; twenty of the ministers are in the Cabinet. The second largest party becomes the official opposition with its own leader and the Shadow Cabinet. The two leading parties in Great Britain are the Conservative (the Tories) and the Labour Party. There is no written constitution in Great Britain, only precedents and traditions.

Britain's largest cities are: London with the population of about 9 mln people, Birmingham, Leeds, Glasgow, Sheffield, Edinburgh.

London, the capital of the United Kingdom, is built on the river Thames. It is a world centre for business and money trading. It is also the country's largest port and a cultural centre with numerous museums and theatres. Plays, musicals, operas and concerts attract large audiences, including many tourists.

#### ***Questions:***

1. What islands is the UK situated on?
2. What's the country's population?
3. What is the United Kingdom made of?

4. How can you characterize the surface of the British Isles?
5. What is the climate of the British Isles?
6. What are the main industries of the UK?
7. What is the political system of Britain?
8. What part does London play in the life of the United Kingdom?

## **5. OUR UNIVERSITY**

V.N.Karazin National University is one of the oldest academic and educational establishments in Ukraine. The university was founded in 1805 by one of the most outstanding academic and public figures of his day V.N.Karazin. The monument to V.N.Karazin is in front of the University building.

Thousands of students are being trained at the University at present. The teaching staff of the University comprises professors, assistant professors, lecturers and laboratory assistants of more than 100 different departments.

Kharkiv national university is a highly reputable academic institution in Ukraine. A great contribution to the world science was made by the well-known scientists such as Mechnikov, Beketov, Girshman, Trinkler.

The present-day science is related with the names of Berstein, Sintsov, Pogorelov, Bulakhovsky, Barabashov, Valter who greatly contributed to mathematics, physics, biochemistry, philology and other sciences.

Our University is known in many countries of the world, it has business relations with many leading universities in the USA, Germany, France, Australia. Our scientists and students often participate in different international conferences, seminars, summer schools.

It is necessary to say that the university is expanding establishing new faculties which are in demand in present-day situation. In perspective new specialities and faculties will be opened, such as biotechnology, medical physics, etc.

The University trains specialists in many fields of national economy at full-time and correspondence departments, both on state order and contract basis.

## **6. My future speciality**

My future speciality is ecology. I am a student of Kharkiv National University. I study at the department of ecology. Our department is relatively young.

The term " ecology " was introduced for the first time by a well-known naturalist Ernst Heckkel in 1886 as a science which studies " relations between organisms and environment". It is believed that ecology is an offspring of biology. Modern structure of ecology includes geocology, bioecology, chemical ecology, radiation ecology, ecology of man, etc. Ecological approach to our economic activity on Earth is the main task of humanity. Environmental awareness is the only sure way of preventing humanity from destroying the environment it needs in order to survive. Various private organizations like Greenpeace, Friends of the Earth and the World-Wide Fund for Nature try to raise environmental

consciousness. The complexity of many environmental issues makes it difficult to educate lay people about the problems. Acid rains, global warming, ozone problem, all kinds of pollution, - are but a few problems which we will have to deal with as specialists in future after graduation from the University.

I enjoy studying at the University and at our department because there are many really interested professors, assistant professors, lecturers who help us understand the pressing problems of our environment and prepare us for future challenges of life.

***Learn some phrases to be used in discussing a scientific publication:***

1. The Article (book) to be discussed is...
2. The articles represent reports given at the conference..
3. The author of the article is...
4. The book (collection of articles) was published in...
5. The title of the article is...
6. The book consists of.. .chapters...
7. The article contains a summary of...
8. At the beginning the author deals with.. .then... in the end,...
9. A detailed description is given to...
10. Much attention is given to...



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