

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ
«ХАРКІВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ»

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МЕТОДИЧНІ ВКАЗІВКИ

для підготовки аспірантів та здобувачів до складання
кандидатського іспиту з англійської мови

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Тести з лексики, граматики та читання призначені для аудиторної та самостійної роботи аспірантів та здобувачів, які готуються скласти кандидатський іспит з англійської мови.

Тести мають за мету перевірити рівень досягнення мовних знань та навичок на кінцевому етапі підготовки до іспиту. Тести можуть бути також застосовані для самоконтролю та самооцінки умінь ознайомлювального читання загальнонаукової літератури.

VARIANT I

Grammar

Choose the right variant (a, b, c or d)

1. The system is dangerous, ... must not use it.

- | | |
|-------------|---------|
| a) everyone | c) one |
| b) any | d) some |

2. She plans ... to study the alternatives and to implement them soon.

- | | |
|---------|-------------|
| a) also | c) either |
| b) both | d) not only |

3. ... into English, the article was published in a scientific journal.

- | | |
|---------------------------|----------------------------|
| a) To have translated | c) To have been translated |
| b) Having been translated | d) Having translated |

4. The trainee ... writing the report before the director came.

- | | |
|-------------------|-----------------|
| a) will finish | c) must finish |
| b) were finishing | d) had finished |

5. They like to work in the central public library and so ... I.
 a) do c) am
 b) like d) work
6. ... more attention is now being paid to environmental issues.
 a) Great c) Much
 b) Very d) Too
7. The device is very delicate and has to ... with great care.
 a) be handled c) handle
 b) be handling d) being handled
8. These methods of purifying industrial wastes ... much attention to recently.
 a) was given c) are being given
 b) have been given d) had been given
9. He ... have left a message for you, but I'm not sure.
 a) should c) would
 b) must d) might
10. When you wake up tomorrow, I ... over the Atlantic Ocean.
 a) would fly c) must fly
 b) will be flying d) can fly
11. ... she a skilled programmer, she would be offered a managerial position in a big company.
 a) Been c) Were
 b) Being d) Should
12. He didn't know if there ... a special mechanism underlying the interaction process.
 a) have existed c) existed
 b) was existing d) exist
13. Had I remembered his number, I would ... him.
 a) telephone c) telephoned
 b) be telephoning d) have telephoned
14. The European computer companies insisted that a more sympathetic relationship with the public authorities ... be built in Europe.
 a) should c) could
 b) must d) are to

15. They won't change their decision until they ... more reliable information.

- | | |
|--------|--------------|
| a) got | c) will get |
| b) get | d) would get |

16. They discussed their points when ... the contract.

- | | |
|----------------|------------------|
| a) have signed | c) having signed |
| b) signing | d) signed |

17. ... at from this angle the problem doesn't seem altogether insoluble.

- | | |
|------------------|-----------------|
| a) Looking | c) To be looked |
| b) Having looked | d) Looked |

18. He was sorry for ... the device before.

- | | |
|------------------|----------------------|
| a) hadn't tested | c) not having tested |
| b) not testing | d) wasn't testing |

19. The researchers were glad to ... financial support.

- | | |
|----------------------|--------------------|
| a) having given | c) being given |
| b) having been given | d) have been given |

20. Our firm seems ... a large number of outdated computers.

- | | |
|------------|-----------|
| a) to have | c) has |
| b) have | d) having |

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. We also have a series of public lectures given by guest speakers.

- | | |
|-----------|----------|
| a) number | c) means |
| b) matter | d) sort |

2. It is now common corporate policy for a company to have a mission statement explaining the aims of the business.

- | | |
|--------------|-------------------|
| a) strategic | c) international |
| b) domestic | d) organizational |

3. I want you to illustrate your point by providing some supporting examples.

- | | |
|--------------|--------------|
| a) receiving | c) obtaining |
| b) removing | d) supplying |

4. More and more students decide to study for a Master's degree to boost their knowledge.

- | | |
|------------|-------------|
| a) employ | c) evaluate |
| b) enhance | d) apply |

5. You are obliged to present an electronic version of your report.

- | | |
|-------------|-------------|
| a) informed | c) required |
| b) known | d) proposed |

6. The amount of money owed by some countries is so enormous that it will probably never be repaid.

- | | |
|-----------------|------------|
| a) insufficient | c) tiny |
| b) huge | d) average |

7. The experiments were conducted simultaneously in London and Rome.

- | | |
|---------------------|----------------------|
| a) at the same time | c) in the same place |
| b) step by step | d) from time to time |

8. When testing a hypothesis, every effort is made to eliminate subjective or biased ideas.

- | | |
|-------------|-----------|
| a) consider | c) avoid |
| b) modify | d) reduce |

9. People should be aware of the ecological threats caused by this kind of production.

- | | |
|-------------|--------------|
| a) ignorant | c) conscious |
| b) careful | d) opposite |

10. Scientists are still speculating about the origin of the Universe.

- | | |
|------------------|---------------|
| a) experimenting | c) arguing |
| b) thinking | d) explaining |

Reading Comprehension

Read each passage and choose the best answer (a, b, c or d) to each question

Text 1

The Stone Age was a period of history which began in approximately 2 million B.C. and lasted until 3000 B.C. Its name was derived from the tools and weapons that modern scientists found. This period was divided into Paleolithic, Mesolithic, and Neolithic Ages. During the first period, (2 million to 8000 B.C.) the first hatchet and use of fire for heating and cooking were developed. As a result of the Ice Age, which evolved about 1 million years into The Paleolithic Age, people were forced to seek shelter in caves, wear clothing, and develop new tools.

During the Mesolithic Age (8000 to 6000 B.C.) people made crude pottery and the first fish hooks, took dogs hunting, and developed a bow and arrow, which was used until the fourteenth century A.D.

The Neolithic Age (6000 to 3000 B.C.) saw humankind domesticating sheep, goats, pigs, and cattle, being less nomadic than in previous eras, establishing permanent settlements, and creating governments.

1. Into how many periods was the Stone Age divided?

- a) Two.
- b) Three.
- c) Four.
- d) Five.

2. Which of the following was developed earliest?

- a) The fish hook.
- b) The fish hatchet.
- c) The bow and arrow.
- d) Pottery.

3. Which of the following developments is *not* related to the conditions of the Ice Age?

- a) Farming.
- b) Clothing.
- c) Living indoors.
- d) Using fire.

4. Which period lasted longest?

- a) Paleolithic.
- b) Ice Age.
- c) Mesolithic.
- d) Neolithic.

5. The author states that the Stone Age was so named because ...

- a) it was very durable;
- b) the tools and weapons were made of stone;
- c) there was little vegetation;
- d) the people lived in caves.

Text 2

After inventing dynamite, Swedish-born Alfred Nobel became a very rich man. However, he foresaw its universally destructive powers too late. Nobel preferred not to be remembered as the inventor of dynamite, so in 1895, just two weeks before his death, he created a fund to be used for awarding prizes to people who had made worthwhile contributions to mankind. Originally there were five awards: literature, physics, chemistry, medicine, and peace. Economics was added in 1968, just sixty-seven years after the first awards ceremony. Nobel's original legacy of nine million dollars was invested, and the interest on this sum is used for the awards which vary from \$30,000 to \$125,000.

Every year on December 10, the anniversary of Nobel's death, the awards (gold medal, illuminated diploma, and money) are presented to the winners. Sometimes politics plays an important role in the judges' decisions. Americans have won numerous science awards, but relatively few literature prizes.

No awards were presented from 1940 to 1942 at the beginning of World War II. Some people have won two prizes, but this is rare; others have shared their prizes.

1. When did the first award ceremony take place?

- a) 1895.
- b) 1901.
- c) 1962.
- d) 1968.

2. Why was the Nobel prize established?

- a) To recognize great contributions to humanity.
- b) To resolve political differences.
- c) To honor the inventor of dynamite.
- d) To spend money.

3. In which area have Americans received the most awards?

- a) Literature.
- b) Peace.
- c) Economics.
- d) Science.

4. Which of the following statements is not true?

- a) Awards vary in monetary value.
- b) Ceremonies are held on December 10 to commemorate Nobel's invention.
- c) Politics can play an important role in selecting the winners.
- d) A few individuals have won two awards.

5. In how many fields are prizes awarded?

- a) 2.
- b) 5.
- c) 6.
- d) 10.

VARIANT II

Grammar

Choose the right variant (a, b, c or d)

1. Was ... present at the conference from the European management teams?
- a) someone c) anyone
b) none d) every
2. ... of this information will appear in the report.
- a) none c) no
b) not any d) nothing
3. We couldn't use the photocopier, it
- a) was repairing c) was being repaired
b) was repaired d) had been repaired
4. Neither the documents ... the letters are ready yet.
- a) either c) and
b) nor d) or
5. I had already worked in Research and Development before I ... my present company.
- a) joined c) was joining
b) would join d) have joined
6. This new machine is twice ... effective as the old one.
- a) such c) much
b) more d) as
7. It should ... that difficulties can arise at any stage.
- a) have remembered c) remember
b) be remembering d) be remembered
8. In the last few years, great progress in recycling techniques ... by this company.
- a) is made c) has been made
b) was being made d) had been made
9. Nowadays young people ask a lot of questions ... the democratic system is suitable to modern conditions.
- a) on c) about
b) if d) that

10. We ... the results of the voting by the end of the week.

- a) have been computing c) will compute
- b) will have computed d) will be computing

11. ... the designers looked for new ideas, the well-known companies would have already manufactured a modern portable device.

- a) Unless c) Had
- b) Should d) Could

12. He didn't know how long the staff training course

- a) will last c) can last
- b) last d) would last

13. The discussion ... very interesting. It is a pity I couldn't stay.

- a) must have been c) would be
- b) can't have been d) had to be

14. The results would improve if we ... more time on planning.

- a) will spend c) have been spending
- b) spent d) spend

15. It is necessary that these calculation techniques ... applied in parallel.

- a) must be c) have to be
- b) have been d) should be

16. The road repairs ... on the motorway had seriously delayed the traffic.

- a) to be carried out c) being carried out
- b) having carried out d) to carry out

17. When ... about that event, he replied nothing.

- a) asking c) asked
- b) having asked d) be asked

18. He objected to ... any modifications to the original design.

- a) making c) be made
- b) make d) being made

19. Such examples are too numerous ... as an exception.

- a) for treating c) to treat
- b) to be treated d) for being treated

20. The region is developing successfully, with rates of investment ... significantly.

- a) growing c) are growing
- b) are to grow d) be growing

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. The company has experienced a number of significant changes in the last few years.

- a) influenced c) required
b) undergone d) implemented

2. You should speak more loudly and more slowly when you want to emphasize an important point.

- a) introduce c) discover
b) stress d) report

3. The North Americans consume more energy and resources than any other nation.

- a) use c) waste
b) generate d) apply

4. One of the most important skills to learn is how to utilize your time effectively.

- a) take notice of c) take care of
b) pay attention to d) make use of

5. The outcome of the experiment was a complete surprise to everyone.

- a) beginning c) result
b) conclusion d) launch

6. He is a pleasant colleague, and very proficient at his job.

- a) skilled c) productive
b) profitable d) active

7. They alleged that they had been the first to discover those facts.

- a) proposed c) stated
b) explained d) demonstrated

8. The theory proved to be valid and was a major breakthrough in the history of science.

- a) true c) unique
b) valuable d) false

9. Communication between researchers is dependent on precise definition of concepts and ideas.

- a) faulty c) accurate
b) broad d) standard

10. The results obtained signify that we still know very little about these phenomena.
- a) convince
 - b) disprove
 - c) guarantee
 - d) indicate

Reading Comprehension

Read each passage and choose the best answer (a, b, c or d) to each question

Text 1

Procrastinators are people who have a chronic habit of putting things off, usually until the last minute and sometimes until it is too late altogether. The most common reason that procrastinators themselves give for their habit, which they are usually quite willing to talk about even if not willing to change, is that they are lazy. Other typical excuses are that they are undisciplined, brilliant but disorganized, or very poor at organizing their time.

Some procrastinators, however, almost against their very nature, actually get as far as trying to do something about their problem and seek help. Recent research with such people seems to suggest that their difficulties are much more complex than the procrastinators themselves think. The general conclusions are that such people have a **vulnerable** sense of self-worth, are particularly fearful of failure, and deliberately put things off precisely so that they never leave themselves time to produce their best work. The reason for their delaying tactics is that, since they do everything at the last moment and under pressure, the procrastinators can retain their illusion of brilliance without ever having to put it to the test.

vulnerable – *easy to attack or criticize*

1. The main idea in the first paragraph is ...

- a) the nature of procrastination;
- b) the undisciplined character of procrastinators;
- c) that disorganization is the procrastinator's main problem;
- d) the reasons procrastinators give for their behavior.

2. The main idea in the second paragraph is ...

- a) how procrastinators have an illusion of brilliance;
- b) how procrastinators seek help;
- c) research findings regarding procrastinators;
- d) that procrastinators always leave everything until the last moment.

3. A suitable title for this passage might be ...

- a) The Chronic Habit of Procrastination;
- b) Procrastination: Excuses and Reality;
- c) Disorganization, the True Cause of Procrastination;
- d) Procrastination: Never Do Today What You Can Put off until Tomorrow.

4. With which of the following would the author be most likely to agree?

- a) Procrastinators are usually unaware of the true causes of their problems.
- b) Laziness, lack of discipline, and poor organization of time are the major causes of procrastination.
- c) One thing most procrastinators do is seek help for their problem.
- d) A procrastinator would automatically fail any real test of his brilliance.

5. All of the following ideas appear in the passage. Which one does the author attribute most importance to?

- a) Some procrastinators seek help for their problem.
- b) Procrastinators, in general, put off things deliberately so as to avoid a real test.
- c) Procrastinators usually think that they are very bad at organizing their time.
- d) Procrastinators sometimes put off things until it is too late.

Text 2

In what now seem like the prehistoric times of computer history, the early post-war era, there was a quite widespread concern that computers would take over the world from man one day. Already today, as computers are relieving us of more and more of the routine tasks in business and in our personal lives, we are faced with a less dramatic but also less foreseen problem. People tend to be over-trusting of computers and are reluctant to challenge their authority. Indeed, they behave as if they were hardly aware that wrong buttons may be pushed, or that a computer may simply malfunction.

Obviously, there would be no point in investing in a computer if you had to

check all its answers, but people should also rely on their own internal computers and check the machine when they have the feeling that something has gone wrong. Questioning and routine double checks must continue to be as much a part of good business as they were in pre-computer days. Maybe each computer should come with the following warning: for all the help this computer may provide, it should not be seen as a substitute for fundamental thinking and reasoning skills.

1. What is the main purpose of this passage?

- a) To look back to the early days of computers.
- b) To explain what technical problems may occur with computers.
- c) To discourage unnecessary investment in computers.
- d) To warn against a mentally lazy attitude towards computers.

2. According to the passage, initial concerns about computers were that they might ...

- a) lead us into the post-war era;
- b) be quite widespread;
- c) take control;
- d) take over routine tasks.

3. The passage recommends those dealing with computers to ...

- a) be reasonably skeptical about them;
- b) check all their answers;
- c) substitute them for basic thinking;
- d) use them for business purposes only.

4. An 'internal computer' is ...

- a) a computer used exclusively by one company for its own problems;
- b) a person's store of knowledge and the ability to process it;
- c) the most up-to-date in-house computer a company can buy;
- d) a computer from the post-war era which is very reliable.

5. The passage suggests that the present-day problem with regard to computers is ...

- a) challenging;
- b) dramatic;
- c) insoluble;
- d) malfunctioning.

VARIANT III

Grammar

Choose the right variant (a, b, c or d)

1. Evidence for this hypothesis ... for two decades.
a) have been accumulated c) are being accumulated
b) is accumulating d) has been accumulated
2. They are sure that the funds ... by the end of the month.
a) will be receiving c) will have been received
b) will have received d) will have been receiving
3. Now new applications of the theory ... in many fields.
a) is explored c) has been explored
b) are being explored d) are exploring
4. He ... to advance strong arguments for the use of his own method.
a) has c) must
b) are d) needn't
5. Universal agreement concerning the problem ... yet to be reached.
a) is c) can
b) need d) have
6. They may ... their experiments long ago.
a) stop c) had stopped
b) have stopped d) stopped
7. I heard somebody ... my name.
a) mentioned c) mention
b) to mention d) mentions
8. They didn't want their plan ...
a) failed c) failing
b) fail d) to fail
9. Science is knowledge ... in an orderly manner.
a) arranging c) to arrange
b) arranged d) being arranged

10. In any technical achievement ... thing always lies ahead.

- a) best interesting c) the most interesting
b) much interesting d) many interesting

11. We hoped that our paper... a contribution to this debate.

- a) would be c) being
b) were d) to be

12. If the test data ... available, the calculations of the parameters will be made from them.

- a) is c) was
b) will be d) are

13. Provided they ... these new methods, they would apply them in their investigations.

- a) had considered c) would have considered
b) would consider d) considered

14. The experiment ... a failure if we hadn't taken the necessary measures in time.

- a) might be c) had to be
b) might have been d) had been

15. ... his research with his colleagues he saw some of its weak points.

- a) Having discussed c) Having been discussed
b) Being discussed d) Discussed

16. If ... economically, the supplies could last for a month.

- a) using c) to use
b) used d) having used

17. ... such processes is essential for a comprehensive programme of research.

- a) To be described c) Being described
b) Describing d) Described

18. When ... opinions with other people, you enrich your mind.

- a) being exchanged c) exchanging
b) exchanged d) having exchanged

19. ... between these two approaches, we need to have some further information.

- a) Chosen c) To choose
b) Having been chosen d) Being chosen

20. For this possibility ..., it is necessary to work much harder.

- a) to realize c) being realized
b) realizing d) to be realized

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. University regulations state that students must pass 18 modules to graduate.

- | | |
|------------|------------|
| a) promote | c) report |
| b) plan | d) specify |

2. Most economists forecast that China will become a leading world economy in the 21st century.

- | | |
|-------------|------------|
| a) agree | c) predict |
| b) consider | d) observe |

3. These countries are forced to rely on aid from richer nations in order to feed their population.

- | | |
|---------------|--------------|
| a) give up | c) go on |
| b) look after | d) depend on |

4. The new computer system created a lot of interest among potential users.

- | | |
|---------------|-----------|
| a) generated | c) lost |
| b) maintained | d) showed |

5. Employees are keen to recruit people who have at least a basic ability in computing.

- | | |
|---------------|-----------------|
| a) research | c) contribution |
| b) competence | d) application |

6. Preliminary results suggest that we are going in the right direction.

- | | |
|-----------------|----------------|
| a) experimental | c) encouraging |
| b) initial | d) ultimate |

7. Don't assume something is true until evidence confirms it.

- | | |
|-----------|-------------|
| a) accept | c) describe |
| b) deny | d) prove |

8. The University is to make sure that your English is sufficient.

- | | |
|--------------|-----------------|
| a) excellent | c) considerable |
| b) moderate | d) adequate |

2. Atoms generate rays of light ...

- a) because they are infrared;
- b) if they are active;
- c) due to their constant motion;
- d) when they become warm.

3. The majority of electromagnetic waves emitted by the human body ...

- a) are above 760 millimicrons in length;
- b) vary between 380 and 760 millimicrons in length;
- c) translate into thennographic techniques;
- d) are below 380 millimicrons in length.

4. Thermographic portraits show the body in different colors ...

- a) only if the patient is suffering from tumors or cancer;
- b) according to the activity of atoms in the different parts;
- c) because some parts are black and blue and others orange and red;
- d) when the atoms are active.

5. The atoms in tumors or cancerous areas are ...

- a) problems;
- b) isolated;
- c) red;
- d) very active.

Read the passage and mark the statements below T (true) or F (false)

Text 2

You are unlikely to know his name or his face, but he has changed your life for ever. This is the eccentric British scientist who created the World Wide Web, the information super-highway which has revolutionized the way we learn, work and communicate. Tim Berners-Lee has been compared with Edison, Watt and Pasteur, and ranks among the top most influential thinkers of the last century. Yet this shy man is so secretive that few people realize the web was the brainchild of just one person.

The few known facts about Berners-Lee appear on his official website. He works at the Massachusetts Institute of Technology, where he heads a non-profit think-tank dedicated to developing the web. And he believes nothing is more tedious than browsing

the web in the way millions do. "I'd rather go windsurfing with my kids," he says.

After graduating from Queen's College, Oxford, in 1976, with a first degree in physics, Berners-Lee worked for a number of UK firms where colleagues remember him as extremely bright if a little off-the-wall. One of his former employers referred to him as probably the cleverest person he had ever met. "He talked extremely fast, as if his mind was too fast for his mouth. When he was seeking inspiration he'd lie on his back looking at the sky. At other times he'd work in bare feet. But you could never criticize him because he was so productive."

In the late seventies Tim's first marriage, to Jane Northcote, a fellow programmer, ended and he headed off to the European Particle Physics Laboratory in Geneva. There he met his second wife Nancy. The daughter of a wealthy New York lawyer and, like him, a computer expert, she was working for the World Health Organisation. While the couple were courting, the germ of an idea was born. He admits he is "not very good at random connections", and was keen to write a computer program that could work like a human brain, making all the obvious links between the many different files stored on his computer. So he created a program which kept track of all the random links between different pieces of his research, and called it Enquire.

He quickly realized he could open up Enquire to make links with material stored on his colleagues' computers. One step further and researchers around the world would be able to share each other's data. And then, he thought, why stop there? Why not link up every computer in the world?

Berners-Lee launched his invention in 1991 and from that moment the web and internet mushroomed together. What he has done is of significance so great that if this were a traditional science, he'd won a Nobel Prize. The reason he has not cashed in is his real commitment to keeping the web open as a public good, in economic terms. Berners-Lee believes that the essence of the web is that it is a universe of information. And it wouldn't be universal if it was tied, in any way, to one company.

But the web has always been a tool, never an obsession, to him. He is very much in love with the real world. And often, at the end of the day, that's where you will find him.

1. The World Wide Web originated through joint work of a team of researchers.
2. Berners-Lee is not the web addict himself.
3. The idea of the web was on Tim's mind as early as his student years.
4. In Berners-Lee's view, no one can make the web their property.
5. Tim's colleagues have often criticized him for his eccentricity.

VARIANT IV

Grammar

Choose the right variant (a, b, c or d)

1. These phenomena ... since last century.
a) have been observed c) are observed
b) were observed d) are being observed
2. In a few years from now, this work ... us many discoveries of still greater importance.
a) has brought c) brings
b) will be brought d) will bring
3. For hundreds of years people ... of cosmic flights.
a) are dreaming c) have been dreamed
b) have been dreaming d) are being dreamed
4. The head of the laboratory ... to check everything by himself.
a) are c) had
b) be able d) must
5. There is no doubt that radio and TV are among the ... miracles of modern science.
a) most great c) greatest
b) more greater d) most greatest
6. The question ... at next Thursday's meeting concerns all of the laboratory staff.
a) to be discussing c) being discussed
b) discussed d) to be discussed
7. I watched them ... the equipment.
a) installed c) were installing
b) installing d) had installed
8. Nobody expected them ... a discovery.
a) to make c) made
b) would make d) make

9. The value of his research ... not to be underestimated.

- a) are c) can
b) must d) is

10. He must ... his attempts to obtain better results several years ago.

- a) give up c) gave up
b) have given up d) has given up

11. The early users of telephones never dreamed that there ... a wireless telephone.

- a) were c) would be
b) will be d) had been

12. This kind of method will be helpful provided more data ... available.

- a) will become c) became
b) becomes d) become

13. If the checking up ... so much time, we would have completed our work long ago.

- a) hadn't taken c) wouldn't take
b) didn't take d) wouldn't have taken

14. If he was able to complete his experiment, he ... you with the results obtained.

- a) surprised c) would have surprised
b) would surprise d) had surprised

15. When ... individually, these facts are not at all convincing.

- a) considering c) to consider
b) were considered d) considered

16. ... several alternatives, they decided to consider the last two in more detail.

- a) Having been discussed c) Having discussed
b) Discussed d) Had discussed

17. ... data during research is not an aim in itself.

- a) Accumulating c) To be accumulated
b) Accumulate d) Being accumulated

18. While ... a number of problems, this approach creates a few others.

- a) solving c) was solving
b) solved d) having solved

19. ... this goal, a new approach was adopted.

- | | |
|---------------|------------------|
| a) Achieve | c) Have achieved |
| b) To achieve | d) Achieved |

20. For us ... this problem was no simple matter.

- | | |
|------------|-------------|
| a) solve | c) to solve |
| b) solving | d) solved |

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. This concept was not recognized until the 16th century.

- | | |
|--------------|-----------|
| a) theory | c) notion |
| b) principle | d) method |

2. It was obvious that there was a pattern linking these events.

- | | |
|---------------|---------------|
| a) unexpected | c) indistinct |
| b) clear | d) right |

3. The lecturer concluded with a brief review of the main points.

- | | |
|--------------|-------------|
| a) started | c) finished |
| b) continued | d) added |

4. They have decided to launch an investigation.

- | | |
|------------|-------------|
| a) finance | c) assist |
| b) support | d) initiate |

5. We presume that they will be able to interpret the results correctly.

- | | |
|------------|------------|
| a) assume | c) confirm |
| b) support | d) realize |

6. It is essential that you check your research results to make sure they are correct.

- | | |
|--------------|-------------|
| a) vital | c) main |
| b) secondary | d) ordinary |

7. In some instances, there was no improvement, but generally the changes were a success.

- | | |
|--------------|----------|
| a) causes | c) tests |
| b) processes | d) cases |

8. Wages and inflation are closely linked, in that as one rises or falls so does the other.

- | | |
|-----------------|-------------|
| a) disconnected | c) affected |
| b) interrelated | d) observed |

9. The underlying cause of their refusal was lack of funds.

- | | |
|---------------|-------------|
| a) immediate | c) basic |
| b) reasonable | d) specific |

10. The results of the tests verified that our theory was correct.

- | | |
|--------------|---------------|
| a) recorded | c) discovered |
| b) explained | d) proved |

Reading Comprehension

Read the passage and then choose the best answer (a, b, c or d) to each question

Text 1

What does the job of a research scientist have to offer the young, the bright and the ambitious? The pay is poor, the hours are long and the job security is virtually non-existent. But picture yourself in a quiet room, holding a piece of knowledge in your hand that no-one else in the world yet knows or has ever known. You feel a rush of excitement. For three minutes, three hours, three days, that piece of knowledge is yours and yours alone, until you choose to share it with the world. You have stepped from the calm of the boat and into uncharted territory. This is the moment that every scientist dreams and hopes for.

What a scientist has to endure on the journey into the unknown will often be long days of despair: experiments that won't work, funding that disappears before you've even got off the ground, or a competitor who appears from nowhere and pips you at the post. In the shadow of defeat, you disconsolately shuffle back to the lab and begin seriously rethinking your career options.

But the journey itself can be fun, even if the outcome or the final destination turns out to be not quite what you had expected. The challenge

of pitting yourself against nature's myriad complexities can be endlessly rewarding. Why would anyone want to find out how the internal organs of a worm or snail develop, you might ask? Because – quite simply– we are not as distant from our fellow organisms as we would like to think. We are one small component in a wonderfully complex, deeply mysterious Universe.

1. The writer suggests that ...

- a) scientific research is a promising job only for the young;
- b) to do research you must be bright and ambitious;
- c) the researcher's working conditions may not be quite satisfactory;
- d) scientists prefer to work in a quiet atmosphere.

2. Every scientist dreams of the moment when he or she will be able ...

- a) to do research undisturbed in a quiet room;
- b) to start exploring some interesting pieces of knowledge;
- c) to share his or her findings with others as soon as possible;
- d) to stay, if only for a while, on his or her own with the new discovery.

3. In the second paragraph the writer describes ...

- a) the process and methods of scientific research;
- b) difficulties connected with scientific research;
- c) what results a scientist can expect from research;
- d) the qualities a scientist must have for doing research.

4. Which of the following is not mentioned among the factors that may discourage you from taking up a career in research?

- a) Low salary.
- b) Bad experimental results.
- c) Constant outside supervision.
- d) Insufficient financial support.

5. The key idea of the passage is that ...

- a) the final results of research can be quite unexpected and disappointing;
- b) the job of a research scientist, though difficult, is enjoyable and worth taking;
- c) the scientist has to cope with a lot of problems while doing research;
- d) we must study the Universe in order to understand ourselves better.

Read the passage and mark the statements below T (true) or F (false)

Text 2

Science isn't what it used to be. The image of the solitary researcher bent over a bubbling flask of chemicals is the stuff of history and Hollywood. In this information age, the tools of the trade have been revolutionized. Though "wet" science is still an important part of research, the computer is fast becoming the tool of choice in just about every field. From rudimentary databases of experimental data to simulations of the cosmos, computers are everywhere.

And it's not only academics who have experienced this sea change. Most R&D in industry would simply not be possible without computing power to support it. "The days when you could invent a drug on your own or with a small team writing things down on paper are all gone," says Andrew Davies, vice-president of Discovery IT at GlaxoSmithKline based in Harlow, UK.

Davies and experts like him are the unsung heroes of this quiet revolution. This new breed of expert-half scientist, half IT specialist – includes everyone from scientists who have learned to program and decided that pure research was not enough to satisfy them, to programmers and computer scientists who have found a wider application for their skills.

While traditional scientists are still far from being usurped by these newcomers, it is becoming more difficult to draw the line between IT experts in R&D and the true scientist. "The boundary between the workbench scientist and the IT support staff is increasingly blurred," says Davies. "Nowadays scientists have to be pretty IT savvy to know how to do their job. They may not have the know-how to build applications but there is so much data to be analyzed that many scientists are being turned into IT experts, information analysts and scientists all combined."

As is often the case in computing, research IT came of age with the help of enthusiasts. Perhaps the most popular application of computing to a scientific problem is the SETI @ home project (the Search for Extraterrestrial

Intelligence).

In recent years this grassroots trend has been bolstered by more formal initiatives at governmental level. The aim is to lay down an infrastructure for doing large-scale science on a global basis. The UK government's e-Science initiative promises to invest almost £200 million over the next 5 years. Grid computing will be a huge focus of this money, with scores of projects and jobs already created. Indeed, it seems there is no field of science that has been untouched by IT. Even the deepest fields of theoretical physics are enlisting the help of massive supercomputers to find answers to questions that pen and paper have been unable to crack.

1. The phrase 'wet science' is used to refer to exploration of the sea.
2. The 'quiet revolution' mentioned in the text is related to adopting novel research techniques.
3. The individual inventive effort of past years is now largely taken over by organized computerized research.
4. Traditional scientists have been fully replaced by a new breed of researchers.
5. Research IT was initiated at governmental level.

VARIANT V

Grammar

Choose the right variant (a, b, c or d)

1. He ... Professor Clark for ten years already.

- | | |
|---------------|--------------|
| a) knows | c) has known |
| b) have known | d) is known |

2. The last committee meeting ... on 19 August.

- | | |
|----------------|------------------|
| a) was held | c) had held |
| b) was holding | d) has been held |

3. Much effort ... this year to improve the situation in industry.

- | | |
|------------------|-------------------|
| a) has been made | c) will have made |
| b) is making | d) has made |

4. Some pressing problems ... at the symposium.

- | | |
|-----------------------|------------------------|
| a) will be discussing | c) will have discussed |
| b) will be discussed | d) will discuss |

5. He said they ... more funds for scientific research the following year.

- | | |
|-----------------|---------------|
| a) to be needed | c) needs |
| b) have needed | d) would need |

6. New sources of cheap energy ... to be found in future.

- | | |
|---------|--------|
| a) must | c) is |
| b) are | d) may |

7. He could ... to the conference, but he lost his invitation.

- | | |
|--------------|-------------|
| a) had gone | c) has gone |
| b) have gone | d) went |

8. It will be difficult for him ... the tests by May.

- | | |
|---------------|----------------|
| a) complete | c) completed |
| b) completing | d) to complete |

9. They didn't expect us ... so early.

- | | |
|----------------|--------------|
| a) had arrived | c) to arrive |
| b) arrived | d) arrive |

10. We didn't see them ... the laboratory.

- a) left c) leave
b) had left d) were leaving

11. ... such results she had to work hard.

- a) To achieve c) Achieved
b) Achieve d) Being achieved

12. ... experiments is impossible without some theoretical knowledge.

- a) Made c) Being made
b) To be made d) Making

13. The method ... above is the most accurate.

- a) describing c) having described
b) described d) to describe

14. The problem ... at the moment is not of primary importance.

- a) discussed c) being discussed
b) discussing d) having been discussed

15. Metals do not melt until ... to a definite temperature.

- a) have heated c) heated
b) will be d) heating heated

16. ... the measurements the experimenter then processed the data.

- a) Made c) Having made
b) Had made d) Having been made

17. ... to 0° C the ice began to melt.

- a) Having been warmed c) Having warmed
b) Has been warmed d) Had been warmed

18. I ... more if I had more time.

- a) will read c) had read
b) read d) would read

19. If your thesis ... the necessary requirements, it will be accepted by the Academic Council.

- a) will meet c) meets
b) will be met d) meet

20. If you had prepared your report, we ... to it at the last meeting.

- a) would listen c) listened
b) had listened d) would have listened

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. Transistors are successfully used for direct transformation of heat energy into electrical energy by means of thermal elements.

- a) through the use of
- b) without
- c) instead of
- d) apart from

2. This consideration is essential for taking effective measures.

- a) similar
- b) sufficient
- c) important
- d) complete

3. The results obtained so far appear to confirm the idea that Mars is really a cold lifeless desert.

- a) contradict
- b) put forward
- c) support
- d) put to question

4. This direction in research is better financed compared to some other studies.

- a) in terms of
- b) than
- c) except for
- d) due to

5. The problems of environmental protection have gone beyond national boundaries.

- a) inside
- b) parallel to
- c) out of
- d) towards

6. Vernadsky interpreted he biosphere as the global envelope produced on the Earth with the development of life.

- a) protected
- b) supported
- c) regarded
- d) provided

7. For want of a better analogy we shall turn to the one given in the earlier paper.

- a) In comparison with
- b) In terms of
- c) In accordance with
- d) Because of the absence of

8. The studies are under way at many laboratories.

- a) planned
- b) going on
- c) put off
- d) conducted in the underground

9. Scientific information is growing at a very high rate.

- | | |
|-------------|-------------|
| a) accuracy | c) wave |
| b) speed | d) per cent |

10. Quantum fields are modern versions of the classical fields introduced in the 19th century to account for such phenomena as electric and magnetic forces.

- | | |
|-----------|-------------|
| a) change | c) increase |
| b) reduce | d) explain |

Reading Comprehension

Read the passage and choose the best answer (a, b, c or d) to each question

Text 1

A university that calls itself 'The Open University' suggests that all other universities are closed. And this is true, because they are closed to everyone who does not have the time, the opportunity or the qualifications to study there. For these people, who missed the chance of going to a conventional university, 'The Open University' was set up in 1967.

Most of its students work at home or in full-time jobs and can study only in their free time. They need to study about ten hours a week. As the university is truly 'open', there are no formal entry requirements (none of the usual A Level examinations are asked for), and students are accepted on a 'first come, first served' basis. This is one of the more revolutionary aspects of the university.

Its students are, therefore, of all ages and come from very different backgrounds. Some, such as teachers, want to improve their qualifications. Others, like retired people or mothers whose families have grown up, are at the O. U. because they now have the time to do something they have always wanted to do.

Returning to 'school' is difficult for most students, for they have forgotten or never knew how to study, to write essays, and to prepare for exams. In addition to all the reading and writing assignments, students have got a lot of watching and listening to do, for there are weekly O. U. lectures broadcast on

BBC television and radio.

To keep people from just giving up or collapsing under all this work, each student gets the help and support of his own tutor, who he meets regularly and can telephone in any crisis or difficulty. At the meetings, students get to know other students on the course and join with them into self-help groups. These groups meet in each other's homes to discuss the texts and assignments; here too they find support and stimulation.

By the time the exams come in October, you feel much more confident and optimistic about your return to student life. Your final mark is based on the exam and the written assignments done during the year.

1. How does the author prove that this university is 'truly' open?

- a) By the fact that it is available to people of different backgrounds.
- b) Because there is no qualitative entrance selection.
- c) Owing to its self-help group organization.
- d) Because there are weekly lectures on BBC.

2. 'The Open University' is ...

- a) the same as conventional university;
- b) meant for getting support by the people in any crisis or difficulty;
- c) meant for those who have always had much free time;
- d) a chance to do what you were not able to do in the past.

3. To get access to 'The Open University' ...

- a) there is a full - time job requirement;
- b) all you need is to be able to study 10 hours a week;
- c) you must prove you can't go to a conventional university;
- d) you are required to get a personal tutor.

4. Why do students meet their own tutors?

- a) To get stimulation.
- b) To avoid much reading.
- c) To do all the listening and watching assignments.
- d) Instead of working in self-help groups.

5. The greatest difficulty for The “Open University” students consists in ...

- a) the absence of student skills;
- b) the need to meet regularly at each other's homes;
- c) having growing families;
- d) getting support from their tutor.

Read the passage and mark the statements below T (true) or F (false)

Text 2

Ashley George is honest enough to admit that he was a lousy chemist. “I kept breaking the glassware,” he says. “That’s why I went into computing.” A classically trained researcher, he studied first at the University of St Andrews, UK, and then took a PhD at the Royal Institution, London, in computational chemistry.

Now he is a global project manager in GlaxoSmithKline's Discovery IT division based in Stevenage, UK, where he fashions the demands of frontline chemists and biologists into working computer systems. “I always liked computers,” he explains. “For me it was more enjoyable than standing at the bench all day. You're always at the forefront of technology because if there's a technological breakthrough then you can save the company millions.”

George says he keeps his scientific interest satisfied by working with scientists on a daily basis. The subject areas he covers often vary. “It means you need to be quick on the uptake and open to new ideas. It means retaining the scientific attitude in mind, but then using a computer to get the solution implemented.” GlaxoSmithKline is the product of several mergers over the past few years, which means the results from different labs have to be integrated. At the moment George is merging the biological databases of the last two companies to merge – Glaxo Wellcome and Smith Kline Beecham - into one global database. Other tasks include developing Grid projects and systems to image scientists' notebooks so that they can be shared online.

“The thing that most distinguishes people in this sector is scientific

expertise,” he says. Many of his colleagues are scientists who have turned to what he jokingly calls the ‘dark side’. “At the end of the day, if you have been a scientist then you know the jargon and understand what the scientist wants. It means you can save a lot of time and deliver much more effective solutions.”

George has no regrets about his career move. “The thing I enjoy the most is the diversity of the job. You are never stuck in a rut, never do the same thing twice; you cover a vast area of science. I think it’s better paid than being a chemist, too – salaries tend to be benchmarked against the market rate for IT staff, rather than for scientists.”

1. Ashley George decided to change from chemistry to computing because he realized that he wasn’t a very good chemist.

2. Now he thinks he has made the right choice because his present post offers much more variety.

3. He is responsible for planning, agreeing and carrying out company mergers.

4. His present work lies within the domain of physical and biological sciences.

5. He says that introducing IT innovations can be crucial to the company’s financial success.

VARIANT VI

Grammar

Choose the right variant (a, b, c or d)

1. She ...a number of jobs since leaving school.

a) has had	c) have
b) has	d) have had
2. The new discovery...about all over the world.

a) is speaking	c) is being spoken
b) are spoken	d) will be speaking
3. The problem of overpopulation ... of some fifty years ago.

a) hadn't thought	c) weren't thought
b) wasn't thought	d) hasn't been thought
4. I think we ... the entire production process by next year.

a) will be mechanizing	c) will have been mechanized
b) will have mechanized	d) will be mechanized
5. The article said that they ... to reform the educational system.

a) was planned	c) was planning
b) were planned	d) were planning
6. Water ... to be purified to meet our needs.

a) is	c) are
b) must	d) can
7. You should ... earlier; the lecture started twenty minutes ago.

a) have come	c) came
b) come	d) had come
8. It wasn't easy for scientists ... these phenomena.

a) explained	c) explaining
b) explain	d) to explain
9. My parents wanted me ... an economist.

a) to become	c) became
b) become	d) would become

10. I watched them ... the experiment.

- a) were carrying out c) carried out
b) carrying out d) had carried out

11. ... such a device is not an easy thing.

- a) To design c) Being designed
b) Designed d) Design

12. ... research is obligatory for receiving a Master's degree.

- a) Did c) Doing
b) To be done d) Done

13. The work ... by this young scientist showed good results.

- a) having performed c) to be performed
b) performing d) performed

14. The procedure ... in the next chapter is not so complicated.

- a) will be discussed c) discussing
b) having discussed d) to be discussed

15. While ... investigations in this field he came across some interesting facts.

- a) was conducted c) having
b) conducting d) having conducted

16. ...his talk the speaker waited for comments.

- a) Having finished c) Had finished
b) Having been finished d) Finished

17. ... the necessary materials we were able to proceed with our research.

- a) Having been given c) Being given
b) Had been given d) To be given

18. What would you do if you ... in my position?

- a) had been c) were
b) would be d) was

19. If you ... a postgraduate student, you will have to undertake a programme of study and research.

- a) became c) become
b) will become d) becomes

20. If he had attended the seminars, he ... his exams.

- a) passed c) had passed
b) would have passed d) would pass

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. Modern Man has caused the extinction of five hundred species of animals since the industrial revolution.

- a) relocation
- b) evolution
- c) dying out
- d) survival

2. The proportion of living matter, in terms of weight, is insignificant compared to the mass of the Earth.

- a) based on
- b) by means of
- c) including
- d) due to

3. Debt payment should never amount to more than 10 % of a country's export earnings.

- a) go down
- b) spend
- c) equal
- d) install

4. The production of electronic devices requires both skill and precision.

- a) proficiency
- b) decision
- c) consideration
- d) accuracy

5. Experimental results without a good theory are nothing more than a handful of unrelated facts.

- a) pure
- b) unavailable
- c) insufficient
- d) isolated

6. This session should cover all the points on the agenda.

- a) close
- b) discuss
- c) open
- d) cancel

7. Land reform is not only essential for reasons of justice – it also increases food production.

- a) policies
- b) violation
- c) considerations
- d) strategy

8. The cells are placed in a special medium to make them grow normally.

- a) area
- b) environment
- c) position
- d) condition

9. The new installation doesn't meet the necessary specifications.

- | | |
|------------|------------|
| a) satisfy | c) measure |
| b) require | d) predict |

10. Just consider the impact that the car has had on modern life!

- | | |
|--------------|---------------|
| a) influence | c) conclusion |
| b) result | d) reason |

Reading Comprehension

Read the passage and choose the best answer (a, b, c or d) to each question

Text 1

The Internet, a global computer network which embraces millions of users all over the world, began in the United States in 1969 as a military experiment. It was designed to survive a nuclear war. Information sent over the Internet takes the shortest path available from one computer to another. Because of this, any two computers on the Internet will be able to stay in touch with each other as long as there is a single route between them. This technology is called packet switching. Owing to this technology, if some computers on the network are knocked out (by a nuclear explosion, for example), information will just route around them.

Most of the Internet host computers (more than 50 %) are in the United States, while the rest are located in more than 100 other countries. However, nobody knows exactly how many people use the Internet.

The most popular Internet service is e-mail. Most of the people who have access to the Internet use the network only for sending and receiving e-mail messages. In many developing countries the Internet may provide businessmen with a reliable alternative to the expensive and unreliable telecommunications systems of these countries. Commercial users can communicate over the Internet with the rest of the world and can do it very cheaply.

But saving money is only the first step. If people see that they can make money from the Internet, commercial use of this network will greatly increase. For example, some western architecture companies and garment centers already

transmit their basic designs and concepts over the Internet into China, where they are reworked and refined by skilled – but inexpensive – Chinese computer-aided design specialists.

However, some problems remain. The most important is security. The data are constantly being directed towards its destination by special computers called routers. Because of this, it is possible to get into any of computers along the route, intercept and even change the data. In spite of the fact that there are many strong encoding programs, nearly all the information is transmitted over the Internet without any form of encoding, i.e. ‘in the clear’. But when it becomes necessary to send important information over the network, these encoding programs may be useful. Some American banks and companies even conduct transactions over the Internet.

1. What is the author’s main purpose in this passage?

- a) To explain how to get access to the Internet.
- b) To show why the most popular Internet service is e-mail.
- c) To give an overview of the global computer network.
- d) To illustrate the disadvantages of the available telecommunications systems.

2. Packet switching is useful ...

- a) until any nuclear explosion takes place;
- b) because information can be routed around knocked out computers;
- c) provided all computers of the network are knocked out;
- d) only for conducting transactions within the United States.

3. The expression ‘in the clear’ is used in this passage to denote ...

- a) information encoding;
- b) data changing;
- c) no encoding programs used;
- d) message security.

4. The prediction that commercial use of the Internet will drastically increase is primarily based on ...

- a) e-mail being the most popular Internet service;
- b) possible use of cheaper labour;
- c) its utmost security;
- d) money-saving prospects.

5. 1969 saw the beginning of ...

- a) a basically different type of nuclear arms;
- b) the computer-aided design era;
- c) the Internet;
- d) telecommunication.

Read the passage and mark the statements below T (true) or F (false)

Text 2

When Ivo Piest asked to do his medical research placement at a biotech company, the response from his university tutors was not encouraging. “Are you crazy?” they said. “You're supposed to be at university.”

That was in 1996. Piest is now manager of business development at Galapagos Genomics, a biotech start-up founded jointly in 1999 by Belgian and Dutch partners. But his experience sums up the problem with Dutch biotech in the mid-1990s. Despite having world-class universities, academics’ attitude towards the commercial sector was at best ambivalent and at worst downright suspicious. “Scientists were focused on publishing results in journals, not patents,” says Haifen Hu of Bio Partner, an organisation funded by the government of the Netherlands to encourage biotech start-ups.

This anti-entrepreneurial culture, coupled with a less than helpful attitude from government, meant that the Netherlands began to lose the promising start it made in the biotech sector during the 1980s. Other countries surged ahead and, from being a leading player, the Netherlands dropped to seventh place in Europe. Only now is it beginning to claw back the lost ground, thanks to a series of government initiatives since 2005.

That year, the Dutch government gave Bio Partner the task of creating 75 new biotech companies in five years. It has already supported 60 new enterprises by handing out grants to early-stage projects, buying in equipment and other facilities for start-ups and giving advice.

“There was a general feeling that the Netherlands was lagging behind in science, genomics and the applications of genomics,” says Peter Folstar, head of

the Netherlands Genomics Initiative. His organisation aims to stimulate basic research. It has set up four centres of excellence on different life-science themes. Although these are based around a network of university labs, their research is not just driven by pure science. It is also focused on social and economic goals. Folstar is targeting bioinformatics in particular. Dutch research in the field has been weak, he says, and companies were finding it difficult to find suitable expertise.

There are enough qualified people in the Netherlands to form the core of a biotech industry. Some 0.17 per cent of the Dutch population has a life-science degree, which puts it on a similar level to the US with 0.27, Britain with 0.22, and Canada with 0.08. But when it came to commercializing ideas, the country performed poorly. In 1998 the country filed 70 patents per million inhabitants, compared with 190 in the US, 220 in Germany and 630 in Japan. But this is improving. In 2005, the Netherlands filed 218 patents per million inhabitants to the European Patent Office alone. Now BioPartner is being even more proactive about encouraging entrepreneurship. Rather than just supporting companies that come to it with ideas, it is actively scouting out potential business ideas in universities. “The vital thing is to give academics entrepreneurial role models,” says Piest, “so they can start thinking about how they can make money from their work.”

1. It is the government of the Netherlands that supported the foundation of BioPartner.

2. 75 grants have already been provided by the Dutch government to launch new biotech projects.

3. P. Folstar is in charge of an organization targeting on both fundamental and applied research.

4. The number of patent applications filed by the Netherlands doubled in the period of 1998-2005.

5. The Netherlands compare favourably with the major industrial countries in the labour market potential for a biotech industry.

VARIANT VII

Grammar

Choose the right variant (a, b, c or d)

1. It is necessary ... an account of his work.

- a) his writing
- b) for him to write
- c) that he will write
- d) in order that he writes

2. The evidence ... points to the existence of a common mechanism for these changes.

- a) presenting
- b) presented
- c) present
- d) are presented

3. I am not sure ... he knows anything about quantum mechanics.

- a) whether
- b) does
- c) or
- d) about

4. Although much has become known about the details of the genetic code, the problem is still far from

- a) solving
- b) having solved
- c) being solved
- d) be solving

5. The samples are supposed ... using the new technique.

- a) being analysed
- b) to analyse
- c) to be analysed
- d) analyzing

6. We will be able to control this process if we ... its nature.

- a) understand
- b) will understand
- c) have been understood
- d) understood

7. It was known as early as in the 19th century that the earth ... by a magnetic belt.

- a) has surrounded
- b) would be surrounded
- c) had been surrounded
- d) was surrounded

8. I could give an unprepared talk in English if it ... my work.

- a) will concern
- b) concerned
- c) would concern
- d) had concerned

9. The problem ... at the next staff meeting is of vital importance.

- a) considered
- b) having considered
- c) considering
- d) to be considered

10. This man ... in charge of our research group for a few years now.
 a) has been c) was
 b) is d) has to be
11. I expect some interesting facts ... at our next conference.
 a) are to report c) will have reported
 b) will be reported d) will report
12. L. Landau ... the conception of energy density matrix in 1927.
 a) was introducing c) introduced
 b) has introduced d) was introduced
13. I ... his lecture last week but I came too late.
 a) could have heard c) was able to hear
 b) could hear d) have heard
14. He ... to describe all the work but only present the important data.
 a) hadn't.. c) shouldn't
 b) wouldn't d) didn't have
15. Your reception room is bigger than ...
 a) our c) we
 b) ours d) us
16. We hadn't heard from him for a long time. He ... wrote nor telephoned.
 a) either c) neither
 b) nor d) didn't
17. We heard him ... this story yesterday.
 a) to tell c) tell
 b) told d) has told
18. What would you write about if you ... to write a popular science article?
 a) were c) had been
 b) would d) was
19. When ... to ionizing radiation, living cells cannot perform their normal functions.
 a) exposed c) have exposed
 b) exposing d) expose
20. Would you mind ... me a copy of your conference paper?
 a) having sent c) to send
 b) sending d) sent

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. The conference discussed new trends in this field of research.

- a) issues
- b) inventions
- c) tendencies
- d) discoveries

2. I'd like to emphasize the significance of such studies.

- a) importance
- b) uniqueness
- c) complexity
- d) relevance

3. It seems appropriate to make a few general comments here.

- a) interesting
- b) relevant
- c) valuable
- d) obvious

4. The author spends roughly twelve pages describing this process.

- a) exactly
- b) totally
- c) approximately
- d) largely

5. The body of scientific information is growing very fast.

- a) organism
- b) figure
- c) data
- d) amount

6. Much success has been gained due to changes in industrial processes and technology.

- a) realized
- b) expected
- c) adopted
- d) achieved

7. Computers have been evolving over hundreds of years.

- a) developing
- b) appearing
- c) discovering
- d) inventing

8. Efforts are needed in all countries to tackle pollution in an integrated manner.

- a) come across
- b) deal with
- c) bring about
- d) result in

9. Such structural changes may produce a marked effect.

- a) desirable
- b) considerable
- c) required
- d) satisfactory

10. These discoveries have been assisted by the developments in contemporary research techniques.

a) latest

c) conventional

b) comprehensive

d) traditional

Reading Comprehension

Read each passage and choose the best answer (a, b, c or d) to each question

Text 1

Suppose that we lined up our roughly 14 million United States businesses in order of size, starting with the smallest, along an imaginary road from San Francisco to New York. There will be 4,500 businesses to the mile, or a little less than one per foot. Suppose further that we planted a flag for each business. The height of the flagpole represents the annual volume of sales: each \$ 10,000 in sales is shown by one foot of pole.

The line of flagpoles is a very interesting sight. From San Francisco to about Reno, Nevada, it is almost unnoticeable, a row of poles about a foot high. From Reno eastward the poles increase in height until, near Columbus, Ohio – about four-fifths of the way across the nation – flags fly about 10 feet in the air.

But as we approach the eastern terminus, the poles suddenly begin to mount. There are about 300,000 firms in the country with sales over \$ 500,000. These corporations occupy the last 75 miles of the 3,000-mile road. There are 200,000 firms with sales over \$ 1 million. They occupy the last 50 miles. Then there are 1,000 firms with sales of \$ 50,000,000 or more. They take up the last quarter mile before the city limits, flags flying at cloud height, 5,000 feet up.

At the very gates of New York, on the last 100 feet of the last mile, we find the 100 largest industrial firms. They have sales of at least \$ 1.5 billion, so that their flags are already miles high. Along the last 10 feet of road, there are the 10 largest companies. Their sales are roughly \$ 10 billion and up: their flags fly 190 miles in the air, literally in the stratosphere.

1. What is the author's main purpose in this passage?

- a) To show why the largest firms are in New York.
- b) To provide an overview of the size of United States businesses.
- c) To explain how United States businesses use poles.
- d) To illustrate the geographical distribution of United States businesses.

2. The flagpoles mentioned in the passage increase in height from ...

- a) east to west;
- b) west to east;
- c) north to south;
- d) south to north.

3. The height of a flagpole for a particular firm is based on the firm's ...

- a) number of employees;
- b) profit in dollars;
- c) sales in dollars;
- d) total area of building space.

4. How many United States business firms have sales of at least \$50,000 million?

- a) 1,000.
- b) 3,000.
- c) 200,000.
- d) 300,000.

5. How high are the flagpoles on the segment of road containing the ten largest companies?

- a) 1 mile.
- b) 10 miles.
- c) 100 miles.
- d) 190 miles.

Text 2

John S. Pemberton invented Coca-Cola in 1886. His partner suggested running an advertisement for the drink in the Atlanta Journal that very year. In 1888, Asa Candler bought the Coca-Cola business and decided to make the product known through signs, calendars and clocks. The company began

building its global network when Robert Woodruff was elected president of the company in 1923. He succeeded in transforming Coca-Cola into a truly international product by setting up a foreign department, which exported Coca-Cola to the Olympic Games in Amsterdam in 1928. During World War II, he promised to bring Coca-Cola to every soldier in every part of the world.

Coca-Cola's advertising has always attempted to reflect changing contemporary lifestyles. Creating an international advertising campaign requires the talents of professionals in many areas, and extensive testing and research are always done before deciding which advertisements will finally be used. Celebrity endorsements have featured heavily – Cary Grant, Ray Charles and Whitney Houston are just three of the big name stars who have agreed to appear in Coca-Cola commercials.

After launching Diet Coke in 1982, the company saw its sales grow quickly. The drink is now the third most popular in the world. In 1985, the company tried changing the secret formula of Coca-Cola, but realised that Americans were very attached to the original recipe. The company listened to its consumers and quickly responded by returning the original formula to the market as 'Coca-Cola Classic'. Today, people in more than 160 countries around the globe enjoy drinking Coca-Cola. It is asked for more than 524 million times a day in more than 80 languages. The company intends to expand its global presence even further in the twenty-first century, particularly in developing markets.

1. Which of the following titles would be the best for the passage above?

- a) Coca-Cola and its advertising.
- b) Coca-Cola Classic.
- c) Famous people of Coca-Cola.
- d) Coca-Cola today.

2. What kind of making a product known to the public is not mentioned by the author?

- a) Press.
- b) Commercials.
- c) Small gifts.
- d) Presentations.

3. Which year saw actual internationalisation of the Coca-Cola business?

- a) 1982;
- b) 1928;
- c) 1985;
- d) 1888.

4. Which of the statements is not true?

- a) There had been no advertisement for the Coca-Cola drink before 1887.
- b) Coca-Cola managed to respond to the changing way of life.
- c) The product invented in the early 1980s is among the world's top five most popular drinks.
- d) More than half a billion people enjoy buying the drink daily.

5. Find the true statement.

- a) Coca-Cola is advertised in 80 languages.
- b) In the early 1940s the Coca-Cola rates of production slowed down considerably.
- c) The recipe for the Coca-Cola drink has not been disclosed to the public so far.
- d) Whitney Houston has agreed to draw the attention of professionals.

VARIANT VIII

Grammar

Choose the right variant (a, b, c or d)

1. There ... very little experimental work in this area so far.
a) was c) has been
b) will be d) is
2. This theory ... to be rejected on the ground that it could not interpret the whole range of data.
a) should c) had
b) was able d) were
3. The contributions contain ... original ideas than it could have been expected.
a) fewer c) minor
b) less d) smaller
4. ... mention is made of his earlier work on the subject.
a) None c) Neither
b) No d) Nothing
5. He told us that the meeting
a) were being postponed c) would postpone
b) had postponed d) had been postponed
6. If I ... more knowledgeable about the history of science, then, perhaps, I could answer this question.
a) had c) were
b) would d) should
7. The list has all the items ... alphabetically.
a) arranging c) to arrange
b) arranged d) being arranged
8. It is desirable that the selection ... with considerable care.
a) should be made c) had to be made
b) would be made d) was to be made

9. This ... by applying another procedure.

- a) may be achieved c) ought to achieve
b) may achieve d) have to be achieved

10. The work is not sufficiently advanced for any definite opinion of its validity

- a) to form c) being formed
b) forming d) to be formed

11. The theorem is proved ... quite usual methods.

- a) used c) having used
b) being used d) using

12. ... mainly at newcomers to this area, the book is written in simple language.

- a) To aim c) Aiming
b) Having aimed d) Aimed

13. The hypothesis ... next overcomes this difficulty.

- a) considering c) being considered
b) to be considered d) to have been considered

14. There was a strong objection to our ... this costly investigation.

- a) being carried c) carrying
b) to carry d) to be carried

15. We must first make clear ... the two important terms.

- a) the way we are going to use b) how are we going to use
c) which way are we to use d) is there a way to use

16. There are several alternatives,

- a) since the one with the least efforts solution is very difficult to pursue
- b) the one with the least efforts solution being very difficult to pursue
- c) though the one with the least efforts solution being very difficult to pursue
- d) despite the one with the least efforts solution is very difficult to pursue

17. The crucial question is, therefore,

- a) what are we dealing with
- b) whether we are dealing with a universal process
- c) when are we going to deal with this
- d) whenever we are dealing with a universal process

18. ..., it is more successful in asking questions than in answering them.
- a) The book raising some interesting issues
 - b) Having raised some interesting issues in the book
 - c) When the book raises some interesting issues
 - d) While the book raises some interesting issues
19. Other kind of knowledge is extremely important
- a) would we understand and interpret these data
 - b) that we understand and interpret these data
 - c) if we are to understand and interpret these data
 - d) for these data to understand and interpret
20. ... even for readers not particularly interested in the theory per se.
- a) Despite these flaws the paper is to be recommended
 - b) Given these flaws the paper is to be recommended
 - c) Seeing these flaws we can recommend the paper
 - d) We can recommend the paper provided these flaws

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. We cannot view this problem in terms of current concepts.
- a) on the basis of
 - b) in spite of
 - c) because of
 - d) along with
2. The great advantage of the so-called graphic computers is in solving design problems.
- a) weakness
 - b) illustration
 - c) strength
 - d) discomfort
3. It is usually more economical to buy large quantities of a product than small quantities.
- a) cheaper
 - b) more common
 - c) easier
 - d) more expensive

4. Human labour has the capacity to make use of the equipment and techniques available.

- a) out-dated
- b) reliable
- c) existing
- d) new

5. People seem to realize the potential dangers of some scientific discoveries.

- a) want
- b) appear
- c) can
- d) try

6. Properties of any region of space depend considerably on the presence and form of matter nearby.

- a) slightly
- b) generally
- c) in fact
- d) greatly

7. The weakening of the ozone layer is believed to be caused by the increasing amount of harmful chemicals in the atmosphere.

- a) to result from
- b) to influence
- c) to be followed by
- d) to lead to

8. Both reports predict that the temperature change will be greater in the Polar Regions than near the equator.

- a) object
- b) forecast
- c) undergo
- d) compare

9. Inequality is low in unchanging, 'traditional' society, but rises as economic growth accelerates.

- a) speeds up
- b) dates back
- c) arranges
- d) begins

10. Statistics may be defined as the branch of mathematics which is concerned with the use of collected numbers representing facts or measurements.

- a) cooperates with
- b) is opposed to
- c) increases
- d) deals with

Reading Comprehension

Read each passage and choose the best answer (a, b, c or d) to each question

Text 1

The first people who arrived in America from Holland built a town that they named New Amsterdam, in honour of the capital of their country in Europe. But forty years later, when Holland was at war with England, an English fleet under the command of the Duke of York appeared before New Amsterdam. The town had no army; the English occupied the town and renamed it New York. And this, as we know, is the name that has remained to this day.

The first people who came to America did not try to think about new names for the towns they built, but often gave the same name as the place they had come from. Along the east coast of the United States, we find such English names as Plymouth, Cambridge, London, and Boston. English names often appear with the word 'new' as a prefix: New England, New York, New Britain.

When the first English inhabitants left their homes on the east coast and moved to the west, they gave the new places the same names as those they had left behind. As a result, there are twenty-two towns in the United States that are called London, eighteen towns named Bristol, many named Chester, Windsor or New Windsor. This, of course, created a lot of difficulties for the postal service. There are towns named Philadelphia in four states besides the Philadelphia that is the largest city in the state of Pennsylvania. This explains the American tradition of writing the name of the state as well as the name of the city when addressing letters. If the sender does not do this, he can never be sure that his letter will go to the right address.

1. The author's main purpose in this passage is ...

- a) to provide a detailed study of European place names in America;
- b) to give a general explanation to current postal problems;
- c) to illustrate the role of the English language;
- d) to explain why the people who arrived in America moved to the west.

2. It's true that ...

- a) the city of New York was initially founded by the Dutch;
- b) New York appeared before New Amsterdam;
- c) New Amsterdam was the capital of Holland;
- d) the English had no army in New York.

3. Why does the word 'new' appear so often in the place names?

- a) Because the Duke of York ordered so.
- b) According to the European tradition.
- c) To facilitate postal services.
- d) Because the people who came to America were practical.

4. It's wrong to say that ...

- a) place names in the west are completely different from those in the east;
- b) there are 5 places called Philadelphia in the USA;
- c) America has an established tradition of addressing letters;
- d) Plymouth and Boston are English names.

Text 2

The weather may dominate conversation in Britain, but it rarely succeeds in weakening the British love of traditions and outdoor life. Even as late in the year as October and November, people think nothing of lining streets or standing around in parks to watch processions or firework displays. Three big outdoor events are held in this period: they are the London to Brighton Veteran Car Run, Guy Fawkes Night celebrations and the historic Lord Mayor's Procession and Show.

When the veteran cars set out on the London-Brighton run each November, they are celebrating one of the great landmarks in the history of motoring in Britain – the abolition of the rule that every 'horseless carriage' had

to be preceded along the road by a pedestrian. This restriction imposed by the Locomotives of Highways Act was withdrawn in 1896, and on November 14th of that year there was a rally of motor-cars on the London-Brighton highway to celebrate the first day of freedom – Emancipation day, as it has been known by motorists ever since.

Emancipation is still celebrated on the Brighton road each November, but nowadays there is an important condition of entry – every car taking part must be at least 60 years old. Hence the annual celebration has become known as the Veteran Car Run. It provides the gayest motoring spectacle of the year and a wonderful opportunity to see these fine old cars of immaculate paint and polish. Since 1930 the event has been organized by the Royal Automobile Club.

On the morning of the first Sunday in November veteran cars – many of them the last remaining examples of their kind in the world – assemble in London's Hyde Park for the drive to Brighton, 53 miles away on the south coast. You don't have to be a car enthusiast to find this colourful event fascinating. Many of the participants dress up in costumes to match their vehicles – creating an atmosphere of the past. At 8 o'clock comes the 'Off' and one by one they move down Constitution Hill. Through the southern suburbs they go out into the open countryside of Sussex. The Run is not a race. Entrants are limited to a maximum average speed of 20 miles per hour. The great thing is not speed but quality of performance.

1. The passage above ...

- a) gives a balanced overview of the 3 main autumn outdoor events in Britain;
- b) focuses on the restriction imposed by the Locomotives on Highway Act;
- c) highlights the Veteran Car Run;
- d) deals with some aspects of emancipation.

2. November 14, 1896 saw ...

- a) the introduction of horseless carriages in public transport;
- b) a convincing victory of women-drivers;
- c) the beginning of a major motoring celebration in Britain;
- d) the completion of the London-Brighton highway.

3. Cars are not allowed to take part in the Run if ...

- a) they are not registered in the Royal Automobile Club;
- b) the participants are not dressed in costumes;
- c) veteran drivers wear spectacles;
- d) they are less than 60 years old.

4. Which doesn't contribute to the quality of the performance?

- a) Costumes.
- b) Racing.
- c) Low speed.
- d) Immaculate paint and polish.

5. What exactly happens at 8 o'clock on the first Sunday in November?

- a) There comes an officer who starts the whole ceremony.
- b) Officials begin moving down Constitution Hill.
- c) Veteran cars assemble 53 miles away on the south coast.
- d) A signal to start the drive to Brighton is given.

6. According to the author, the Veteran Car Run is really a big outdoor event mainly because ...

- a) there is a speed limit;
- b) the event is organized by the Royal Automobile Club;
- c) it is popular not only with car enthusiasts;
- d) participants go out into the open countryside.

VARIANT IX

Grammar

Choose the right variant (a, b, c or d)

1. Even an average tornado has a power similar to ... of a large power station.

- | | |
|---------|-------------|
| a) this | c) one |
| b) that | d) the same |

2. I have to do some extra work now because one of my colleagues ... a holiday.

- | | |
|------------|---------------|
| a) has | c) is having |
| b) has had | d) would have |

3. If it ... a country, California would be one with more people than Canada and an economy the size of China's.

- | | |
|-------------|------------|
| a) would be | c) will be |
| b) has been | d) were |

4. So far no attempts ... to improve the situation.

- | | |
|--------------------------|------------------------|
| a) must be made | c) must be making |
| b) must have been making | d) must have been made |

5. The result of this study is intriguing, and surely worth ... in a larger piece of research.

- | | |
|----------------------|-----------------|
| a) to follow up | c) following up |
| b) to be followed up | d) followed up |

6. The danger of radiation for human health makes us ... different means of protection.

- | | |
|----------------------|--------------------|
| a) develop | c) to develop |
| b) to have developed | d) to be developed |

7. For the first time since the industrial revolution, ... than 10 % of American workers are now employed in manufacturing.

- | | |
|----------|---------------|
| a) least | c) as many as |
| b) fewer | d) farther |

8. It will take months for the new proof ... thoroughly.

- a) being checked c) checked
b) to be checked d) to check

9. The conference was devoted to the subject they ... for two years.

- a) had been investigating c) did investigate
b) investigated d) were investigating

10. Technological improvements are needed ... wind, solar and hydrogen can be more viable parts of the energy equation.

- a) lest
b) for
c) so that
d) unless

11. The more she worked, ...

- a) the less she achieved c) she did not achieve enough
b) she achieved not enough d) she was achieving less

12. this theory may seem it does have some weak points.

- a) No matter how convincing
b) In spite of convincing
c) Provided it is convincing
d) In order to convince

13. She hasn't begun working on her Ph.D. ... working on her master's.

- a) still because she is yet c) still while she is already
b) yet as a result she is still d) yet because she is still

14. . Not only has demand been high, but ... is coming from places that are hard to reach.

- a) the oil we have been finding c) finding the oil
b) unless we found oil d) we have been finding oil

15. He has received several scholarships

- a) not only because of his artistic but his academic ability
- b) for both his academic as well as his artistic ability
- c) because of his academic and artistic ability
- d) as resulting of his ability in the art and the academy

16. Of serious concern in software construction are techniques that permit us to recognize

- a) if not correct a given program is
- b) whether a given program is correct
- c) or is a given program correct
- d) isn't a given program correct

17. The students liked that professor's course because
- a) there was few if any homework
 - b) not a lot of homework was
 - c) there was little or no homework
 - d) of there wasn't a great amount of homework
18. Mention has already been made of the fact that scientific discoveries
- a) which cannot be wholly dealt with on a national scale
 - b) makes the problem far more complicated than it seems
 - c) proving scientists' new hypotheses
 - d) are greatly assisted by the developments in research techniques
19. It is important that this project should be adequately financed. Then... .
- a) a number of other difficulties will arise
 - b) there is little hope that it will succeed
 - c) its success will be assured
 - d) it will be too late
20. The chairman requested that
- a) the members studied more carefully the problem
 - b) the problem would be studied more carefully
 - c) with more carefulness the problem could be studied
 - d) the members study the problem more carefully

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. I do believe that the problem can be dealt with on three levels.
- a) interpreted
 - b) divided
 - c) solved
 - d) looked at
2. Governments should set limits for engine sizes and production.
- a) approach
 - b) introduce
 - c) balance
 - d) recognize

3. The book summarizes recent developments in this field.

- a) concludes
- b) ends with
- c) is full of
- d) sums up

4. Science provides the means of profiting from knowledge of the laws of nature.

- a) keeping up-to-date with
- b) encouraging
- c) taking advantage of
- d) improving

5. Technology is supplying science with more and more sophisticated instruments.

- a) providing
- b) demanding
- c) joining
- d) competing

6. That factory is producing more and more pollution.

- a) products
- b) raw materials
- c) harmful effect
- d) influence

7. Assessment of a scientific discovery requires personal involvement in the research.

- a) structure
- b) simulation
- c) development
- d) evaluation

8. What conditions must be observed so that you may obtain the desired result?

- a) noticed
- b) maintained
- c) measured
- d) prepared

9. Humankind can only survive by accepting responsibility and acting upon it.

- a) exchanging
- b) giving up
- c) taking on
- d) choosing

10. The intensive study of plasma could give us in the future an inexhaustible source of power.

- a) cheap
- b) non-traditional
- c) exciting
- d) renewable

Reading Comprehension

Read each passage and choose the best answer (a, b, c or d) to each question

Text 1

3M was born early last century as Minnesota Mining and Manufacturing. Since its establishment, 3M has known that it must continually innovate in order to survive. Indeed, the company has been responsible for the launch of 60,000 products, each of which is protected by a patent.

The successful performance of 3M over the years is due to several factors. Firstly, the company spends a large part of its annual budget on the creation, improvement and testing of products. The company also has a flexible structure which allows employees to change jobs frequently, from research to manufacturing or from manufacturing to marketing. The exchange of ideas and information is also a key aspect of 3M's strategy of constant innovation. Top technical people attend an annual meeting at the headquarters in St Paul where many 3M laboratories show their latest products. Another interesting fact about 3M is that it encourages staff to spend 15 % of their time on personal projects. It was this unusual policy which enabled 3M employee Arthur Fry to come up with one of the most famous 3M inventions – the Post-it note.

Spencer Silver was a 3M research chemist whose objective was to produce the strongest adhesive on the market. Although he did not succeed in his mission, he did develop another type of adhesive that had two interesting properties: it could be re-used and it left no residue on the material to which it was applied. However, no one at 3M could find a use for this product and it was put aside temporarily.

Ten years later, one of Silver's colleagues, Art Fry, discovered a new use for the abandoned adhesive. Fry sang in a choir and used strips of paper to mark the pages of his hymn book, which fell out every time he opened the book. He therefore decided to apply Silver's adhesive to the strips and found that they marked the pages and did not fall out when the book was opened. This was the first step in the discovery of the future

Post-it note.

1. Which company policy is not mentioned in the text?

- a) Job rotation.
- b) Global expansion.
- c) Information exchange.
- d) Product development.

2. The fact that the company Staff is encouraged to work on personal projects ...

- a) reduces work hours by 15 %;
- b) means doing overtime;
- c) stimulates inventions;
- d) brings about the need to exchange ideas and information.

3. It is true that ...

- a) you can enjoy using Post-it notes without staining the material;
- b) labour turnover in the company is very high;
- c) employees get regular 15 % bonuses;
- d) 3M has introduced 60 new products onto the market.

4. The Post-it note appeared ...

- a) as a result of carrying out the company's mission;
- b) because 3M could finance its launch;
- c) in spite of the properties of the adhesive used;
- d) as part of Fry's life experience.

5. It would be wrong to say that ...

- a) 3M is an abbreviation of Minnesota Mining and Manufacturing;
- b) 3M's experts meet at the head office once a year;
- c) Spencer Silver was able to produce the strongest adhesive on the market;
- d) Arthur Fry developed a basically new type of product.

Text 2

In 1993 a campaign was launched by the UK government to reduce the amount of domestic waste. Households were encouraged to recycle certain waste products and to sort and prepare others for collection at specific sites.

From there they will then be collected and transported to industrial waste treatment plants for recycling.

In Britain today, when the contents of the average domestic dustbin are analyzed, we find that, in terms of weight, 35 % of the total is composed of paper and cardboard, 22 % of kitchen waste, 12 % of plastics, 10 % of glass, 10 % of dust and ashes. 9 % is represented by metals and the remaining 2 % by textiles.

There are only a few items of domestic waste that can't be recycled. One common example is disposable nappies which, as their name suggests, have been designed to be thrown away. However, a lot of progress could be made especially towards reducing the quantities of kitchen waste which can easily be transformed into useful compost for use as garden fertilizer. Indeed, if more people chose to do this then the weight of the average dustbin would be reduced quite significantly.

In glass products the situation is more encouraging as nearly 20 % of the glass that is bought every year in the country is taken for recycling. This is partly due to the presence of more than 12,000 bottle banks which have been installed since 1977. However, the same is not true for tin and aluminium cans where, according to recent figures, only 10 % to 16 % of used containers are sent for recycling.

It is clear that the quantities of waste will only decrease if efforts are made both by households and also by local, government authorities. Special equipment such as collection trucks must be purchased. Such systems have already been adopted with considerable success in the last few years in several regions of Europe and their value has been proved. However, the question remains: will the UK government's target of a 25 % reduction be achieved in the near future? Only time will tell!

1. The author's main purpose in this article is ...

- a) to inform on a recent government measure;
- b) to draw the attention of local government authorities;
- c) to explain about waste reduction to households;
- d) to sound an environmental alarm.

2. What part of the average domestic dustbin can be made into a useful fertilizer?

- a) 0.1.
- b) less than 5 %.
- c) just above one fifth.
- d) – .

3. Find the false statement.

- a) Kitchen waste reduction largely depends on turning it into compost.
- b) Textiles are the least represented domestic wastes.
- c) Households were told to take certain waste products to special waste treatment plants.
- d) Nearly every fifth bottle goes for recycling.

4. As a result of the campaign, the amount of waste is expected ...

- a) to contain 12,000 bottles;
- b) to be strictly limited by local government authorities;
- c) to go down slightly;
- d) to diminish by a quarter.

5. It doesn't follow from the passage that the success of the campaign will depend on ...

- a) the availability of special trucks;
- b) foreign investments;
- c) households;
- d) local government authorities.

VARIANT X

Grammar

Choose the right variant (a, b, c or d)

1. Henry Ford's introduction of the assembly line vastly reduced the time it took.

- | | |
|------------------|-------------------|
| a) to make a car | c) for making car |
| b) making a car | d) a car to make |

2. In terms of population, Bangkok, Thailand, is quite a bit ... than Barcelona, Spain.

- | | |
|-------------|----------------|
| a) as large | c) the largest |
| b) larger | d) more large |

3. France, where this process ..., took an early lead in aluminum production.

- | | |
|------------------|--------------------|
| a) was developed | c) has developed |
| b) will develop | d) were to develop |

4. Until 1845, scientists failed to discover a process which ... separate aluminum from its various alloys.

- | | |
|----------|----------|
| a) must | c) will |
| b) could | d) ought |

5. Mr Williamson ... the firm soon whether or not he voluntarily turns in his resignation.

- | | |
|----------------|--------------------|
| a) has left | c) is to be left |
| b) are leaving | d) will be leaving |

6. ... he got the best grade on the quiz surprised everyone.

- | | |
|---------|---------|
| a) what | c) if |
| b) that | d) when |

7. That experiment demonstrates that people have trouble ... more than seven digits in sequence.

- | | |
|-------------------|--------------------|
| a) recalled | c) recalling |
| b) being recalled | d) having recalled |

16. It is not until exhaustive tests carried out by the Food and Drug Administration, ...

- a) that a new drug is allowed on the market
- b) is a new drug allowed to be put on the market
- c) there is a new drug placed on the market
- d) a new drug is allowed on the market

17 The project faced a whole series of difficulties, ranging from inadequate funding to unsuitable working premises. Yet, despite all of this... .

- a) their the organizers decided to abandon the plan
- b) it proved to be a great success
- c) it was a complete failure
- d) the difficulties proved impossible to overcome

18. Scientists know that the huge Hola crater in Arizona was made by a meteorite, but do not know exactly

- a) when did the meteorite hit the earth
- b) when the meteorite hit the earth
- c) when the meteorite the earth hit
- d) when did the earth hit the meteorite

19. For centuries, until the first astronauts reached the moon, men speculated as to... .

- a) what did the satellite's other side look like
- b) what the satellite's other side look like
- c) what looked like the satellite's other side
- d) what like the satellite's other side looked

20. While dozens of popular authors claimed to be experts on the subject,

- a) there were many other such authors
- b) some of the authors were not really so popular
- c) none had studied it in a systematic way
- d) there being no experts on other subjects

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. The shortcomings of this analysis of the problem have been discussed carefully.

- a) advantages
- b) perspectives
- c) difficulties
- d) drawbacks

2. Many environmentalists feel that more deep-going changes in production are necessary.

- a) ecologists
- b) manufacturers
- c) educationalists
- d) reformists

3. The measurements are carried out with conventional equipment.

- a) modernized
- b) ordinary
- c) unique
- d) special

4. Have they found any direct evidence against that widely spread conception?

- a) opinion
- b) proof
- c) view
- d) principle

5. Conservation of nature often conflicts with agriculture and industry interests.

- a) observation
- b) explanation
- c) preservation
- d) exploration

6. This system lifetime was greatly increased due to the application of this device.

- a) utilization
- b) demonstration
- c) modification
- d) installation

7. The development of electric cars is under way in a number of countries.

- a) in progress
- b) under discussion
- c) out of question
- d) in advance

8. Various ideas have been proposed to account for these phenomena.

- a) record
- b) investigate
- c) describe
- d) explain

9. From the earliest times, men have observed changes that occur in nature.

- a) take place
- b) result
- c) meet
- d) take part

10. Articles in daily use which are made of plastics are familiar to everybody.

- a) papers
- b) objects
- c) subjects
- d) packages

Reading Comprehension

Read the passage and choose the best answer (a, b, c or d) to each question

Text 1

One of the greatest economic problems for those settlers in Nebraska in the last quarter of the 19th century was fuel. Little of the state was forested when the first settlers arrived and it is probable that by 1880, only about one-third of the originally forested area remained, down to a mere 1 percent of the state's 77,000 square miles. With wood and coal out of the question, and with fuel needed year-round for cooking, and during the harsh winter months for heating, some solution had to be found.

Somewhat improbably, the buffalo provided the answer. Buffalo chips* were found to burn evenly, hotly, and cleanly, with little smoke and, interestingly, no odor**. Soon, collecting them became a way of life for the settlers' children who would pick them up on their way to and from school, or take part in competitions designed to counteract their natural reluctance. Even a young man, seeking to impress the girl he wanted to marry, would arrive with a large bag of chips rather than with a box of candy or a bunch of flowers.

*Buffalo chips – *excrement of a large animal of the cattle family.*

**Odor – *a smell, usually an unpleasant one.*

1. What is the main topic of this passage?

- a) The solution to the Nebraskan settlers' fuel problem.
- b) Life in Nebraska in the late nineteenth century.
- c) The importance of the American buffalo.
- d) Deforestation in Nebraska in the late nineteenth century.

2. Which of the following statements in not true according to the passage?

- a) Nebraska was not a densely-forested state even before the settlers arrived.
- b) The children enjoyed collecting the buffalo chips.
- c) The children spent a lot of time collecting the chips.
- d) Buffalo chips were satisfactory as a fuel.

3. According to the passage, how much of Nebraska was forested when the first settlers arrived?

- a) About 33 percent.
- b) About 1 percent.
- c) About 66 percent.
- d) About 3 percent.

4. The passage implies that buffalo chips were needed ...

- a) in greater amounts in summer;
- b) in greater amounts in winter;
- c) only in summer;
- d) only in winter.

5. Which of the following does the author not express surprise at?

- a) The children needed competitions to stimulate them.
- b) The buffalo chips gave off no smell.
- c) Buffalo chips were the answer to the settlers' fuel problem.
- d) Young men took bags of buffalo chips to their girl friends.

Read the passage and mark the statements below T (true) or F (false)

Text 2

McGaffic College is a large school which not only boasts a beautiful campus, but also is surrounded by charming rural villages. It offers advantages,

such as small classes, individual counseling and private dorm rooms, which few schools of its size can match. The college offers degrees in a wide range of liberal arts fields, though no longer in oriental languages, and has a wide-ranging sports program embracing most of the usual collegiate sports, with the exception of football. In contrast to nearby Perkins College, which requires students to live off-campus, McGaffic houses all its all-male student population in dormitories on campus.

The college has a distinguished teaching faculty and, in addition to highly-qualified lecturers, has at least three artists-in-residence on campus each year. The college's strong liberal arts bias underwent a significant shift in the mid-sixties, when it invested in a new science building, instead of the new theater which many alumni, including two former state governors would have preferred. However, the policy changes seem to have paid off as all of the science departments, with the sole exception of the chemistry department, have had representatives win awards in national science competitions.

Given this success, other policy changes might be expected, but the least likely, in the near future at least, would be for McGaffic to become co-educational.

1. McGaffic College has many desirable features unusual for a large school.
2. Most exceptional in its inter-collegiate sports program is the McGaffic College football team.
3. Many former students did not approve of the college's trend away from the liberal arts in the sixties.
4. The college has graduated at least two politicians.
5. McGaffic College welcomes applications from young men and women throughout the country.

VARIANT XI

Grammar

Choose the right variant (a, b, c or d)

1. The seminar course in theoretical physics ... in Kharkiv is scheduled for May – June.

- | | |
|---------------------|----------------------|
| a) having been held | c) to be held |
| b) would be held | d) to have been held |

2. Recently a considerable number of works ... on various problems of elementary particles physics.

- | | |
|------------------|------------------|
| a) have appeared | c) had appeared |
| b) appear | d) are to appear |

3. If I had not been so busy with my thesis last year, I ... a trip to Britain.

- | | |
|---------------------|------------------|
| a) might have taken | c) might take |
| b) took | d) may be taking |

4. Some of our older conceptions ... presently, since they have come into conflict with new experimental findings.

- | | |
|-----------------|----------------------|
| a) are revising | c) revised |
| b) have revised | d) are being revised |

5. He suggested ... a program committee for this symposium.

- | | |
|------------------|-----------------|
| a) to set up | c) setting up |
| b) having set up | d) to be set up |

6. It is important that the introduction of these innovations ... the progress of science.

- | | |
|-------------------|-----------------------|
| a) should promote | c) should be promoted |
| b) be promoting | d) be promoted |

7. When ... to X-rays, this substance emits light.

- | | |
|-------------------------|------------------|
| a) exposing | c) exposed |
| b) to have been exposed | d) to be exposed |

8. We had a hope that these investigations ... the gap in our understanding of the mechanism.

- | | |
|----------------|--------------------|
| a) will fill | c) had been filled |
| b) were filled | d) would fill |

9. The gravitational forces do not let the planets ... the solar system.
- a) leave
 - b) leaving
 - c) to be left
 - d) to leave
10. According to the last-year program, the first stage of the experiment ... to take months.
- a) has
 - b) was
 - c) did
 - d) would
11. ... an atom has a nucleus in its centre, which is positively charged, was discussed by Ernest Rutherford in 1911.
- a) Knowing that
 - b) When he discovered
 - c) The fact that
 - d) Provided
12. It is interesting to know
- a) do they share our opinion
 - b) whether do they share our opinion
 - c) whether they share our opinion
 - d) they share our opinion
13. Ultraviolet light, ... , would kill most living organisms.
- a) should it reach the Earth unshielded
 - b) can reach the Earth unshielded
 - c) to reach the Earth unshielded
 - d) for the Earth to reach unshielded
14. ... , the more reliable are the results.
- a) In a better experimental technique
 - b) For the experimental technique to be better
 - c) The better the experimental technique
 - d) It is a better experimental technique
15. I am going to complete one series of experiments by next year
- a) the more effort it takes
 - b) no matter how much effort it will take
 - c) why should it take so much effort
 - d) that it didn't take much effort
16. ... at least a part of the ancient heritage was still in circulation up to the Renaissance.
- a) The scientists of the Middle Ages are known
 - b) However, the scientists of the Middle Ages
 - c) It was in the Middle Ages that scientists
 - d) Thanks to the scientists of the Middle Ages
17. The interaction model ... does not readily apply to more recent data.
- a) have been discussed here
 - b) have to be discussed here
 - c) which has been discussed here
 - d) it is being discussed at the moment
18. ... that I have to skip over the introductory review.
- a) Having so little time left for my paper
 - b) The less time I have for my paper
 - c) I have so little time left for my paper
 - d) For me to have so little time left for my paper

19. The zero ... was known in Europe by the year 1000 A. D.

- a) together with the rest of our 'Arabic' numbers
- b) and the rest of our 'Arabic' numbers
- c) had been among the rest of our 'Arabic' numbers
- d) is among the rest of our 'Arabic' numbers

20. ... man's influence is changing the biosphere and it is passing into a new state.

- a) In spite of
- b) It is mainly due to
- c) Progress made both in science and technology accounts for
- d) With the present-day scientific and technological progress

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. The engineers hope to eliminate these negative factors.

- a) minimize
- b) remove
- c) restrict
- d) discover

2. The question is whether the model can describe adequately the process concerned.

- a) completely
- b) thoroughly
- c) properly
- d) considerably

3. Considerable changes are currently taking place in the organization of research.

- a) rapidly
- b) shortly
- c) recently
- d) now

4. The issues dealt with under this topic aroused a heated discussion.

- a) listed
- b) considered
- c) obtained
- d) arisen

5. The laboratory is equipped with up-to-date instruments.

- a) modern
- b) universal
- c) precise
- d) available

6. When discussing this issue it may be useful to turn to nature as a model.

- a) theory
- b) copy
- c) problem
- d) hypothesis

7. Without using such materials it was impossible to perfect their operation.
- a) change
 - b) guarantee
 - c) improve
 - d) check
8. The conflict between man and nature can be avoided by encouraging a scientific ecological education.
- a) simulating
 - b) promoting
 - c) creating
 - d) improving
9. In most cases natural materials are substituted for by synthetic ones.
- a) altered
 - b) replaced
 - c) strengthened
 - d) added
10. Study of their essential properties is going on a large scale.
- a) fundamental
 - b) negative
 - c) positive
 - d) desirable

Reading Comprehension

Read the passage and choose the best answer (a, b, c or d) to each question

Text 1

The food we eat seems to have profound effects on our health. Although science has made enormous steps in making food more fit to eat, it has, at the same time, made many foods unfit to eat. Some research has shown that perhaps eighty percent of all human illnesses are related to diet and forty percent of cancer is related to the diet as well, especially cancer of colon. Different cultures are more prone to contract certain illnesses because of the food that is characteristic in these cultures.

That food is related to illness is not a new discovery. In 1945, government researchers realized that nitrates and nitrites, commonly used to preserve colour in meats, and other food additives, caused cancer. Yet, these carcinogenic additives remain in our food, and it becomes more difficult all the time to know which things on the packaging labels of processed food are helpful or harmful.

The additives which we eat are not all so direct. Farmers often give penicillin to beef and poultry, and because of this, penicillin has been found in the milk of treated cows. Sometimes similar drugs are administered to animals not for

medicinal purposes, but for financial reasons. The farmers are simply trying to fatten the animals in order to obtain a higher price on the market. Although the FDA has tried repeatedly to control these procedures, the practices continue.

1. How has science done a disservice to mankind?

- a) Because of science, disease caused by contaminated food has been virtually eradicated.
- b) It has caused a lack of information concerning the value of food.
- c) As a result of scientific intervention, some potentially harmful substances have been added to our food.
- d) The scientists have preserved the colour of meats, but not vegetables.

2. What are nitrates used for?

- a) They preserve flavour in packaged foods.
- b) They preserve the colour of meats.
- c) They are the objects of research.
- d) They cause the animals to become fatter.

3. What does FDA mean?

- a) Food Direct Additives.
- b) Final Difficult Analysis.
- c) Food and Drug Administration.
- d) Federal Dairy Additives.

4. The word *carcinogenic* means most nearly the same as ...

- a) trouble-making;
- b) colour-retaining;
- c) money-making;
- d) cancer-causing.

5. Which of the following statements is not true?

- a) Drugs are always given to animals for medical reasons.
- b) Some of the additives in our food are added to the food itself and some are given to the living animals.
- c) Researchers have known about the potential hazards of food additives for over sixty years.
- d) Food may cause forty percent of cancer in the world.

Read the passage and mark the statements below T (true) or F (false)

Text 2

Expressing Yourself in English is an interesting new textbook with some variations from the traditional in its approach. It would seem appropriate for self-study, especially when used in conjunction with the cassette, but is primarily intended for classroom use. Indeed, the text itself contains notes to the teacher, rather than theses appearing in a separate teacher's guide.

Each unit contains three readings, all of which, except for those appearing in the ninth and final unit, are illustrated. The teacher's notes indicate that the teacher should refrain from answering students' questions about these readings until each student has worked through all the reading comprehension exercises without help.

Among the book's distinctive features is the fact that it contains a more extensive list of affixes than any other written for this level, while exercises are provided which allow students to be creative with the English they learn. One hint for the teachers and students alike is that students should not expect to be successful with the examinations offered in the body of the text unless they study outside of class and memorize the dialogue that introduces each unit.

In order to keep the price low, the book is paperbound and all pictures and illustrations are in black and white. The textbook will be accompanied by a workbook to be published later this year.

1. Although suitable for students who want to study alone, the book was written to be used in groups.
2. Teachers are instructed not to answer any student questions about reading comprehension.
3. Exercises are included, which allow students to be original and to express their own ideas with the English they know.
4. Students should be advised that outside study on their part is essential for their successful completion of the book.
5. Textbooks and workbooks are now available at a very reasonable price.

VARIANT XII

Grammar

Choose the right variant (a, b, c or d)

1. Active research on genetic problems ... for about seventy years now.

- | | |
|------------------------|------------------------|
| a) was carried on | c) is being carried on |
| b) has been carried on | d) is carried on |

2. When I ... my present work, I will start writing my doctoral thesis.

- | | |
|----------------------|-------------------------|
| a) will be completed | c) complete |
| b) will complete | d) have been completing |

3. I ... through a few English papers last week but I couldn't find a spare minute.

- | | |
|-----------------------|---------------------|
| a) should look | c) could look |
| b) should have looked | d) had been looking |

4. He usually ... his work day with checking the apparatus.

- | | |
|-------------|----------------|
| a) starts | c) has started |
| b) starting | d) is starting |

5. I wish you ... in touch with him last week,

- | | |
|--------------|-----------------|
| a) would get | c) had got |
| b) got | d) were getting |

6. I am now busy ... an exhibition at the institute.

- | | |
|-----------------------|--------------------|
| a) to arrange | c) arranging |
| b) have been arranged | d) to be arranging |

7. Ph.D. degree at this institute in 1984.

- | | |
|-----------------|------------------------|
| a) was received | c) have been receiving |
| b) received | d) had received |

8. The problem is interesting enough ... much attention.

- | | |
|--------------------|--------------------|
| a) will attract | c) being attracted |
| b) to be attracted | d) to attract |

9. It was shown thirty years later that G. Mendel's conclusions ... correct.

- | | |
|-------------|--------------|
| a) had been | c) are |
| b) were | d) have been |

a) obtained c) was obtained
b) obtaining d) having been obtained

a) had, in fact, never been observed c) is likely to be observed
b) observations were made d) as evidenced by recent observations

a) Opened the conference c) The longer the speech
b) When opening the conference d) It was

a) the atomic nucleus was discovered when
b) when the atomic nucleus was discovered
c) when was the atomic nucleus discovered
d) when was discovered the atomic nucleus

a) For a positive ion to be formed c) It is a positive ion that is formed
b) The formation of a positive ion d) Being a positive ion to form

- a) however difficult to draw a line between them
- b) drawing a sharp line between them
- c) that it's difficult to draw a sharp line between them
- d) leads to drawing a sharp line between them

a) to take any form c) can take any form
b) any form to be taken d) whatever form it may take

a) however changing animal behaviour c) the more we observe animal behaviour
b) as a result of our observation d) whether the change we observe in animal behaviour

- a) Although scientists explain well-known facts
- b) Can't scientists only explain well-known facts
- c) Not only do scientists explain well-known facts
- d) Scientists explaining well-known facts

19. ... that attracted most attention.

- a) It was Brown's report
- b) It being Brown's report
- c) Having been Brown's report
- d) This is Brown's report

20. The more accurate the calculations

- a) so the results
- b) are reliable results
- c) the more reliable are the results
- d) for the results to be reliable

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. The techniques are very simple but accurate.

- a) steps
- b) technologies
- c) methods
- d) stages

2. Your thesis meets the necessary requirements.

- a) levels
- b) standards
- c) measurements
- d) topics

3. You badly need your supervisor's assistance.

- a) attendance
- b) help
- c) application
- d) hope

4. When are you going to complete your work?

- a) make
- b) start
- c) continue
- d) finish

5. The warehouse was transformed into a laboratory.

- a) changed
- b) extended
- c) expanded
- d) enlarged

6. Einstein's theories prevailed throughout the 20th century.

- a) demonstrated
- b) proved
- c) dominated
- d) prevented

7. Marie and Pierre Curie were able to isolate a new radioactive element.
- | | |
|-------------|-------------|
| a) create | c) invent |
| b) separate | d) find out |
8. Efforts are being made to preserve clean air in big cities.
- | | |
|------------|------------|
| a) purify | c) utilize |
| b) protect | d) process |
9. A microscope magnifies invisible objects so we can see them.
- | | |
|------------|--------------|
| a) expands | c) minimizes |
| b) reduces | d) enlarges |
10. The best way to solve a problem is to find the source.
- | | |
|-----------|----------------|
| a) result | c) consequence |
| b) effect | d) origin |

Reading Comprehension

Read the passage and choose the best answer (a, b, c or d) to each question

Text 1

One of the shared assumptions in computer research is that talking to computers is a very good idea. Such a good idea that speech is regarded as the natural interface between human and computer.

Each company with enough money to spare and enough egotism to believe that it can shape everyone's future now has a 'natural language' research group. Films and TV series set in the future use computers with voice interfaces to show how far technology has advanced from our own primitive day and age. The unwritten assumption is that talking to your computer will in the end be as natural as shouting at your relatives.

The roots of this shared delusion lie in the genuine naturalness of spoken communication between humans. Meaning is transferred from person to person so effortlessly that it must be the best way of transferring information from a human to another object.

This view is totally misguided. Computers do not experience life as people do – it is shared human experience which enables people to understand each other precisely in a conversation where a transcript would make very little

sense. Unfinished sentences, in-jokes, catchphrases, hesitation markers like ‘er’ and ‘you know’, and words whose meaning is only clear in the context of that one conversation are no bar to human understanding, but baffled early attempts at computer speech recognition. It is true that recent advances in linguistic research and artificial intelligence address this problem, but they address it only in part. The problem essentially remains.

1. The fact that talking to computers is a good thing...

- a) is generally accepted among scientists;
- b) is not shared by many people;
- c) is considered rather doubtful;
- d) is seen as something strange.

2. Rich and ambitious businesses set up special groups ...

- a) to make films and TV series about computers;
- b) to develop voice-controlled computers;
- c) to demonstrate computer technology of the future;
- d) to show how far the present technology has advanced.

3. The writer suggests that the naturalness of spoken communication between humans ...

- a) enables us to transfer meaning from person to person easily;
- b) will help to design computers with voice interfaces;
- c) makes it easy to understand how voice-controlled computers will work;
- d) makes us wrongly believe that speaking to computers can go on similarly.

4. Which of the following is not mentioned among the main problems involved in using computers to react to human orders?

- a) Computers lack human experience.
- b) Many words have contextual meaning.
- c) Some features of human language are not understandable for computers.
- d) Computers cannot understand emotions and feelings.

5. The writer aims primarily at ...

- a) comparing different views concerning computer speech recognition;
- b) encouraging scientists to join their efforts in creating voice-controlled computers;
- c) showing that the problem of creating voice-controlled computers is far from being solved;
- d) trying to prove that creating voice-controlled computers is a totally impossible thing.

Read the passage and mark the statements below T (true) or F (false)

Text 2

While that old saying ‘First in school, last in life’ may not be true, doing well at school does not determine success later on. When I surveyed captains of industry, they were unanimous in declaring university degrees irrelevant to long-term success. Charles Reynolds, Managing Director of a large multi-national electronics company, was adamant: “Studies show that among top business people school failure is actually the norm.

It is staggering, then, when you consider that parents and teachers consistently exhort children to ‘do well at school for your future’, that there is no scientific evidence that school or university exam results predict success throughout life. There is even evidence suggesting the opposite.

Professor Liam Hudson has published a number of studies which shatter the myth that high grades at university are an essential prerequisite for carrying out leading scientific research. ‘Given what it takes to get a first class degree at university,’ he told me, ‘this should not be surprising. To achieve high grades, you need to please your teachers, enjoy being supervised closely and, ultimately, please the examiners. You must ignore what you think and concentrate on what they want. To do important scientific research you need the opposite: to think originally and be highly self-motivated rather than craving constant praise, and to be able to work alone for long periods.’

I suspect that it is a myth that those who achieve first class degrees are of superior originality. They work hard and they are ambitious to do well in exams, but that does not prepare them for success in their subsequent careers.

1. It is a myth that good exam results are critical to our occupational future.
2. The writer carried out a survey among leading industrialists in order to find out whether they had their own assessment systems for job applicants.
3. The writer isn’t surprised at the efforts of adults to encourage children to study better.
4. Though irrelevant for schoolchildren, high grades at university are a definite advantage for a career in science.
5. It can be inferred from the passage that people striving for close supervision and outside praise are unable to think or work independently.

VARIANT XIII

Grammar

Choose the right variant (a, b, c or d)

1. Since the 17th century economists ... methods for studying the use of economic resources.

- | | |
|-------------------------|------------------------|
| a) has developed | c) are developing |
| b) have been developing | d) have been developed |

2. They ...to have started the project a month ago.

- | | |
|----------|-----------|
| a) might | c) were |
| b) must | d) should |

3. The data ... outweighed those that we had had before.

- | | |
|--------------|-------------------|
| a) obtained | c) to obtain |
| b) obtaining | d) to be obtained |

4. They suggest that such results ... very carefully considered.

- | | |
|--------------|-------------|
| a) should be | c) must be |
| b) to be | d) would be |

5. We had our plan ... by the board yesterday.

- | | |
|---------------|-------------------|
| a) approving | c) to be approved |
| b) to approve | d) approved |

6. During tomorrow's demonstration ... will be an interval of fifteen minutes.

- | | |
|-------|----------|
| a) it | c) there |
| b) – | d) here |

7. This computer is so simple that it ... be operated by anyone.

- | | |
|---------------|----------|
| a) can | c) need |
| b) is able to | d) ought |

8. There were two small rooms in the building, ... served as a study.

- | | |
|-------------------------|-------------------------|
| a) the smaller of that | c) the smallest of that |
| b) the smaller of which | d) the smallest of them |

9. The experiments show agreement with the theory ... the conditions are met.

- | | |
|------------|-------------|
| a) unless | c) so that |
| b) in case | d) provided |

a) because of c) because
b) according to d) since

a) that they handle c) to handle
b) handling d) when handling

a) If we found out c) Should we have found out
b) Should we find out d) Had we found out

a) he saw c) does he see
b) did he see d) he has seen

a) when you return c) your returning
b) when you will return d) return you

a) Don't miss to contact c) Miss not to contact
b) Let contact d) Don't let contact

a) causing c) cause
b) does cause d) to cause

a) neither has some of the other countries c) several other countries hasn't either
b) some other countries also haven't d) neither have several other countries

a) some notes were prepared for Dr Knapp c) some notes were prepared by Dr Knapp
b) Dr Knapp prepared some notes d) the participants were pleased to hear Dr Knapp

a) no trouble causing by the rest of the choices c) no trouble to cause by the rest of the choices
b) the rest of the choices to be caused no trouble d) the rest of the choices causing no trouble

a) this hypothesis may prove to be valid c) whether this approach is applicable in all cases
b) as soon as the drawing are received d) that no serious error has affected the measurements

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. We can only estimate the future growth of production.

- a) guess
- b) value
- c) count
- d) prove

2. The computer has a word processing facility.

- a) defect
- b) ability
- c) source
- d) material

3. It is a versatile material because it can be used in a great number of ways.

- a) abundant
- b) man-made
- c) scarce
- d) many-sided

4. Madame Curie inspired many women to do scientific research.

- a) implied
- b) assisted
- c) required
- d) stimulated

5. The discovery was significant and paved the way for other scientists' work.

- a) important
- b) universal
- c) available
- d) ordinary

6. The premises can be adapted for our purposes.

- a) provided
- b) substituted
- c) adjusted
- d) improved

7. The essential facts of an occurrence are given in the first paragraph of an article.

- a) an event
- b) an accident
- c) an incident
- d) a case

8. Success was attained after numerous experiments.

- a) observed
- b) achieved
- c) produced
- d) occurred

9. Although these theories were believed to be true for centuries, they were discredited by further experiments.

- a) supported
- b) disregarded
- c) disproved
- d) satisfied

10. These materials and products are expensive partly because they are so scarce.
- | | |
|-------------|------------|
| a) abundant | c) complex |
| b) rare | d) vital |

Reading Comprehension

Read the passage and choose the best answer (a, b, c or d) to each question

Text 1

A century ago, the overwhelming majority of people in developed countries worked with their hands: on farms, in domestic service, in small craft shops and in factories. There was not even a word for people who made their living other than by manual work. These days, the fastest-growing group in the developed world is 'knowledge workers' – people whose jobs require formal and advanced schooling.

At present, this term is widely used to describe people with considerable theoretical knowledge and learning: doctors, lawyers, teachers, accountants, chemical engineers. But the most striking growth in the coming years will be in 'knowledge technologists': computer technicians, software designers, manufacturing technologists, and so on. These people are as much manual workers as they are knowledge workers; in fact, they usually spend far more time working with their hands than with their brains. But their manual work is based on a substantial amount of theoretical knowledge which can be acquired only through formal education. They are not, as a rule, much better paid than traditional skilled workers, but they see themselves as professionals.

Such workers have two main needs: formal education that enables them to enter knowledge work in the first place, and continuing education throughout their working lives to keep their knowledge up to date. But only a few countries so far can provide systematic organized preparation. Over the next few decades, educational institutions to prepare knowledge technologists will grow rapidly in all developed and emerging countries.

What is different this time is the need for the continuing education of already well-trained and highly knowledgeable adults. Continuing education of already highly educated adults will therefore become a big growth area in the next society. But most of it will be delivered in non-traditional ways, ranging from weekend seminars to online training programmes, and in any number of places, from a traditional university to the student's home.

All this has implications for the role of women in the labour force. Although women have always worked, since time immemorial the jobs they have done have been different from men's. Knowledge work, on the other hand, is 'unisex', not because of feminist pressure, but because it can be done equally by both sexes. Knowledge workers, whatever their sex, are professionals, applying the same knowledge, doing the same work, governed by the same standards and judged by the same results.

1. According to the writer, a hundred years ago in the developed world, manual workers ...

- a) were mainly located in rural areas;
- b) were not provided with sufficient education;
- c) were the largest single group of workers;
- d) were the fastest growing group in society.

2. The writer suggests that the most significant difference between knowledge technologists and manual workers is ...

- a) their educational background;
- b) the pay they can expect;
- c) their skill with their hands;
- d) their attitudes to society.

3. He predicts in the coming years, knowledge technologists ...

- a) will have access to the same educational facilities as professional people;
- b) will have more employment opportunities in educational institutions;
- c) will require increasing mobility in order to find suitable education;
- d) will be provided with appropriate education for their needs.

4. According to the writer, the most important change in education this century will be ...

- a) the way in which people learn;
- b) the sorts of things people learn about;
- c) the use people make of their education;
- d) the type of people who provide education.

5. The writer says that changes in women's roles ...

- a) mean women are now judged by higher standards;
- b) have led to greater equality with men in the workplace;
- c) are allowing women to use their traditional skills in new ways;
- d) may allow women to out-perform men for the first time.

Read the passage and mark the statements T (True), F (False) or NG (Not given)

Text 2

The knowledge society is the first human society where upward mobility is potentially unlimited. Knowledge differs from all other means of production in that it cannot be inherited or bequeathed from one generation to another. It has to be acquired anew by every individual, and everyone starts out with the same total ignorance. And nowadays it is assumed that everybody will be a 'success' – an idea that would have seemed ludicrous to earlier generations. Naturally, only a tiny number of people can reach outstanding levels of achievement, but a very large number of people assume they will reach adequate levels.

The upward mobility of the knowledge society, however, comes at a high price: psychological pressures and emotional traumas of the rat race. Schoolchildren in some countries may suffer sleep deprivation because they spend their evenings at a crammer to help them pass their exams. Otherwise they will not get into the prestige university of their choice, and thus into a good job. In many different parts of the world, schools are becoming viciously competitive. That this has happened over such a short time – no more than 30 or 40 years – indicates how much the fear of failure has already permeated the knowledge society.

Given this competitive struggle, a growing number of highly successful knowledge workers of both sexes – business managers, university teachers, museum directors, doctors – 'plateau' in their 40s. They know they have achieved all they will achieve. If their work is all they have, they are in trouble. Knowledge workers therefore need to develop, preferably while they are still young, a non-competitive life and community of their own, and some serious outside interest – be it working as a volunteer in the community, playing in a local orchestra or taking an active part in a small town's local government. This outside interest will give them the opportunity for personal contribution and achievement.

1. In the knowledge society, knowledge can be passed down from parents to children.
2. The knowledge society means that some people may become successful by accident.
3. The knowledge society has both good and bad points.
4. It is right for schools to encourage a high degree of competition between their students.
5. When choosing outside interests, knowledge workers should avoid the need to try to do better than other people.

VARIANT XIV

Grammar

Choose the right variant (a, b, c or d)

1. They ... some kind of agreement by the end of July.

- a) have reached
- b) are reaching
- c) had been reached
- d) will have reached

2. An experienced manager ...to think too much before taking decisions.

- a) doesn't have
- b) needn't
- c) won't be able
- d) hasn't

3. ... they do the results of their work are always good.

- a) Moreover
- b) In view of
- c) Whatever
- d) However

4. It was essential that we ... fresh data to confirm our idea.

- a) would obtain
- b) must obtain
- c) to obtain
- d) should obtain

5. They are still having their computer

- a) repairing
- b) repaired
- c) to repair
- d) to be repaired

6. ... seems to be something wrong with my modem.

- a) It
- b) There
- c) Me
- d) Here

7. When I finish the course next year, I ... speak perfect French.

- a) will be able to
- b) was able to
- c) will be allowed to
- d) has been able to

8. Cuba is ... sugar-growing areas in the world.

- a) one most largest
- b) one of the larger
- c) one of largest
- d) one of the largest

9. The system will fail to perform ... the requirements are satisfied.

- a) lest
- b) provided
- c) unless
- d) in case

10. The inspector said the safety precautions ... inadequate.
- a) will be
 - b) are
 - c) have been
 - d) were
11. For this method ... it must be improved.
- a) being applicable
 - b) which is applicable
 - c) to be applicable
 - d) if applicable
12. They could have understood the task ... it clearly.
- a) had he explained
 - b) should he explain
 - c) if he explained
 - d) if he explains
13. ... not only this method but also possible alternatives.
- a) Don't consider
 - b) To consider
 - c) Considering
 - d) Let's consider
14. There is a second approach to the problem that ... a slight time saving.
- a) don't provide
 - b) does provide
 - c) providing
 - d) provide
15. California relies heavily on income from fruit crops, and
- a) so does Florida
 - b) Florida too
 - c) Florida is as well
 - d) neither does Florida
16. We are interested in ... us about the results.
- a) that she informs
 - b) when she will inform
 - c) her informing
 - d) her to inform
17. ... the problem may be it must be solved.
- a) No matter difficult
 - b) Although difficult
 - c) Even if difficult
 - d) However difficult
18. The decision was
- a) whether these statements are true
 - b) that the differences should be explained
 - c) until it is adequately defined
 - d) the research carried out this year
19. ..., all the other alternatives have been rejected.
- a) The choice to be made
 - b) They having been made the choice
 - c) The choice having been made
 - d) They making the choice

20. Having been presented with the facts,

- a) the problem was discussed by the members of the committee
- b) the members of the committee discussed the problem
- c) they proved to be very interesting
- d) they were proved to be very interesting

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. The small amount of water and food in this area cannot sustain the large population.

- a) guarantee
- b) survive
- c) support
- d) decrease

2. These modern computers have only some of human traits.

- a) beings
- b) organs
- c) characteristics
- d) qualifications

3. He performed experiments to confirm what they had proposed.

- a) verify
- b) disprove
- c) contradict
- d) approve

4. The project was postponed due to adverse economic conditions.

- a) appropriate
- b) contemporary
- c) adequate
- d) unfavourable

5. The subject was controversial for a long time, and there will probably never be complete agreement.

- a) disputed
- b) interesting
- c) discussed
- d) topical

6. The concept is difficult to grasp from a definition alone, but a description makes it easier to visualize.

- a) depict
- b) understand
- c) explain
- d) interpret

7. The goal of all scientific investigation is to predict the future.

- a) cause
- b) result
- c) use
- d) aim

8. We can give other examples of scientific achievements that were a result of joint efforts.

- | | |
|-----------------|------------------|
| a) competition | c) cooperation |
| b) conversation | d) contradiction |

9. Mathematics gives precision to science.

- | | |
|-----------------|---------------|
| a) accuracy | c) challenge |
| b) significance | d) prominence |

10. In the 20th century, Britain developed gradually from an industrial economy into a service economy.

- | | |
|---------------|-------------|
| a) progressed | c) upgraded |
| b) modified | d) evolved |

Reading Comprehension

Read the passage and choose the best answer (a, b, c or d) to each question

Text 1

When arguing about the issue of global access to information technology, some people claim that the world's poor are more concerned about having enough to eat than about surfing the World Wide Web. In what concrete ways can information and communication technologies (ICTs) benefit the two-thirds of humanity who are more concerned about their next meal than about e-mail or eBay?

First, there are the economic advantages of these technologies. Besides providing business with the opportunity to access real-time market information and complete business electronically, ICTs can reduce costs for goods and services. In India, which is fast becoming a global centre for telemarketing, customer support and other call centre services, ICTs are transforming the economy. With the legalisation of Internet telephony, India has captured an even bigger chunk of the global outsourcing market, with calls from the US accounting for 80 per cent of call centre business. Schools are even training young men and women to speak in an American accent in order to handle the calls.

Health services also benefit from ICTs. Using the Internet, doctors in poor countries can keep up to speed with the latest developments in their field as well as seek help from their peers. ICTs can assist in allowing healthcare professionals to extend their reach through telemedicine into the remotest and most underserved areas.

ICTs can make it easier to reach a broad segment of the population in education too. The African Virtual University, for instance, is a distance learning project which is partly financed by the World Bank, and which serves the countries of sub-Saharan Africa.

Finally, we come to what has been dubbed ‘e-government’. E-government initiatives focus on making government transparent and accountable by providing citizens with relevant facts. E-government is about more than just the ability to pay for your taxes or apply for a driving license over the Internet. It is about giving true information which allows people to make informed decisions on subjects that affect their lives.

So bridging the Digital Divide is a key component of addressing the ‘core’ development challenges in the 21st century. Failure to cope with the problem will only exacerbate* the existing social and economic inequalities between countries and communities.

***exacerbate** – *to make a bad situation worse.*

1. What reason is given for the increasing importance of call centres to the Indian economy?

- a) The availability of workers with the right accent.
- b) A change in the legal system.
- c) Local familiarity with outsourcing techniques.
- d) The country’s geographical position.

2. The writer says that in both health and education ...

- a) more training is needed in the use of ICTs;
- b) international organizations need to provide more support with ICTs;
- c) ordinary people are gaining more skill in the use of ICTs;
- d) ICTs can help to provide services to more people than before.

3. The key idea of e-government is ...

- a) to provide an opportunity for citizens to make tax payments online;
- b) to make it easier to apply for licences using the Internet;
- c) to provide people with direct access to information;
- d) to facilitate the process of decision-making.

4. The writer aims primarily at ...

- a) showing how ICTs can help doing business globally;
- b) persuading people to market goods and services electronically;
- c) proving the importance of ICTs for people from the lower levels of social ladder;
- d) comparing the use of ICTs in different spheres of society.

5. Overall, the writer's main argument in the passage is that ...

- a) ICT access is a basic need for a fairer world;
- b) the digital divide is the cause of our present inequalities;
- c) the developed world should do more to provide ICT training;
- d) the digital divide may never be successfully bridged.

Read the passage and mark the statements T (True), F (False) or NG (Not given)

Text 2

But how can those people who need ICT capabilities most, be best helped to bridge the Digital Divide?

A good example of how it can be done is the Information Village Project, a computer intranet linking ten villages near Pondicherry, India. The project, started with a \$ 120,000 grant from the International Development research Centre, provides locally relevant information on product prices, healthcare, weather fishing and conditions. A team of volunteers from each village gathers up the information and feeds it into the computer in the local language (Tamil). It is then available to all users of the intranet. There is also a multimedia component to make the information accessible to illiterate users. Most of the operators and volunteers providing the primary information are women, and their role in the project raises their status in the community.

Another Indian creation, the Simputer (short for Simple, Inexpensive, Multilingual computer) was conceived by a team of computer scientists at the Indian Institute of Science in Bangalore. It is a small, hand-held computer about 12 cm by 7 cm that has a touch-sensitive screen. You use a stylus to tap on icons and to input information. Because each display page shows only a few possible commands, even illiterate users should be able to learn by trial and error the purpose of the icons and buttons on each page. The Simputer also has software that can turn text into speech. This works for various Indian languages and allows the Simputer to read the text aloud on its tiny built-in speakers. It is also has a slot for 'smart' cards, a feature that its makers see as crucial. Because the device lacks a hard drive, smart cards act as the device's portable storage units. In this way, many people can use one Simputer without having to share their private information with one another. The Simputer costs \$200 – a sizable chunk of the yearly per capita income for many of its users. But one Simputer can enable an entire village to access the Internet, perform transactions, keep track of agricultural prices and educate its children.

The following features apply both to the Information Village Project and the Simputer:

1. can only be used by people who can read and write;
2. use of technology is not limited to individuals;
3. initially supported by overseas agency;
4. must run on solar power or mains electricity;
5. knowledge of English is not required.

VARIANT XV

Grammar

Choose the right variant (a, b, c or d)

1. The conference had many papers ... on major issues in the field.
 - a) focused
 - b) to focus
 - c) having focused
 - d) to be focused
2. ... can we see such rapid progress as in computing.
 - a) Anywhere
 - b) Somewhere
 - c) Everywhere
 - d) Nowhere
3. Early in this program ... was decided to incorporate some new techniques.
 - a) that
 - b) there
 - c) it
 - d) this
4. The papers exhibit ... fruitful discussion than we could have expected.
 - a) fewer
 - b) smaller
 - c) less
 - d) minor
5. He doesn't deny that other interpretations of the same data
 - a) has been made
 - b) may be made
 - c) need to make
 - d) must make
6. The demand is that all measurements ... very accurately.
 - a) would make
 - b) be made
 - c) should make
 - d) be making
7. We didn't know what they ... next.
 - a) to do
 - b) was to do
 - c) doing
 - d) would do
8. The more languages you know, ... you communicate.
 - a) the better
 - b) better
 - c) the best
 - d) more
9. The monograph is organized in three parts,
 - a) the data were presented in a separate series of tables
 - b) with the data presented in a separate series of tables
 - c) with the data presenting in a separate series of tables

d) presented the data in a separate series of tables

10. We are left with two options ... from.

- a) choosing
- b) choose
- c) to choose
- d) be chosen

11. ... this fact, one might adopt another approach.

- a) To account for
- b) Accounted for
- c) Being accounted for
- d) To be accounted for

12. Some of the articles are much shorter, ... originally conference papers.

- a) been
- b) were
- c) are
- d) being

13. ... at from this angle, the technique is a total failure.

- a) To look at
- b) Having looked at
- c) Looking at
- d) Looked

14. There is one much more specific point ... which merits further investigation.

- a) the present research raising
- b) the present research raises
- c) raised the present research
- d) to raise the present research

15. A committee ... for the purpose of coordinating research efforts.

- a) is to be establishing
- b) has been established
- c) will be establishing
- d) have to be established

16. The importance of this observation was

- a) that it led to a number of explanations of seemingly unrelated phenomena
- b) led to a number of explanations of seemingly unrelated phenomena
- c) a number of explanations of seemingly unrelated phenomena it led to
- d) that a number of explanations of seemingly unrelated phenomena

17. The book's great merit is

- a) that has made accessible a well-developed alternative theory
- b) for having made accessible a well-developed alternative theory
- c) to have made accessible a well-developed alternative theory
- d) made accessible a well-developed alternative theory

18. ..., we would have completed our work long ago.

- a) Not taking so much time the checking up of the data
- b) The checking up of the data not taking so much time
- c) The checking up of the data having taken so much time
- d) Had the checking up of the data not taken so much time

19. It is at this point

- a) that the writings of Hoffman most evidently overlap with those of James
- b) whether the writings of Hoffman most evidently overlap with those of James
- c) the writings of Hoffman most evidently overlapping with those of James
- d) the writings of Hoffman most evidently to overlap with those of James

20. The second suggestion was given preference due to

- a) it to be based on more recent data
- b) its being based on more recent data
- c) being based on more recent data
- d)) it was based on more recent data

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. You have to prepare a thesis on your investigation.

- a) research
- b) publication
- c) dissertation
- d) examination

2. You will have to meet your scientific advisor.

- a) head
- b) scientist
- c) manager
- d) supervisor

3. It is important to employ the most suitable techniques in your study.

- a) use
- b) promote
- c) provide
- d) unite

4. He will help you to select a promising topic.

- a) productive
- b) prominent
- c) perspective
- d) principal

5. In order to solve this problem we must be provided with all necessary data.

- a) prevented
- b) supplied
- c) proposed
- d) suggested

6. The message was transmitted by electronic mail.

- a) received
- b) sent
- c) transformed
- d) translated

7. Metals are conductors of heat and electricity.

- | | |
|---------------|---------------|
| a) careers | c) presenters |
| b) insulators | d) carriers |

8. Newton's discoveries affected the science of Western civilizations for several centuries.

- | | |
|---------------|----------------|
| a) applied | c) influenced |
| b) introduced | d) contributed |

9. Heat can convert solid to a liquid.

- | | |
|-------------|------------|
| a) change | c) cause |
| b) condense | d) conduct |

10. The plant generates electricity for the entire surrounding area.

- | | |
|-------------|-------------|
| a) produces | c) removes |
| b) obtains | d) extracts |

Reading Comprehension

Read the passage and choose the best answer (a, b, c or d) to each question

Text 1

Ever since humans have inhabited the earth, they have made use of various forms of communication. Generally, this expression of thoughts and feelings has been in the form of oral speech. When there is a language barrier, communication is accomplished through sign language in which motions stand for letters, words and ideas. Tourists, the deaf, and the mute have had to resort to this form of expression. Many of these symbols of whole words are very picturesque and exact and can be used internationally; spelling, however, cannot.

Body language transmits ideas or thoughts by certain actions, either intentionally or unintentionally. A wink can be a way of flirting or indicating that the party is only joking. A nod signifies approval, while shaking the head indicates a negative reaction.

Other forms of nonlinguistic language can be found in Braille (a system of raised dots read with the fingertips), signal flags, Morse code, and smoke

signals. Road maps and picture signs also guide, warn, and instruct people.

While verbalization is the most common form of language, other systems and techniques also express human thoughts and feelings.

1. Which of the following best summarizes this passage?

- a) When language is a barrier, people will find other forms of communication.
- b) Everybody uses only one form of communication.
- c) Nonlinguistic language is invaluable to foreigners.
- d) Although other forms of communication exist, verbalization is the fastest.

2. Which of the following statements is not true?

- a) There are many forms of communication in existence today.
- b) Verbalization is the most common form of communication.
- c) The deaf and mute use an oral form of communication.
- d) Ideas and thoughts can be transmitted by body language.

3. Which form other than oral speech would be most commonly used among blind people?

- a) Picture signs.
- b) Braille.
- c) Body language.
- d) Signal flags.

4. How many different forms of communication are mentioned here?

- a) 5.
- b) 7.
- c) 9.
- d) 11.

5. Sign language is said to be very picturesque and exact and can be used internationally except for ...

- a) spelling;
- b) ideas;
- c) whole words;
- d) expressions.

Read the passage and choose the best answer (a, b, c or d) to each question

Text 2

In recent years, scientific and technological developments have drastically changed human life on our planet, as well as our views both of ourselves as individuals in society and of the universe as a whole. Maybe one of the most profound developments is the discovery of recombinant DNA technology, which allows scientists to introduce genetic material (or genes) from one organism into another.

In its simplest form, the technology requires the isolation of a piece of DNA, either directly from the DNA of the organism under study, or artificially synthesized from an RNA template, by using a viral enzyme called reverse transcriptase. This piece of DNA is then ligated to a fragment of bacterial DNA which has the capacity to replicate itself independently. The recombinant molecule thus produced can be introduced into the common intestinal bacterium *Escherishcia coli*, which can be grown in very large amounts in synthetic media. Under proper conditions, the foreign gene will not only replicate in the bacteria, but also express itself, through the process of transcription and translation, to give rise to large amounts of the specific protein coded by the foreign gene.

The technology has been successfully applied to the production of several therapeutically important biomolecules, such as insulin, interferon, growth hormones and some others. Many other applications are under detailed investigation in laboratories throughout the world.

1. Recombinant DNA technology consists primarily of ...

- a) producing several therapeutically important biomolecules;
- b) giving rise to large amounts of protein;
- c) introducing genetic material from one organism into another;
- d) using a viral enzyme called reverse transcriptase.

2. Recombinant DNA technology has been used in the production of all the following biomolecules except ...

- a) growth gormones;
- b) *Escherishcia coli*;

- c) interferon;
- d) insulin.

3. Which of the following is not true?

- a) The foreign gene will replicate in the bacteria, but it will not express itself through transcription and translation.
- b) *Escherishcia coli* can be grown in large amounts in synthetic media.
- c) Research continues in an effort to find other uses for this technology.
- d) Recombinant DNA technology is a fairly recent development.

4. Expression of a gene in *Escherishcia coli* requires ...

- a) the viral enzyme reverse transcriptase;
- b) the process of transcription and translation;
- c) production of insulin and other biomolecules;
- d) that the bacteria be grown in a synthetic media.

5. The term recombinant is used because ...

- a) by ligation, a recombinant molecule is produced, which has the capacity of replication;
- b) the technique requires the combination of several types of technology;
- c) by ligation, a recombinant protein is produced, part of whose amino acids come from each different organism;
- d) *Escherishcia coli* is a recombinant organism.

VARIANT XVI

Grammar

Choose the right variant (a, b, c or d)

1. He ... presently ... for the position of head of the R&D department.

- a) have been considered c) is considering
- b) will be considered d) is being considered

2. By the end of the meeting, we ... a set of criteria to evaluate our achievements.

- a) had devised c) had been devised
- b) had been devising d) was to devise

3. The boss is disappointed and thinks the assignment ... to someone else.

- a) must give c) should be given
- b) are to be given d) has to give

4. ... the problem, we discovered an interesting regularity.

- a) Having been solved c) Solving
- b) Being solved d) To be solved

5. The target indicators ... by the working group are in compliance with the general trend.

- a) developing c) are developed
- b) developed d) having developed

6. If you ... your paper one day late, it may not be accepted.

- a) are submitted c) are submitting
- b) will submit d) submit

7. I wonder if ... will ever accept such terms.

- a) somebody c) nobody
- b) anybody d) everybody

8. He agrees that this month's figures are

- a) slightly less good c) any better
- b) much more good d) the most worst

9. They informed us that their department ... a workshop on network communications.
- a) would be advertised
 - b) to be advertising
 - c) would advertise
 - d) was advertised
- 10 too economical at this stage can give us plenty of trouble later.
- a) Be
 - b) To be
 - c) Been
 - d) Being
11. It is essential that students ... new investigative techniques.
- a) should study
 - b) must study
 - c) to study
 - d) would study
12. She is unlikely ... all the books on that topic.
- a) has read
 - b) to have read
 - c) to have been read
 - d) be reading
13. For money ... it should be invested.
- a) works
 - b) working
 - c) to work
 - d) is to work
14. She wants to have these sheets of computer printout ... for the meeting.
- a) preparing
 - b) to prepare
 - c) prepared
 - d) prepare
- 15, we had to ask for more people to help us.
- a) As we were able to cope with the task ourselves
 - b) The task being hard and time-consuming
 - c) Until the task was done
 - d) Although the task was rather difficult
16. It was by improving service ...
- a) that they managed to save the firm.
 - b) what our firm managed to do.
 - c) there is a chance to save the firm.
 - d) when the profits were high.
- 17 was not a surprise to anyone in the world of science.
- a) He was awarded the Nobel Prize
 - b) Having been awarded a Nobel Prize
 - c) For him to award a Nobel Prize
 - d) His being awarded the Nobel Prize

18. ... , he would have completed his research sooner.

- a) To take a sabbatical
- b) Had he taken a sabbatical
- c) As he had taken a sabbatical
- d) He was to take a sabbatical

19. The profits will depend on ...

- a) since we expected the results to be good.
- b) whether we'll be able to implement an innovative strategy.
- c) until the members of the Board reach a consensus.
- d) that sufficient funds will be allocated.

20. Use this search engine ...

- a) so that you can find relevant information easily.
- b) whether relevant information can be found easily.
- c) having found relevant information easily.
- d) finding relevant information easily.

Vocabulary

Choose one variant (a, b, c or d) which could be used in place of the word or phrase underlined without changing the meaning of the sentence

1. Networks enable connected computers to rapidly exchange information.

- a) avoid
- b) apply
- c) allow
- d) approve

2. Technology will never replace the fundamental human need to relate to others.

- a) contribute
- b) conclude
- c) communicate
- d) conform

3. Tightening the money supply theoretically helps to counteract inflation.

- a) Keeping up
- b) Holding down
- c) Breaking down
- d) Giving up

4. Government support of crop prices shields farmers from loss of income during periods of depression.

- a) protects
- b) prevents
- c) provides
- d) promotes

5. Consumer needs in industrial society have changed dramatically.

- a) steadily c) evidently
b) visually d) sharply

6. The government can also attempt direct intervention to counter a recession.

- a) defend c) delay
b) fight d) face

7. Some large firms in science-intensive industries maintain R&D laboratories employing thousands of people.

- a) possess c) prevent
b) promote d) process

8. Approximately the same number of students pursue bachelor's degrees in science in both countries.

- a) present c) seek
b) research d) prepare

9. Apart from bringing benefits, science has also posed serious threats to humanity.

- a) prepared c) proposed
b) provided d) presented

10. The securities markets are now regulated in order to prevent financial collapse.

- a) according to c) compared to
b) so as to d) with a view to

Reading Comprehension

Read the passage and choose the best answer (a, b, c or d) to each question

Text 1

Pauline Portas started her own business because she was fed up with corporate life. She had climbed the ladder at a major insurance company, becoming an area manager.

Despite successive promotions she felt her views were not taken seriously.

‘It’s still a man’s world out there, you have to battle twice as hard,’ she says. ‘I’d go to meetings and be one woman out of 30 men – you cope with whatever bad language and jokes happen to be around at the time.’

Ms Portas, 48, is one of a growing number of women setting up businesses, partly as an escape from the frustrations of being an employee. A survey carried out recently suggests that many companies are misusing and then losing female talent. A random sample of 350 business start-ups in London found that 67 per cent had been established by women. Of these, 71 per cent said negative experiences in previous jobs had driven them into entrepreneurship.

Slightly more than a third of female respondents said they had been regularly overlooked for promotion and more than one in five said they had often been asked to work longer hours than male colleagues. Nearly two-thirds said that at some time in their career they had faced sexual harassment or suggestive remarks.'

'Women are by and large much more flexible than men,' says Sue Birley, a professor at Imperial College Management School. 'They may well find themselves unhappy with hierarchies and impatient with bureaucracy.'

The most popular types of female start-ups found in the London survey are in: financial services and business advice; media, public relations, journalism and marketing; and hairdressing, beauty products and fashion, the survey found. Only 5 per cent of the women-led businesses failed in their first 12 months, compared with 15 per cent of those started by men.

But Bernard Hallewell, managing director of the National Business Angels Network, says the survey confirms that women tend to go into lower-risk, lower-growth sectors such as public relations and business services. Riskier ideas and 'bigger vision plans' for new products or technology tend to come from men, he says.

1. While working for a major insurance company, Pauline Portas ...

- a) kept constantly quarrelling with her colleagues.
- b) was frustrated with her lack of career progress.
- c) did not find her job interesting.
- d) reached a high position.

2. Pauline found it difficult to be a woman manager in her company because ...

- a) the work was too hard.
- b) the male staff left all the work to her.
- c) other managers didn't value her opinions.

d) her colleagues ignored her.

3. The survey described in the article found that ...

- a) companies don't have enough women managers.
- b) companies often fail to make the most of women's skills.
- c) companies often dismiss women if they don't perform well.
- d) companies hardly ever consider female workers for promotion.

4. Sue Birley suggests that women ...

- a) refuse to work longer hours.
- b) often dislike rigid corporate structures.
- c) prefer to work within a tightly controlled system.
- d) are less good at adapting to a changing environment than men.

5. Women tend to start businesses which ...

- a) are in relatively safe business sectors.
- b) have a high growth potential.
- c) are based on high-tech products or ideas.
- d) don't need to employ many workers.

Read the passage and mark the following statements T (true) or F (false)

Text 2

Dan Beldy, a San Francisco venture capitalist, has seen thousands of snazzy business cards – with bright colours, weird shapes, maps and even mirrors. The problem is that none has ever really caught his attention. Mr Beldy says he'd rather skip the card altogether and simply key the contact information into a notebook computer. 'Since I'll be e-mailing that person within a day or two or so, I'd rather have electronic access than dig through business cards,' he says.

Computer databases and personal digital assistants may soon replace business card wallets, but, paradoxically, many companies are spending more on creative business cards in order to make a good impression. Bob Popyck, author of *Here's My Card: How to Network Using Your Business Card to Actually Create More Business*, agrees that well-designed business cards are still important. 'Business cards are personal, gracious and mark you as someone of

world class,' he writes. 'They can differentiate you.'

'We've noticed that people are being more creative. They use digital cameras and they are downloading a lot of their own graphics,' says Eric Atwood, a public relations specialist for Iprint.com, an online printing company that caters mainly to small businesses and individuals.

However, the newest trend is digital cards – CD-Roms cut to business-card size that can contain a catalogue's worth of information. California-based Moon Global Network, one of many companies trying to tap this market, recently created a CD-Rom card for an electronics distribution company that included information on 3,000 products. It cost \$3,200 for 1,000 cards.

'But for the same information on printed material, development and production would have cost \$30,000,' says Roger Drews, senior account executive and director of operations for Business-CD.com, Moon Global's CD-Rom card division.

Still, digital business cards only work if the recipient has the technical know-how. Aaron Fineman, a New York-based freelance photographer, thinks that not many people are ready for digital cards yet. 'Most editors I deal with are computer illiterate,' he says.

Terri Henry, director of marketing for Icast.com, an entertainment industry site, agrees. She wonders how people could program the information into a notebook computer if they did not have a business card to begin with. 'You can't meet someone at a conference and sit there putting their phone number in,' she says.

1. Den Beldy would agree that it is easier to access an address that is recorded digitally rather than using cards.

2. People often lack imagination to produce interesting printed business cards.

3. According to the information in the text, it is cheaper to produce company information on a card-sized CD-Rom.

4. Terry Henry and Bob Popyck have entirely opposed views on the importance of business cards.

5. In Aaron Fineman's opinion, some people don't have enough technical background to deal with digital business cards.

Навчальне видання

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для підготовки аспірантів та здобувачів до складання
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