## VERBAL REASONING

Complete the sentences by choosing the best option, from the given lettered choices ( $A$ to $D$ ) below each.

1. Although his work was often $\qquad$ and $\qquad$ he was promoted anyway, simply because he had been with the company longer than anyone else.
A. expeditious ... concise
B. incomplete ... imprecise
C. negligent ... creative
D. predictable ... careful
2. He is quick $\qquad$ understanding mathematics.
A. at
B. in
C. to
D. with

Four lettered pairs (A to $D$ ) follow a related pair of words given in the question. Select the tettered pair that best expresses a relationship similar to that expressed in the original pair in capital letters.
3. BALD: HAIRY::
A. depressed: sad
B. large: hưge
C. overweight: skinny
D. strong, forceful
4. JEWEL:SHINY::
A. cat: lazy
B. demon: evil
C. mother: helpless
D. show: magic

Each of the following questions consists of a sentence with all or part of the sentence underlined. Following the requirements of standard written English, select (A) if the original is best; otherwise choose the best phrase from the options.
5. Your voice trembles, isn't it?
A. Your voice trembles, isn't it?
B. Your voice trembles, doesn't it?
C. Your voice trembles, hasn't it?
D. Your voice trembles, wasn't it?

Choose the lettered word or phrase that is MQST NEARLY OPPOSITE in meaning to the word in capital etters.
6. Surprisingly the protest was quite HYPER and not $\qquad$ at all.
A. dangerous
B. effective
C. Ioud
D. mild
7. Make sure you remain DISCREET and don't become $\qquad$ .
A. careless
B. lazy
C. selfish
D. unhappy

Choose the letered word or phrase that is MOST NEARLY SIMILAR inmeaning to the word in capital letters.
8. If you' look TIMIDLY at someone it means you are feeling
$\qquad$ .
A. excited
B. shy
C. uneasy
D. upset
9. When one speaks SOLMENLY it means one is very $\qquad$ .
A. dangerous
B. foolish
C. serious
D. tired

## Question 10 is based on the following paragraph.

The conviction that historical relics provide infallible testimon $\gamma$ about the past is rooted in the $19^{\text {th }}$ and early $20^{\text {th }}$ centuries, when science was regarded as objective and value free. As one writer-observes: 'Although it is now evident that artefacts are as easily altered as chronicles, public faith in their veracity endures: a tangible relic seems real.' Such conviction was, until recently, refiected in museum displays. Museums used to look - and some still do - much like storage rooms of objects packed together inshowcase: good for scholars who wanted to study the subtle differences in design, but not for the ordinary visitor, to whom it all looked alike. Similarly, the information accompanying the objects offen made little sense to lay visitor. The content and format of explanations dated back to a time when the museum was the exclusive domain of the scientific researcher.

Recently, however, attitudes towards history and the way it should be presented have altered. The *ey word in heritage display is now 'experience', the more exciting the better and, if possible, involving all the senses. Good examples of this approach in the UK are the Jorvik Centre in York, the National Museum of Photography, Film and Television in Bradford; and the Imperial War Museum in London. In the US the trendemerged much earlier: Williamsburg has been a prototype for many heritage developments in other parts of the world. No one can predict where the process will end. On so-called heritage sites the re-enactment of historical events is increasingly popular and computers will soon provide virtual reality experiences, which will present visitors with a vivid image of the period of their choice, in which they themselves can act as if part of the historical envirónment. Such developments have been criticized as an intolerable vulgarization, but the success of many historical theme parks and similar locations suggests that the majority of the public does not share this opinion.

In a related development, the sharp distinction museum and heritage sites on the one hand, and theme park on the other, is gradually evaporating. They already borrow ideas and concepts from one another. For example, museums have adopted story lines for exhibitions, sites have accepted 'theming' as a relevant tool, and theme parks are moving towards more authenticity and researchbased presentations. In zoos, animals are no longer kept in cages, but SAMPLE PAPER-HAT-MANAGEMENT SCIENCES (PHD)
in great spaces, either in the open air or in enormous greenhouses, such as the jungle and desert environments in Burgers' Zoo in Holland. This particular trend is regarded as one of the major developments in the presentation of natural history in the twentieth century.

Theme parks are undergoing other changes, too, as they try to present more serious social and cultural issues and move away from fantasy. This development is a response to market forces and, although museums and heritage sites have a special, response to market forces, and although museums and heritage sites have a special, rather distinct, role to fulfil, they are also operating in ayepy competitive environment where visitors make choices on howand where to spend their free time. Heritage and museum experts do not have to invent stories and recreate historical environments to attract their visitors: their assets are already in place. However, exhibits must be both based on artefacts and facts as we know-them, and attractively presented.
10. According to the writer, current interests, inthe heritage industry $\qquad$ .
A. emphasize personal involvement
B. have their origins in York and London
C. reflects minority tastes
D. rely on computer image

## ANALYTICAL REASONING

## Questions 11-14

The mixing vat in a factory receives liquid ingredients through 6 separate valves-labeled $R, S, T, U, Y$, and $Z$ each of which has exactly two settings: open and closed. The mixing-vat operator must ensure that each valve is set open or closed according to the following conditions:

If $\mathbf{T}$ is open, both $\mathbf{S}$ and $\mathbf{Z}$ must be closed.
$R$ and $Z$ cannot both be closed at the same time.
If $Y$ is closed, $Z$ must also be closed.
$S$ and $U$ cannot both be open at the same time.
11. If $\mathbf{Z}$ is open, which of the following must be true?
A. $R$ is open
B. S is open
C. $\quad T$ is open
D. $Y$ is open
12. If $R$ is closed and $U$ is open, which of the following must be true?
A. $S$ is open
B. $\quad \mathrm{T}$ is closed
C. $\quad \mathrm{T}$ is open
D. $\quad \mathbf{Y}$ is closed
13. If the maximum number of valves that can be closed at the same time are closed, Which of the following must be true?
A. $R$ is open
B. Sisopen
C. Tisopen
$D \sim Z$ is open
14. Which of the following, if given to the mixing-vat operator as an instruction, would not determine the setting of any other valve?
A. S must be closed
B. S must be open
C. T must be open
D. Y must be closed

The result of flipping an evenly weighted, or fair coin, a process commonly thought to be random, is, in fact, well determined by the impulse given the coin and by the height above the floor from which the coin starts. Yet it is difficult to predict the result of a fair coin flip.
15. Which of the following, if true, contributes most to an explanation of why the outcome of a coin flip is difficult to predict even though it is well determined?
A. An accurate prediction of the result of a coin flip requires extraordinarily precise estimation of height and impulse
B. Coin flipping has been used as a prime example, of a random process for decades
C. If the impulses of coin flipping's remain perfectly constant, the results are determined only by theheight from which the coin falls
D. The result of flipping an unevenly weighted coin can be predicted with great accuracy

Police found that ninety percent of the burglariessand attempted burglaries over a five-year period in the city of Crowther occurred in houses that did not have burglar alarm systems. The police concluded that, in Crowther, the presence of a burgial alarm system is usually effective as a deterrent to burglary.
16. The conclusion reached by thepolice presupposes which of the following?
A. Before they entered a house, the burglars could usually tell whether or not it had a burglar alarm system
B. The burglar'sentered houses only when they thought the occupants were away or asleep
C. The bungiars entered houses that had burglar alarm systems only when they anticipated finding particularly valuable goods
D. When they entered a house that had no burglar alarm system, the burglars could take more time to search for valuables

Between 1950 and 1965, the federal government spent one-third more on research and development than industry did from its own funds. In 1980, for the first time, industry spent more on research and development than the federal government did. Representatives of industry claim that these statistics show an increased commitment on the part of industry to develop competitive products.
17. Which of the following, if true, would help to refute the claim of the representatives of industry?
A. Between 1965 and 1980, industry in the United States experienced increasing competition from industry in other countries
B. In 1979 the federal government shifted research allocations from pharmaceuticals to electronics.
C. In 1980 the federal government spent half as much on research and development as it spent in 1965
D. Since 1965, industry has developed majoy product innovations, such as the personal computer
"The fact must not be overlooked that only about one-half of the international trade of the world crosses the oceans. The other half is merely exchanges of merchandise betweencountries lying alongside each other or at least within the samecontinent."
18. The quotation best supports the statement that $\qquad$ .
A. domestic trade is insignificant when compared with foreign trade
B. foreign comprerce is not necessarily carried on by water
C. the exchange of goods between neighboring countries is not considered international trade
D. the mostimportant part of any country's trade is transoceanic

The story of Robinson Crusoe's adventures on an uninhabited island is no longer as popular as it once was, nor does it inspire modern versions in popular fiction. This change in the reading public's taste has oceprred because it is no longer easy to believe that undiscovered, uninhabited islands still exist.

19. The author's reasoning about the decreased popularity of Robinson Crusoe-like adventures in popular fiction is based on which of the following assumptions?
A. As a result of media coverage, more people are acquainted with foreign locales today than at any time in the past
B. Readers of popular fiction no longer wish to exchange their current lives for lives freed from the demands made on them by other people
C. Readers of popular fiction prefer settings that they can readily accept as plausible contemporary settings
D. The most satisfying type of popular fiction is that vathich enables the reader to participate vicariously in anather person's adventures

The teacher of yoga said that he knows how good the yoga exercises feel and how beneficial they are to his mental and spiritual health. After all, he said, there must be something soundtoany human practice that endures more than three thousandyears of history.
20. Which of the following, if true, is the strangest relevant objection to the argument the teachermakes on the basis of the time yoga has endured?
A. The practice of yoga hasehanged somewhat over three thousand years
B. The teacher benefits,by the teaching of yoga and so, as a beneficiary, is not a disinterested witness
C. The teacher cites the experience of only one person, whose well-being might be due to other causes
D. War, which cánnot on balance be called sound, has lasted theyength of human history

## QUANTITATIVE REASONING

21. Naveed wanted to subtract 10 from 50. Unfortunately, he added 10 instead of subtracting. Find the percentage change in the result.
A. 50\%
B. 100\%
C. $150 \%$
D. 200\%
22. The mid-point of the line segment joining ( 3,4 ) and ( $p, 6$ ) is $(4,5)$ then value of $p$ is $\qquad$ .
A. -5
B. 1
C. 5
D. 11
23. The domain of the function $y=|x|$ is $\qquad$
A. $0 \leq x$
B. $0 \leq x<\infty$
C. $-\infty<x<+\infty$
D. $x<+\infty$
24. After three successive equalpercentage rises in the salary the sum of 1000 rupees turned into 1331 rupees. Find the percentage rise in the salary.
A. 10\%
B. 22\%
C. $66 \%$
D. 88\%
25. The sides of a triangle are in the ratio 4:5:6. The triangle is
$\qquad$ _.
A. acute angled
B. obtuse angled
C. right angled
D. either acute angled or right angled
26. The L.C.M of two numbers is 1890 and their H.C.F is 30. If one of them is 270, the other will be $\qquad$ .
A. 210
B. 220
C. 310
D. 330
27. If, $x=2 y=3 z=36$, then the average (arithmetic mean) of $x, y$ and $z$ will be $\qquad$ -.
A. 6
B. 18
C. 22
D. 33
28. The roots of the equation $x^{2}-x-6=0$ are $\qquad$ .
A. 1 and -5
B. 2 and -3
C. 3 and -2
D. 5 and -1
29. A dice is thrown once. Find the probability of gettinga number greater than 3.
A. $3 / 2$
B. $2 / 3$
C. $1 / 2$
D. $1 / 3$
30. If $\sqrt{x}+\frac{1}{\sqrt{x}}=4$, then the value of $x^{2}+\frac{1}{x^{2}}$ will be $\qquad$ .
A. 178
B. 192
C. 194
D. 199

ANSWER KEY

| 1 | B | $\boldsymbol{Z}$ | A | 13 | A | 19 | C | 25 | A |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 2 | A | 8 | B | 14 | A | 20 | D | 26 | A |
| 3 | C | 9 | C | 15 | A | 21 | C | 27 | C |
| 4 | $\mathbf{B}$ | 10 | A | 16 | A | 22 | C | 28 | C |
| 5 | $B$ | 11 | D | 17 | C | 23 | C | 29 | C |
| 6 | D | 12 | B | 18 | B | 24 | A | 30 | C |

