

## Part I Comprehension

Passage A Read this newspaper report and answer questions 1–10.

I.Q. stands for *Intelligence Quotient* which is a measure of a person's intelligence found by means of an intelligence test. Before marks gained in such a test can be useful as information about a person, they must be compared with some standard, or norm. It is not enough simply to know that a boy of thirteen has scored, say, ninety marks in a particular test. To know whether he is clever, average or dull, his marks must be compared with the average achieved by boys of thirteen in that test.

In 1906 the psychologist, Alfred Binet (1857–1911), devised the standard in relation to which intelligence has since been assessed. Binet was asked to find a method of selecting all children in the schools of Paris who should be taken out of ordinary classes and put in special classes for defectives. The problem brought home to him the need for a standard of intelligence, and he hit upon the very simple concept of *mental age*.

First of all, he invented a variety of tests and put large numbers of children of different ages through them. He then found at what age each test was passed by the average child. For instance, he found that the average child of seven could count backwards from 20 to 1 and the average child of

three could repeat the sentence: 'We are going to have a good time in the country.' Binet arranged the various tests in order of difficulty, and used them as a scale against which he could measure every individual. If, for example, a boy aged twelve could only do tests that were passed by the average boy of nine, Binet held that he was three years below average, and that he had a mental age of nine.

The concept of mental age provided Binet, and through him, other psychologists, with the required standard. It enabled him to state scores in intelligence tests in terms of a norm. At first, it was usual to express the result of a test by the difference between the *mental* and the *chronological* age. Then the boy in the example given would be three years retarded. Soon, however, the *mental ratio* was introduced; that is to say, the ratio of the mental age to the chronological age. Thus a boy of twelve with a mental age of nine has a mental ratio of 0.75.

The mental age was replaced by the *intelligence quotient* or *I.Q.* The *I.Q.* is the mental ratio multiplied by 100. For example, a boy of twelve with a mental age of nine has an *I.Q.* of 75. Clearly, since the mental age of the average child is equal to the chronological age, the average *I.Q.* is 100.

- 1 To judge a child's standard, his marks in a test must be compared with marks gained by ...  
A others of the same age.  
B older and younger children.  
C a number of children aged thirteen.  
D the same child when at different ages.

- 2 A *psychologist* (line 11) is ...  
A an educationist.  
B a school inspector.  
C a kind of doctor.  
D a person who studies the working of the mind.

- 3 The word *defectives* (line 17) is used of ...  
A average children.  
B poor children.  
C children of low intelligence.  
D very intelligent children.

- 4 Which of the following words could best be used to replace *concept* (line 13) without changing its meaning?  
A device  
B trick  
C thought  
D idea



- 5 Binet used large numbers of children in his tests because he wanted to find ...  
 A who were the brightest.  
 B the defectives.  
 C out what a bright child could do.  
 D a norm.
- 6 A child of seven who can count backwards from 20 to 1 has a mental age of ...  
 A seven.  
 B nine.  
 C twelve.  
 D four.
- 7 The expression *a variety of tests* (line 20) means ...  
 A a number of different sorts of tests.  
 B a large number of tests.  
 C a number of similar kinds of tests.  
 D as large a number of tests as possible.
- 8 A boy of nine who is *three years retarded* has a mental age of ...  
 A six.  
 B nine.  
 C twelve.  
 D three.
- 9 To work out a person's chronological age, one must ...  
 A know his date of birth.  
 B give him a test.  
 C find out his mental age.  
 D compare his performance in a test with that of people of the same age.
- 10 The *I.Q.* is ...  
 A the mental age divided by the chronological age and multiplied by a hundred.  
 B the mental age multiplied by the chronological age and divided by a hundred.  
 C the chronological age divided by the mental age and multiplied by a hundred.  
 D the average age divided by the mental age and multiplied by a hundred.

**Passage B** Read this passage and answer questions 11–20 which are on page 183.

Some day there may be a robot that takes the drudgery out of housework – and even cleans windows – but how soon such a robot will emerge is anybody's guess. Mr Joseph Engelberger, President of Unimation, Inc., which makes industrial robots, says a workable domestic robot might take shape by the late 1980s, but Mr Ben Skora, an amateur robot builder now working on his second creation, predicts household robots in about fifty years, and the Director of Stanford University's Artificial Intelligence Laboratory, Dr John McCarthy, says domestic robots are anywhere from five to five hundred years away.

Although robots are already widely used in industry – from welding car parts to handling explosives – the gap between the industrial robot and a domestic one is great, according to Dr McCarthy. Closing the gap will require an intellectual breakthrough.

'Take the task of clearing the table and washing the dishes,' he suggested. 'The robots will have to be able to discriminate between rubbish and dishes that should be washed and, meanwhile, not trip over the dog or baby on the floor on its way to the dishwasher.'

He said that the robot, which he defines as a general purpose physical action machine that is automatically controlled, probably will not end up looking anything like a human being. Instead the robot might have a central *brain* that controls a whole army of bodies, like a staff of servants, each assigned to a specific duty.

Mr Engelberger thinks the domestic robot is right around the corner, just waiting for an economic boost to help it over the remaining technological hurdles. He expects the household robot to be modelled after an industrial forebear.

'But the person who wants a robot will have to build his world around it,' Mr Engelberger said. 'For example, a fellow building a house might spend twenty-five per cent more to have it *robotized*. Such a *robotized* house probably would have to be free of stairs and other encumbrances that could trip a near-sighted robot, would provide special sockets for it to plug into, and would contain a *pantry* where the robot's brain and tools would be stored.'

He added that the robot would probably have to see (by means of a sophisticated TV camera) and have a



sense of touch to do housework. It could even be programmed for some superhuman tasks, such as acting as a smoke-detector that would alert a family to a fire and then fight it.

The robot created by Mr Skora is a long way from fighting fires, but Arok (which is Mr Skora's name spelt backwards without the 's') can vacuum the carpet, take out the rubbish and bring in the mail by following programmes in his computer brain. For

the more complicated tasks, such as taking the dog for a walk, Mr Skora commands Arok through a radio-transmitter as he watches the robot from a window. 'No computer in the world could work out when a dog is ready to stop,' he pointed out.

Mr Skora says that Arok was conceived more as an experimental toy than a convenience. In fact, Arok doesn't save any time around the house and demands supervision for the simplest chore.

- 11 The main idea of the first paragraph is that we ...
  - A will definitely have domestic robots one day.
  - B will not have domestic robots for a very long time.
  - C will have domestic robots in the fairly near future.
  - D have no way of knowing when we may have domestic robots.
- 12 The writer uses the word *drudgery* (line 2) to imply that domestic robots would do ... of housework.
  - A all
  - B a large part
  - C the unpleasant and uninteresting parts
  - D the most time-consuming part
- 13 The writer uses the word *creation* (line 8) because ...
  - A Mr Skora is an amateur robot builder.
  - B it was Mr Skora's second robot.
  - C Mr Skora was making something that had never been made before.
  - D the robot was an experiment.
- 14 The word *predicts* (line 9) is similar in meaning to ...
  - A foresees.
  - B hopes for.
  - C designs.
  - D does not expect.
- 15 Dr McCarthy believes that there is a big difference between an industrial robot and a domestic one because the domestic robot ...
  - A will be more intellectual.
  - B must be capable of performing more functions.
  - C must be automatically controlled.
  - D will not look like a human being.
- 16 The word *discriminate* in para. 3 means ...
  - A see.
  - B tell the difference.
  - C feel.
  - D understand what to do.
- 17 Mr Engelberger thinks that the domestic robot will be ...
  - A similar to an industrial robot.
  - B very expensive to buy.
  - C entirely new.
  - D able to go anywhere.
- 18 By *robotized house* (para. 6) Mr Engelberger means a house ...
  - A with a number of robots.
  - B specially designed for robots.
  - C without stairs.
  - D with a number of superhuman devices.
- 19 Mr Engelberger uses the word *probably* (para. 7, line 1) because ...
  - A he thinks that no robot will be able to climb stairs.
  - B stairs are an encumbrance.
  - C he is not completely sure about the capabilities of future robots.
  - D he thinks that houses in the future may not have any stairs.
- 20 Mr Skora describes Arok as an experimental toy because it ...
  - A is controlled by a radio transmitter.
  - B is a convenience.
  - C serves no useful purpose.
  - D can perform only simple chores.