

BOOKLET 14Reading ComprehensionDirections

This is a test to see how well you understand what you read. The test is made up of four stories with a number of questions on each. Read the first story and then answer the questions on it. Then go on to the second story and so on until you come to the end of Section C.

Each test item starts with a statement or question and then gives you four endings or answers. Pick the best ending or answer and blacken the space corresponding to the answer you have chosen on your answer card.

You may read the stories over again as much as you need to. Try each question in turn. If you don't know the answer, you may leave it and go on to the next. Come back to it later if you have time.

You should answer even if you aren't sure; however, do not guess blindly.

When you finish one story go ahead to the next. Keep working until you reach the end of Section C. If there is time left, go back and try to do any that you skipped the first time through.

During the present century, scientific study of man's surroundings and experiences is commonly accepted as the desirable way to determine the truth or falsity of statements, opinions, or beliefs.

This was not always so. During past centuries there was much reliance on authority. The opinions expressed by persons in positions of authority and the written statements in approved documents were frequently accepted and taught as oracles of truth. Those questioning the accuracy or validity of these opinions were in grave danger. Many persons, later recognized as leading contributors to the progress of mankind, suffered torture, imprisonment, and even death because they dared to question beliefs or opinions which we now see to have been demonstrably false.

The scientific method emphasized the inductive rather than the deductive approach to the solution of problems. The inductive method is characterized by observations, measurement, definitions, enumerations, classification, and the formulation of conclusions on the basis of objective evidence. On the other hand, authoritarianism utilized the deductive method, namely, reasoning from the major premise to a conclusion, without necessarily making explicit all the elements involved in the final statement or opinion.

In one sense authority and scientific method may be harmonized. It is conceivable that the major premises of an authority may be based on scientific studies which have produced demonstrable truths. Deductions made with these truths as major premises and with strict adherence to the principles of logic should be valid.

1. Scientific method has been encouraged
 - A. for many centuries.
 - B. continuously.
 - C. recently.
 - D. by authoritarians.
2. "Authority" as used in line #5 of the above article, means
 - A. traditional wisdom.
 - B. scientific analysis.
 - C. inductively determined fact.
 - D. superstition.
3. Deductive reasoning assumes the accuracy of
 - A. conclusions.
 - B. major premises.
 - C. facts.
 - D. a logical synthesis.
4. A central idea of the preceding article is that
 - A. deductive methods are hard to apply.
 - B. science and logic are opposed.
 - C. facts and opinions are about the same thing.
 - D. scientific and authoritarian methods may complement each other.

5. Which of the four paragraphs is primarily concerned with comparison?
- A. 1st
 - B. 2nd
 - C. 3rd
 - D. 4th
6. Which of the four paragraphs is primarily concerned with synthesis?
- A. 1st
 - B. 2nd
 - C. 3rd
 - D. 4th.

Please turn over and continue.

All plays must leave out certain facts of life and aspects of human nature; there is not room in a play for everything, nor does the nature of the form demand that there should be. We do not, for instance, ask for the element of probability in a farce, or in a light comedy. We do not expect restraint and common-sense in a tragedy; for if they were present there would be no tragedy. In brief, we expect an author to leave bits of human nature out - to present an artificial concoction rather than a true-to-life one. We ask only that he make this artifice seem plausible; that is to say, if he does his work well, we should not notice the elements he has left out - and the more we do notice their absence, the more unimpressed we are by his skill. Of course, we value most highly the dramatists who manage to include the maximum of elements with the minimum of clumsiness; for we reckon, quite correctly, that a play is both more plausible and more interesting if the characters involved in it are full, like Brutus, of mixed elements and must struggle inside themselves to reach conclusions and perform big actions: this is at least partly what we mean when we say that Shakespeare embraces all humanity, or that characters are "whole" persons rather than bitty cut-outs. When things are made too plain-sailing for characters - when they represent only ambition, or only pride, or only greed, and have no opposites to these in them to make decisions hard for them - then we may accept them as absurd or melodramatic characters, or even as a certain sort of stylised particulars, but we cannot respond to them as fully as we can to Macbeth, or Lear, or Tartuffe, or the people in Chekhov. They are doubtful to us because they have no doubt themselves.

7. Plays must
 - A. imitate life.
 - B. select from life.
 - C. exercise restraint.
 - D. use common sense.

8. A play designed to produce laughter is expected to portray incidents which are
 - A. natural.
 - B. improbable.
 - C. true-to-life.
 - D. elementary.

9. The conviction which a play carries depends on our not being aware of
 - A. its plausibility.
 - B. the maximum of elements.
 - C. the things left out.
 - D. the mixture of characters.

10. Characters appear absurd or doubtful to us if they contain no
 - A. ambition.
 - B. style.
 - C. inconsistencies.
 - D. stylised peculiarities.

11. The writer of this passage is trying to present
- A. a point of view in literary criticism.
 - B. a closely reasoned argument.
 - C. a description of a set of facts.
 - D. a theory of human nature.
12. Which of the following sentences in the paragraph first introduces an important new idea?
- A. 3rd
 - B. 4th
 - C. 5th
 - D. 6th
13. What support does the author provide for the position that he is taking?
- A. Examples and illustrations.
 - B. Common knowledge.
 - C. A series of investigations.
 - D. Essentially no support.

The history of the discovery of the Peking man was exciting despite the fact that this time it was not a more or less accidental discovery but the result of systematic excavation. In 1921 some Swedish and American paleontologists were excavating on a hill near Peking. The hill was called the Hill of Chicken Bones because bones of small birds had been found on it. Then a man walked by, watched the strange work going on and said that if the gentlemen were looking for the bones of dragons, he knew a place where they could find much bigger bones.

The man took them to a limestone cave which was about one kilometer away. In the summers of 1921 and 1923 a lot of bones of big mammalia were found there. They were typical of the Quarternary fauna. Along with the bones some sharp-edged pieces of quartz were found which could be thought to be elementary tools. The professor who led the research work could not give up his idea that in the light of these discoveries it would be possible to find remains of primitive men on the continent of Asia. In 1927 excavations were started in the cave of Tsou-kou-tien but the whole summer passed without any discoveries. Finally, three days before winter stopped the field-work one tooth of a man was found.

It was a molar tooth of a lower jaw. After examining it very carefully one of the researchers came to the conclusion that the tooth did not belong to any known type of man, nor to any living race. On the basis on this one tooth the researcher named not only a new species of man but also a new race, the Chinese man.

14. On the basis of what find was the important conclusion described in the passage made?
 - A. A molar tooth.
 - B. Some tools.
 - C. Some bones of birds.
 - D. Some pieces of quartz.

15. The conclusion that the research worker reached is based upon the assumption that one can
 - A. describe a human culture from the tools it used.
 - B. find human remains by digging in the right places.
 - C. make faster progress searching systematically than hunting blindly.
 - D. accurately reconstruct a complete creature from one small part.

16. The basic pattern of the organization of this passage is
 - A. logical.
 - B. chronological.
 - C. from general to specific.
 - D. from specific to general.

17. What led the scientist to believe that he would find evidence of primitive men on the continent of Asia?
- A. A molar tooth from a lower jaw.
 - B. Mammalian bones and sharp-edged pieces of quartz.
 - C. The statement of the Chinese about dragon bones.
 - D. The excavations at the Hill of Chicken Bones.
18. The author of this passage is primarily interested in
- A. telling an entertaining story.
 - B. describing a series of events.
 - C. influencing the beliefs and feelings of his readers.
 - D. proving a scientific theory.
19. The bones that the investigators first found when they started digging in the cave had come from **early forms of animals** like
- A. **horses, bears, or tigers.**
 - B. dragons.
 - C. small birds.
 - D. dinosaurs.

Please turn over and continue.

Commodities and services to which no flow of money payments corresponds may be divided into three groups. The first consists of goods and services received in barter, such as farm rents paid in kind. From the point of view of the nation's productivity or welfare the omission of such bartered goods would obviously understate the total performance of the economic system. The second group consists of goods and services received gratis. The difficulty here is not the lack of monetary form but the absence of any productive service rendered by the recipient. In such cases, since no production of new economic goods takes place, it appears advisable to exclude the goods from the national income total. If an individual received charity or a gift this is but a loss on the part of the donor (whose income has been recorded fully elsewhere), and to count the incomes of both donor and recipient involves either double counting or the consideration of the charity or gift recipient as a producer of service to the donor, an obviously far-fetched conception. The problem becomes more complicated when such free flow of goods (or money) is directed not from individuals but from the business system, either directly or through such social agencies as the government or charitable foundations. Such free goods, whether in the form of money or of commodities, must obviously be counted in somewhere in the national total. While their statistical estimate is difficult, their analytical and quantitative importance is appreciable and likely to grow in the future. The third type of commodities and services for which there is no corresponding money payment comprises those produced and consumed within the individual economic unit. Here the main problem lies in the segregation of economic from non-economic activity, since only a rigid line between the two will enable one to include in or exclude from national income such items as commodities produced as a hobby, services or durable goods used in the household or personal services of housewives and other members of the family. But there is no hard and fast rule by which economic activity can be distinguished from social and individual life in general. The importance of economic motives, the regularity of the activity, the relative proportion in which the resulting commodities and services appear on the market - all have to be considered. No doubt appears as to the propriety of including in national income commodities regularly produced and consumed within the household when they form part of a larger total destined for the market. Similarly, the estimate of national income should include net services from houses owned and inhabited; but there is considerable doubt as to the propriety of including net services of other durable goods. Finally, there is a general agreement among students of the problem as to the exclusion of housewives' services and services of other members of the family, because these activities are motivated largely by non-economic considerations and form much more of a part of life in general than of professional economic activity proper.

20. In return for his services a minister receives (1) a modest cash salary, (2) the use of a house, and (3) the use of an automobile. According to the passage, which of these should be considered part of the national income?

- A. Only (1) and (2).
- B. Only (1) and (3).
- C. Only (2) and (3).
- D. Only (1).

21. The "free flow of goods" refers to
- A. trade not encumbered with tariffs or restrictions.
 - B. gifts for which no return is received.
 - C. the surplus profits of the business system.
 - D. the easy exchange of goods for money.
22. Why would the work of a housewife in her home not be considered part of the national income?
- A. No money is paid for the work.
 - B. The motivation underlying the work is not economic.
 - C. No tangible product is involved.
 - D. The product is totally consumed within the home.
23. Why might a charitable contribution from a business concern be counted in the national income even though one from an individual would not?
- A. The business concern is directly involved in the nation's productive system.
 - B. The contribution from the business has not been counted anywhere else.
 - C. The contribution from the business concern is a necessary part of the cost of doing business.
 - D. A business is more likely to make a contribution to an institution or organization which must count it as income.
24. On what grounds would the fee of a concert violinist be considered part of the national income while the receipts of a violinist playing on the street corner for nickels would not?
- A. The different motivations of the violinists in the two cases.
 - B. The different motivations of those who provide the money in the two cases.
 - C. The different amounts of money involved in the two cases.
 - D. The fact that the street violinist is untrained.
25. A business man makes fine furniture in his spare time as a hobby, using some in his house and giving some to friends. On what basis would his product be excluded from the national income?
- A. Part of the product is consumed within the home.
 - B. No cash transaction is involved.
 - C. The motive for the production is not economic.
 - D. The cost of the furniture has already been counted as national income.

END OF SECTION C

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

All day long we had been motoring towards Fez, and as we drew nearer to it, but at a distance still of some thirty or forty miles, we began to feel the emanation of a great and ancient city, in the same way that you have the identical experience when approaching the environs of Rome or Paris or London or Peking, some essence, indefinable but not to be confounded with any other, asserting itself in the atmosphere. Unlike a European city, Fez has no outer suburbs, and is enclosed by its own walls; but even the brown-faced, brown-legged, shaven-headed peasants, who in their dazzling white clothes worked in the sepia-colored fields - hardly so much fields as wide territories - seemed to carry some unidentifiable echo of tradition, perhaps of Pharaoh's Egypt. It was not until darkness had enveloped them that we arrived before the majestic crenellated walls of the city, and outside the gates the strings of camels, the story-tellers and snake-charmers and lank ebony minstrels, hung about with cowrie shells, from the dark interior of the continent, and the jostling, wondering crowds that surround them by daylight had taken their departure.

1. How were the boundaries of a field in which a peasant was working marked off?
 - A. The boundaries were marked by palm trees.
 - B. The boundaries were marked by thick hedges.
 - C. There was a fence around each field.
 - D. There was no clear boundary.

2. What was it that first informed the travellers that they were approaching Fez?
 - A. The city walls.
 - B. The sepia-colored fields.
 - C. An indefinable feeling.
 - D. The traditions of Pharaoh's Egypt.

3. When the travellers were confronted by the walls they appeared to be
 - A. intimidated.
 - B. impressed.
 - C. disinterested.
 - D. astounded.

4. The travellers arrived at the city walls when the jostling crowds
 - A. were starting to gather.
 - B. were at their peak.
 - C. were getting ready to leave.
 - D. had gone.

5. The author's primary purpose in this passage is to
 - A. provide a vivid and interesting description.
 - B. inform the reader about important facts.
 - C. change the reader's attitude.
 - D. build up a feeling of suspense.

6. In the paragraph that follows this one it is likely that the author will
- A. tell about the construction of the city's walls.
 - B. describe their entrance into the city itself.
 - C. tell about the early history of the city.
 - D. describe the home life of the peasants.
7. The author's style is best described as
- A. simple and direct.
 - B. forceful.
 - C. dull and prosaic.
 - D. flowery and elaborate.

Please turn over and continue.

The meeting and overtaking of vehicles on rails, either moving or stationary, for which tracks have been laid on the road, is done on the right.

All the same, these movements can be carried out on the left if they cannot be done on the right owing to the narrowness of the space to pass in or to the presence of a parked or stationary vehicle or any other fixed obstacle and provided that this does not endanger road users coming from the opposite direction. Overtaking can also be done on the left in one way streets, when this is justified by the demands of the traffic.

When a vehicle on rails has stopped to allow passengers to enter or alight, whether the track is actually laid on the road or not, the driver may only pass the vehicle on the track, either on the left or on the right, at a reduced speed. Except at those places where the traffic is controlled by a policeman or by traffic lights, the driver driving on the side where the passengers are entering or alighting from the stationary vehicle on the rails must allow them either to reach this vehicle or to pass on to the pavement at the side. He must be prepared to stop if necessary for this purpose.

NOTE: Use street-cars or tram, not both. Whichever term or translation is natural for the country.

8. The audience for whom this passage was written was primarily
 - A. drivers of motor vehicles.
 - B. motormen of street-cars (trams).
 - C. passengers getting on and off street-cars.
 - D. policemen directing traffic.

9. The primary purpose of this passage was to provide a set of instructions for
 - A. safe driving.
 - B. passing on the left.
 - C. passing vehicles on rails.
 - D. protecting the safety of pedestrians.

10. Under which of these circumstances was passing on the left usually permissible?
 - I. one-way street.
 - II. cars parked too close on right.
 - III. at a traffic light.
 - IV. streetcar (tram) stationary.
 - A. I & II
 - B. I & III
 - C. I & IV
 - D. II & IV

11. When a street-car (tram) has stopped to let passengers off, a driver must always
 - A. stop.
 - B. slow down.
 - C. pass on the right.
 - D. keep a distance of at least 10 feet.

12. The instruction that applies whether the street-car tracks are laid on or beside the road has to do with
- A. letting passengers off.
 - B. the side on which to pass.
 - C. stopping at traffic lights.
 - D. endangering traffic coming the other way.
13. The relation of the second paragraph to the statement made in the first paragraph is that it
- A. states more fully the conditions under which the rule holds.
 - B. develops the reasons for the rule.
 - C. indicates exceptions to the general rule.
 - D. applies the rule in one special situation.
14. The material in this passage was organized by the author primarily so that the reader would know
- A. why he is to act in a certain way.
 - B. who is responsible in the situation.
 - C. what is likely to happen next.
 - D. what actions he is to take.

Please turn over and continue.

Effective thinking, while starting with logic, goes further so as to include certain broad mental skills. It includes the understanding of complex and fluid situations, in dealing with which logical methods are inadequate as mental tools. Of course, thinking must never violate the laws of logic, but it may use techniques beyond those of exact mathematical reasoning. In the fields of social study and history, and in the problems of daily life, there are large areas where evidence is incomplete and may never be completed. Sometimes the evidence may be also untrustworthy; but if the situation is practical, a decision must be made. The scientist has been habituated to deal with properties which can be abstracted from their total background and with variables which are few and well defined. Consequently, where the facts are unique and unpredictable, where the variables are numerous and their interactions too complicated for precise calculation, the scientist is apt to throw up his hands in despair and perhaps turn the situation over to the sentimentalists or the mystic. But surely he would be wrong to ignore both this type of problem and this type of thinking; for the methods of logical thinking do not exhaust the resources of reason. In coping with complex and fluid situations we need thinking which is relational and which searches for cross bearings between areas; this is thinking in a context. By its use it is possible to reach an understanding of historical and social materials and of human relations, although not with the same degree of precision as in the case of simpler materials and recurring events. As Aristotle says, "It is the mark of an educated man to expect no more exactness than the subject permits."

15. The author believes complex practical problems can be solved
- by the use of logic alone.
 - only if the rules of logic are disregarded.
 - only if all the facts are known.
 - only by using both logical and non-logical reasoning.
16. The author implies that mathematical reasoning is likely to be employed with advantage
- when the situations to be dealt with are complex and fluid.
 - in history, social study, and the problems of everyday life.
 - in stable, clear-cut situations, where there are few unknown or varying factors.
 - in dealing with practical problems.
17. The author believes scientists should widen their field of work by undertaking problems that are
- less specific and less precise.
 - more exact.
 - more abstract.
 - less complex and fluid.

18. "Relational thinking" is principally of advantage in
- A. providing working solutions to problems for which the calculation of exact answers is impossible.
 - B. dealing with problems for which only an approximate answer is desired.
 - C. providing exact answers to ill-defined problems.
 - D. dealing with problems related in thought.
19. The author's purpose in this passage is primarily to present
- A. a philosophical point of view.
 - B. some important information.
 - C. a piece of effective literary composition.
 - D. a cleverly conceived argument.
20. In speaking of "thinking which is relational", (line 22) the author is contrasting this with
- A. exact mathematical reasoning.
 - B. thinking that violates the laws of logic.
 - C. intuitive approaches to human problems.
 - D. Aristotle's point of view.
21. That one should expect no more exactness than the subject permits is endorsed by
- A. only the author.
 - B. only Aristotle.
 - C. the author and Aristotle.
 - D. the author and traditional scientists.

Please turn over and continue.

The next 100 years were destined to be the most fertile in the history of horology, because the foundations of nearly all the basic inventions appeared during this period. Robert Hooke, one of the great pioneers, is credited with the invention of the anchor escapement about 1666. This consisted of an anchor-shaped piece of steel, the points of which spanned several teeth of a sharp-toothed gear wheel. When this anchor rocked on a properly placed pivot, it allowed one tooth of the gear wheel to escape at each side of its swing, and the act of blocking the opposite tooth gave sufficient impulse to keep the pendulum swinging. This was a great step in advance in accuracy, and the majority of existing clocks were changed from foliot and verge to anchor escapement. Hooke contributed greatly to the mathematics of horology, and also invented the cylinder escapement which has endured to modern times, becoming the standard escapement for low-priced Swiss watches. As early as 1525, one John Leck of Prague had made a clock having a soft metal fusee. It remained, however, for Hooke to investigate scientifically the various properties of springs which included the fusee. He reinvented and described the fusee, which consisted of cutting a spiral on a conical drum attached to the first wheel. On this was wound first a piece of catgut and later a small chain, the other end of which was fastened to the cylindrical periphery of the barrel containing the main spring. The spiral was arranged so that the large diameter of the spiral was opposite the run-down position of the main spring. That meant that when the watch was fully wound the main spring, through its chain, was pulling on the small diameter of the spiral and, as the mechanism ran down and the tension of the main spring decreased, it was continually pulling on a larger radius, thereby tending to maintain a more constant power on the train and thus helping the mechanism to run at a more constant rate.

George Graham perfected Hooke's anchor escapement by broadening the face of the teeth on the anchor from Hooke's sharp points. This slight broadening prevented the escapement from swinging a little too far at each end of its swing, which can be detected in anchor escapement clocks by the tendency of the seconds hand to recoil slightly at each second. Graham's addition of the slight flats prevented this tendency; the deadbeat escapement did not have this overtravel and is the most common in modern use. This slight change was one of the most important steps in perfecting the time-keeping capabilities of the clock mechanism. Graham realised that temperature would change the length of the pendulum and hence have considerable influence on the rate of a clock. It has since been shown that 1 degree F. change in temperature of the steel rod of a seconds pendulum is equivalent to approximately four seconds in 24 hours, a brass rod, about twice as much; and a glass one, about half as much. Knowing roughly these facts, Graham suggested a compound pendulum composed of steel and brass, and so arranged that the different rates of expansion would offset one another. He abandoned this however, in favor of the mercury reservoir which he invented in 1711 and which, up to the invention of invar and some of the newer alloys that have practically zero coefficient of expansion under heat, was the most accurate pendulum known.

22. A grooved cone of metal is used in
- a fusee.
 - a cylinder escapement.
 - a foliot.
 - an improved pendulum.
23. The kind of escapement most common in modern clocks is called the
- anchor escapement.
 - cylindrical escapement.
 - deadbeat escapement.
 - compound escapement.
24. Which of the following types of escapements is probably most economical to construct?
- Compound.
 - Deadbeat.
 - Cylinder.
 - Single.
25. The "next 100 years" referred to in the first sentence began about
- 1525
 - 1575
 - 1600
 - 1650
26. One could tell whether an old grandfather clock had an anchor escapement or a deadbeat escapement by
- observing the movement of the second hand.
 - checking to see whether it has a compound pendulum.
 - examining the points of the teeth on the first wheel.
 - inspecting the mainspring for the presence of a catgut attachment.
27. The most accurate pendulum available in the 18th century was the
- foliot and verge.
 - compound pendulum.
 - mercury reservoir pendulum.
 - invar alloy pendulum.
28. In a compound pendulum, the length of the brass rods is about
- half that of the steel rods.
 - the same as that of the steel rods.
 - one and a half that of the steel rods.
 - twice that of the steel rods.
29. The gain from using a cone with a spiral cut into it was that this made possible
- compensation for the effect of temperature changes.
 - adjustment for the changing size of the expanding spring.
 - replacement of a pendulum with a spring.
 - nearly uniform power as the spring ran down.

END OF SECTION D

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION E

IEA/14 E

National Centers

The Student Reading Comprehension Questionnaire is to be inserted in this booklet at this point. This is the same as IEA/7 E and is to be found in the Questionnaire Bulletin. It is three sides long, not including the cover sheet.

At the end of the questionnaire, please print :

END OF BOOKLET 14