

GRE10-7(97.11)

## SECTION 1

Time—30 minutes

25 Questions

1. The Environmental Protection Agency must respond to the hazard to children's health posed by exposure to asbestos fibers released in the air in school classrooms. Since it is impossible to close school buildings, the best plan would be to initiate programs that mandate the immediate removal of asbestos from all the school buildings that are found to contain asbestos, regardless of whether or not the buildings are in use.

Which of the following, if true, is the strongest reason for the Environmental Protection Agency not to follow the plan outlined above?

- (A) The techniques available for removing asbestos often increase the level of airborne asbestos.
- (B) Schools are places where asbestos is especially likely to be released into the air by the action of the occupants.
- (C) Children exposed to airborne asbestos run a greater risk of developing cancer than do adults exposed to airborne asbestos.
- (D) The cost of removing asbestos varies from school to school, depending on accessibility and the quantity of asbestos to be removed.
- (E) It is impossible to determine with any degree of certainty if and when construction materials that contain asbestos will break down and release asbestos fibers into the air.

2. *Aedes albopictus*, a variety of mosquito that has recently established itself in the southeastern United States, is less widespread than the indigenous swamp mosquito. Both the swamp mosquito and *A. albopictus* can carry viruses that are sometimes fatal to humans, but *A. albopictus* is a greater danger to public health.

Each of the following, if true, provides additional information that strengthens the judgment given about the danger to public health EXCEPT:

- (A) Unlike the swamp mosquito, *A. albopictus* originated in Asia, and larvae of it were not observed in the United States before the mid-1980's.
- (B) Unlike the swamp mosquito, *A. albopictus* tends to spend most of its adult life near human habitation.
- (C) Unlike swamp mosquito larvae, *A. albopictus* larvae survive in flower pots, tin cans, and many small household objects that hold a little water.
- (D) In comparison with the swamp mosquito, *A. albopictus* hosts a much wider variety of viruses known to cause serious diseases in humans.
- (E) *A. albopictus* seeks out a much wider range of animal hosts than does the swamp mosquito, and it is more likely to bite humans.

Questions 3-8

The manager of a horse show is placing seven obstacles—one chicken coop, one gate, two stone walls, and three fences—on a jumping course that consists of seven positions, numbered and arranged consecutively from 1 to 7. The placement of the obstacles in the seven positions must conform to the following conditions:

No two fences can be placed in consecutive positions. The stone walls must be placed in consecutive positions.

3. Which of the following is an acceptable placement of obstacles in the seven positions, in order from the first position to the last position on the course?
- (A) Chicken coop, fence, gate, stone wall, fence, stone wall, fence
- (B) Fence, gate, fence, fence, chicken coop, stone wall, stone wall
- (C) Fence, stone wall, stone wall, gate, chicken coop, fence, fence
- (D) Gate, stone wall, stone wall, fence, fence, chicken coop, fence
- (E) Stone wall, stone wall, fence, chicken coop, fence, gate, fence

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4. If one of the fences is in the third position and another is in the sixth position, which of the following must be true?
- (A) The chicken coop is in the seventh position.  
 (B) The gate is in the second position.  
 (C) The gate is in the seventh position.  
 (D) One of the stone walls is in the first position.  
 (E) One of the stone walls is in the fourth position.
5. If one of the stone walls is in the seventh position, which of the following must be FALSE?
- (A) The chicken coop is in the second position.  
 (B) The chicken coop is in the fourth position.  
 (C) One of the fences is in the first position.  
 (D) One of the fences is in the second position.  
 (E) The gate is in the fourth position.
6. Which of the following CANNOT be the positions occupied by the three fences?
- (A) First, third, and fifth  
 (B) First, third, and sixth  
 (C) Second, fourth, and sixth  
 (D) Second, fourth, and seventh  
 (E) Third, fifth, and seventh
7. If a stone wall is placed immediately after the gate, which of the following is a complete and accurate list of the positions in which the gate can be placed?
- (A) Second, third      (B) Second, fourth  
 (C) Third, fourth      (D) Second, third, fourth  
 (E) Third, fourth, fifth
8. If the chicken coop is not placed immediately after any fence, which of the following is a complete and accurate list of the positions in which the chicken coop can be placed?
- (A) First, second, third  
 (B) First, third, fourth  
 (C) First, fourth, sixth  
 (D) First, second, third, fourth  
 (E) First, third, fourth, sixth
9. A person's cholesterol level will decline significantly if that person increases the

number of meals eaten per day, but only if there is no significant increase in the amount of food eaten. However, most people who increase the number of meals they eat each day will eat a lot more food as well.

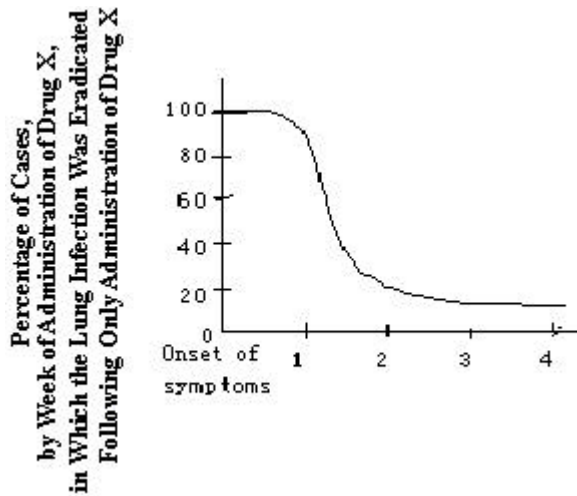
If the statements above are true, which of the following is most strongly supported by them?

- (A) For most people, cholesterol level is not significantly affected by the amount of food eaten per day.  
 (B) For most people, the amount of food eaten per meal is most strongly affected by the time of day at which the meal is eaten.  
 (C) For most people, increasing the number of meals eaten per day will not result in a significantly lower cholesterol level.  
 (D) For most people, the total amount of food eaten per day is unaffected by the number of meals eaten per day.  
 (E) For most people, increasing the number of meals eaten per day will result in a significant change in the types of food eaten.
10. A certain type of dinnerware made in Ganandia contains lead. Lead can leach into acidic foods, and Ganandians tend to eat highly acidic foods. However, the extreme rarity of lead poisoning in Ganandia indicates that the dinnerware does not contain dangerous amounts of lead.
- Which of the following, if true, most seriously weakens the argument above?
- (A) The dinnerware is produced exclusively for sale outside Ganandia.  
 (B) Ganandian foods typically are much more acidic than foods anywhere else in the world.  
 (C) The only source of lead poisoning in Ganandia is lead that has leached into food.  
 (D) Most people who use the dinnerware are not aware that it contains lead.  
 (E) Acidic foods can leach lead from dinnerware even if that dinnerware has a protective coating.

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Question 11 is based on the following graph.

EFFECTIVENESS OF DRUG X IN ERADICATING  
A BACTERIAL LUNG INFECTION IN ADULT  
PATIENTS



Point During the Course of the Infection  
at Which Drug X Was First Administered to Patients  
(in weeks following the onset of symptoms)

11. Drug X, which kills on contact the bacteria that cause the infection, is administered to patients by means of an aerosol inhaler.

Which of the following, if true, contributes most to explaining the change in drug X's effectiveness during the course of the infection?

- (A) Symptoms of the infection usually become evident during the first 48 hours following infection.
- (B) Most patients with lung infections say they prefer aerosol inhalers to other means of administering antibacterial drugs.
- (C) In most patients taking drug X, the dosage administered is increased slightly each week until symptoms disappear.
- (D) In patients who have the infection, the ability to inhale becomes increasingly impaired beginning in the second week after the onset of symptoms.
- (E) Drug X is not administered to any patient who shows signs of suffering from secondary infections.

12. Sergeant

Our police academy no longer requires its applicants to pass a physical examination before being admitted to the academy. As a result, several candidates with weak hearts and high blood pressure have been admitted. Hence, we can expect our future police force to have more health problems than our current police force.

Knowledge of each of the following would be relevant to determining the reliability of the sergeant's prediction EXCEPT whether

- (A) police officer candidates are screened for high blood pressure before joining the police force
- (B) the police officer candidates who are not healthy now are likely to be unhealthy as police officers
- (C) graduates of the police academy are required to pass a physical examination
- (D) the health of the current police officer candidates is worse than was the health of police officer candidates in the past
- (E) a police officer's health is a reliable indicator of the officer's performance

Questions 13-16

A transcontinental railroad train has exactly eight cars—J, K, L, M, N, O, P, and R—bound for several different destinations. The positions of the cars in any ordering of the train are numbered first through eighth from the front of the train. Because the cars will be detached at different points, certain ordering requirements must be met, as follows:

- J must be somewhere behind M in the train.
- K must be immediately in front of or immediately behind P.
- O must be in front of N, and exactly one car must be between them.
- R must be among the frontmost four cars and somewhere behind O.

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13. Which of the following represents a possible order for the cars, from the front to the rear of the train?
- (A) L, M, O, R, N, J, K, P  
 (B) M, K, P, O, R, N, L, J  
 (C) M, L, O, R, N, K, J, P  
 (D) O, R, M, N, P, K, J, L  
 (E) P, K, R, L, O, M, N, J
14. If K is the first car, then the last car must be either
- (A) J or L      (B) J or M      (C) L or M  
 (D) L or N      (E) M or N
15. Which of the following can be neither the first nor the last car?
- (A) J    (B) K    (C) L    (D) M    (E) N
16. If R is somewhere behind N, which of the following must be true?
- (A) O is the first car.  
 (B) M is the second car.  
 (C) Either K or P is the last car.  
 (D) L is one of the last four cars.  
 (E) J is somewhere in front of K.

Questions 17-22

A mining company is planning a survey of exactly six regions-F, G, H, I, K, and L-for deposits of platinum and uranium. Each region will contain one of four possible combinations of minerals-both platinum and uranium, neither platinum nor uranium, platinum and no uranium, or uranium and no platinum. Prior to conducting a detailed survey, the mining company has the following information:

Exactly as many of the regions contain platinum deposits as contain uranium deposits.

Region F contains exactly the same deposits as does region H.

Regions G and I both contain uranium deposits.

Regions H and K both contain platinum deposits.

Regions G and L either both contain platinum deposits or neither of them does.

17. If there are exactly four regions that contain platinum deposits, these four could be
- (A) F, G, H, and K      (B) F, G, H, and L  
 (C) F, H, I, and K      (D) F, H, K, and L  
 (E) G, H, K, and L
18. If some region contains neither platinum deposits nor uranium deposits, it must be
- (A) F    (B) G    (C) H    (D) I    (E) L
19. If one of the six regions contains deposits of neither platinum deposits nor uranium deposits, which of the following CANNOT contain platinum deposits?
- (A) F    (B) G    (C) H    (D) I    (E) K
20. If exactly one region contains no platinum deposits, it must be
- (A) F    (B) G    (C) I    (D) K    (E) L
21. If K is the only region containing platinum deposits but no uranium deposits, which of the following must be two of the regions that contain both platinum deposits and uranium deposits?
- (A) F and G      (B) F and H    (C) G and L  
 (D) H and I      (E) I and L
22. If no region contains deposits of both platinum and uranium, which of the following must be true?
- (A) F contains uranium deposits.  
 (B) G contains platinum deposits.  
 (C) I contains platinum deposits.  
 (D) K contains uranium deposits.  
 (E) L contains uranium deposits.
23. Because adult iguanas on Plazos Island are much smaller than adult iguanas of the same species on nearby islands, researchers assumed that environmental conditions on Plazos favor the survival of relatively smaller baby iguanas (hatchlings) in each yearly brood. They discovered instead that for each of the past three years, 10 percent of the smaller and 40 percent of the larger hatchlings survived, because larger

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hatchlings successfully evade their predators.

Which of the following, if true about Plazos but not about nearby islands, contributes most to an explanation of the long-standing tendency of iguanas on Plazos to be smaller than those of the same age on nearby islands?

- (A) Periodic wind shifts cause extended dry spells on Plazos every year, putting the larger iguanas, whose bodies require relatively more water, at a great disadvantage.
- (B) There are exactly three species of iguanas on Plazos but only two species of seagulls that feed on iguanas, and a relatively small percentage of each year's hatchlings are consumed by seagulls.
- (C) Wild cats, which were introduced as pets by early settlers and which were formerly major predators of Plazos iguanas, were recently killed off by a disease specific to cats.
- (D) The iguanas on Plazos are a relatively ancient part of the island's animal life.
- (E) Both land and marine iguanas live on Plazos, and the land iguanas tend to be larger than marine iguanas of the same age.

24. Every human being who has ever lived had two parents. Therefore, more people were alive three thousand years ago than are alive now.

The reasoning in the argument is flawed because it

- (A) overlooks the number of people in each generation during the last three thousand years who left no descendants
- (B) disregards possible effects of disasters such as famines and plagues on human history
- (C) overestimates the mathematical effect of repeated doublings on population size
- (D) fails to take into account that people now alive have overlapping sets of ancestors
- (E) fails to consider that accurate estimation of the number of people alive three thousand years ago might be impossible

25. Each of the academic journals *Thought* and *Ergo* has a review committee to prevent misattributed quotations from appearing in its published articles. Nevertheless, about ten percent of the quotations in *Thought's* published articles are misattributed, whereas *Ergo* contains no misattributions. *Ergo's* committee is more effective, therefore, than *Thought's* at finding misattributed quotations.

The argument above assumes that

- (A) most of the articles submitted to *Thought* for publication contain misattributed quotations
- (B) there are at least some misattributed quotations in articles submitted to *Ergo* for publication
- (C) the members of *Ergo's* committee are, on the whole, more knowledgeable than are the members of *Thought's* committee
- (D) the number of misattributed quotations in a journal is an accurate measure of how carefully that journal is edited
- (E) the authors who submit articles to *Ergo* for publication are more thorough in attributing quotations than are the authors who submit articles to *Thought*

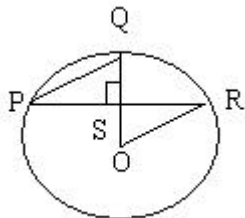
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**SECTION 2**

Time—30 minutes

25 Questions

1. 60 percent of 16 10



O is the center of the circle and  $OS = SQ$ .

2. PQ OR

n is an integer such that  $1 < n < 4$ .

3.  $n-1$  2

$$\frac{1}{2}X + 9 = 20$$

4.  $x+19$  40

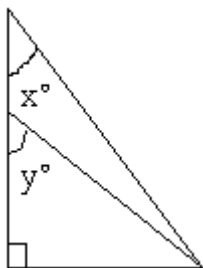
Board A measures between 2.15 feet and 2.25 feet in length; board B measures between 2.20 feet and 2.30 feet in length.

5. The length of board A The length of board B

$$t^2 - 2t = 0$$

$$t \neq 0$$

6. t 2



7. x y

8.  $x(y+z)$   $xy+z$

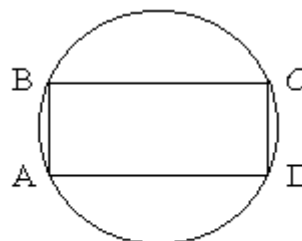
9.  $10^4$   $5^6$

10. x 120

11.  $\left(\frac{1.5}{2.5}\right)^2$  0.36

For each positive integer n,  $a_n = \frac{1}{n} - \frac{1}{n+1}$

12.  $a_1 + a_2 + a_3 + a_4$   $\frac{4}{5}$



The radius of the circle is r.

13. The area of rectangular region ABCD  $r^2$

S is a set of n consecutive integers.

14. The mean of S The median of S

The length of a rectangular box is 4 inches longer than the depth, and the width of the box is 1 inch less than the length. The depth of the box is between 2 inches and 4 inches.

15. The volume of the box in cubic inches 200

16. In a circle graph used to represent a budget totaling \$600, the measure of the central angle associated with a \$120 item in the budget is (A)  $72^\circ$  (B)  $108^\circ$  (C)  $120^\circ$  (D)  $144^\circ$  (E)  $216^\circ$

$$17. \left(\frac{1}{2} - \frac{1}{3}\right) + \left(\frac{1}{3} - \frac{1}{4}\right) + \left(\frac{1}{4} + \frac{1}{2}\right) =$$

- (A) 0 (B)  $\frac{1}{4}$  (C)  $\frac{1}{2}$   
 (D) 1 (E)  $\frac{5}{4}$

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18. The vertices of square S have coordinates (-1,-2), (-1,1), (2,1), and (2,-2), respectively. What are the coordinates of the point where the diagonals of S intersect?

- (A)  $(\frac{1}{2}, \frac{1}{2})$  (B)  $(\frac{1}{2}, -\frac{1}{2})$   
 (C)  $(\frac{3}{2}, \frac{1}{2})$  (D)  $(\frac{3}{2}, -\frac{1}{2})$   
 (E)  $(\frac{\sqrt{3}}{2}, \frac{1}{2})$

19. The admission price per child at a certain

amusement park is  $\frac{7}{12}$  of the admission price per adult. If the admission price for 4 adults and 6 children is \$112.50, what is the admission price per adult?

- (A) \$15.00 (B) \$13.50 (C) \$12.75  
 (D) \$11.25 (E) \$8.75

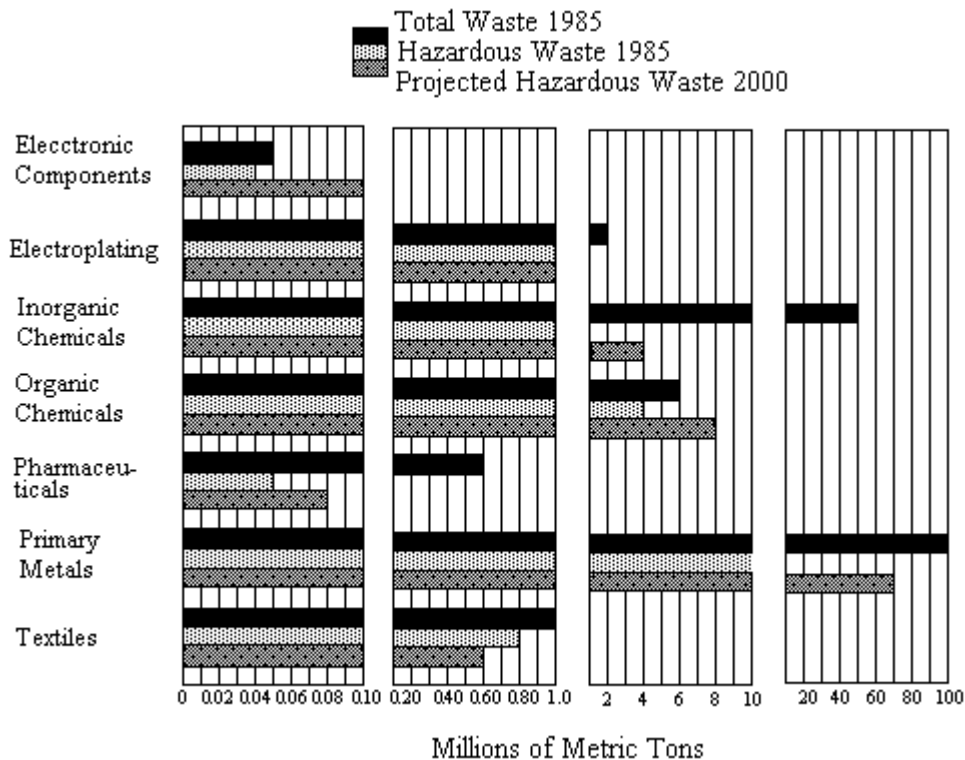
20. If  $x=2y$  and  $y=2z/3$ , what is the value of z in terms of x?

- (A)  $\frac{2x}{3}$  (B)  $\frac{3x}{4}$  (C)  $\frac{4x}{3}$   
 (D)  $\frac{3x}{2}$  (E)  $3x$

Questions 21-25 refer to the following graph.

**INDUSTRIAL WASTE GENERATED BY SPECIFIC INDUSTRIES OF COUNTRY X**

Note: Because of the great disparity in the amounts of waste generated by different industries, the graph is broken in three places, and after each break, a new and more appropriate scale is introduced. As usual, the value represented by a bar is read only at its far right end.



21. How many million metric tons of hazardous waste was produced in 1985 by the inorganic and organic chemicals industries combined?

- (A) 66 (B) 16 (C) 10  
 (D) 5 (E) 3

22. For those industries that generated a total of more than a million metric tons of waste in 1985, what was the approximate average (arithmetic mean) total waste, in millions of metric tons, generated per industry?

- (A) 42 (B) 34 (C) 28  
 (D) 25 (E) 23

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23. In 1985 hazardous waste in electroplating exceeded hazardous waste in electronic components by how many million metric tons?  
 (A) 1.96 (B) 1.50 (C) 0.96  
 (D) 0.80 (E) 0.60
24. In 1985 the pharmaceuticals industry generated total waste equal to how many times the hazardous waste in the same industry?  
 (A) 1.2 (B) 2.5 (C) 3  
 (D) 6 (E) 12
25. For which of the following industries is the hazardous waste projection for the year 2000 at least double its 1985 level?  
 I. Electronic components  
 II. Electroplating  
 III. Inorganic chemicals  
 (A) I only  
 (B) I and II only  
 (C) I and III only  
 (D) II and III only  
 (E) I, II, and III
26. Sixty-eight people are sitting in 20 cars and each car contains at most 4 people. What is the maximum possible number of cars that could contain exactly 1 of the 68 people?  
 (A) 2 (B) 3 (C) 4  
 (D) 8 (E) 12
27. The width of a rectangular playground is 75 percent of the length. If the perimeter of the playground is 280 meters, how long, in meters, is a straight path that cuts diagonally across the playground from one corner to another?  
 (A) 60  
 (B) 70  
 (C) 80  
 (D) 90  
 (E) 100
28. Which of the following numbers is NOT the sum of three consecutive odd integers?  
 (A) 15
- (B) 75  
 (C) 123  
 (D) 297  
 (E) 313
29. If  $72.42 = k(24 + \frac{n}{100})$ , where  $k$  and  $n$  are positive integers and  $n < 100$ , then  $k + n =$   
 (A) 17  
 (B) 16  
 (C) 15  
 (D) 14  
 (E) 13
30. Which of the following pairs of numbers has an average (arithmetic mean) of 2?  
 (A)  $2 - \sqrt{2}$ ,  $4 - \sqrt{2}$   
 (B)  $2\sqrt{3}$ ,  $2 - 2\sqrt{3}$   
 (C)  $\frac{1}{0.5}$ ,  $\frac{2.4}{1.6}$   
 (D)  $\sqrt{5}$ ,  $\sqrt{3}$   
 (E)  $\frac{1}{2}$ ,  $\frac{1}{2}$   
 (F)  $\frac{1}{3}$ ,  $\frac{1}{5}$



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**SECTION 3**

Time-30 minutes

## Questions

1. What these people were waiting for would not have been apparent to others and was perhaps not very---their own minds.
  - (A) obscure to
  - (B) intimate to
  - (C) illusory to
  - (D) difficult for
  - (E) definite in
2. The attempt to breed suitable varieties of jojoba by using hybridization to---favorable traits was finally abandoned in favor of a simpler and much faster---: the domestication of flourishing wild strains.
  - (A) eliminate.. alternative
  - (B) reinforce.. method
  - (C) allow.. creation
  - (D) reduce.. idea
  - (E) concentrate.. theory
3. According to one political theorist, a regime that has as its goal absolute---, without any---law or principle, has declared war on justice.
  - (A) respectability.. codification of
  - (B) supremacy .. suppression of
  - (C) autonomy .. accountability to
  - (D) fairness .. deviation from
  - (E) responsibility .. prioritization of
4. Despite its ---, the book deals---with a number of crucial issues.
  - (A) optimism .. cursorily
  - (B) importance .. needlessly
  - (C) virtues .. inadequately
  - (D) novelty .. strangely
  - (E) completeness .. thoroughly
5. Although frequent air travelers remain unconvinced, researchers have found that, paradoxically, the---disorientation inherent in jet lag also may yield some mental health---.
  - (A) temporal.. benefits
  - (B) acquired.. hazards
  - (C) somatic .. disorders
  - (D) random .. deficiencies
  - (E) typical .. standards
6. Ironically, the proper use of figurative language must be based on the denotative meaning of the words, because it is the failure to recognize this--- meaning that leads to mixed metaphors and their attendant incongruity.
  - (A) esoteric
  - (B) literal
  - (C) latent
  - (D) allusive
  - (E) symbolic
7. Although it seems---that there would be a greater risk of serious automobile accidents in densely populated areas, such accidents are more likely to occur in sparsely populated regions.
  - (A) paradoxical
  - (B) axiomatic
  - (C) anomalous
  - (D) irrelevant
  - (E) portentous
8. CATASTROPHE: MISHAP::
  - (A) prediction: recollection
  - (B) contest: recognition
  - (C) humiliation: embarrassment
  - (D) reconciliation: solution
  - (E) hurdle: challenge
9. SONNET: POET::
  - (A) stage: actor
  - (B) orchestra: conductor
  - (C) music: dancer
  - (D) canvas: painter
  - (E) symphony: composer
10. LOQUACIOUS: SUCCINCT::
  - (A) placid: indolent
  - (B) vivacious: cheerful
  - (C) vulgar: offensive
  - (D) pretentious: sympathetic
  - (E) adroit: ungainly

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11. DEPORTATION: COUNTRY::

- (A) evacuation: shelter
- (B) abdication: throne
- (C) extradition: court
- (D) eviction: dwelling
- (E) debarkation: destination

12. MAELSTROM: TURBULENT::

- (A) stricture: imperative
- (B) mirage: illusory
- (C) antique: rare
- (D) myth: authentic
- (E) verdict: fair

13. ABSTEMIOUS: INDULGE::

- (A) affectionate: embrace
- (B) austere: decorate
- (C) articulate: preach
- (D) argumentative: harangue
- (E) affable: jest

14. BLUSTERING: SPEAK::

- (A) grimacing: smile
- (B) blinking: stare
- (C) slouching: sit
- (D) jeering: laugh
- (E) swaggering: walk

15. SOLACE: GRIEF::

- (A) rebuke: mistake
- (B) mortification: passion
- (C) encouragement: confidence
- (D) justification: action
- (E) pacification: anger

16. INDELIBLE: FORGET::

- (A) lucid: comprehend
- (B) astounding: expect
- (C) inconsequential: reduce
- (D) incorrigible: agree
- (E) fearsome: avoid

Investigators of monkeys' social behavior have always been struck by monkeys' aggressive potential and the consequent need for social control of their aggressive behavior.

- (5) Studies directed at describing aggressive behavior and the situations that elicit it, as well as the social mechanisms that control it, were therefore among the first investigations of monkeys' social behavior.

Investigators initially believed that monkeys would compete for any resource in the environment: hungry

- (10) monkeys would fight over food, thirsty monkeys would fight over water, and, in general, any time more than one monkey in a group sought the same incentive simultaneously, a dispute would result and would be resolved through some form of aggression. However, the motivating force of competition for incentives began to be doubted when experiments like Southwick's on the reduction of space or the withholding of food failed to produce more than temporary increases in intragroup aggression. Indeed, food deprivation not only failed to increase aggression but
- (15) in some cases actually resulted in decreased frequencies of aggression.

Studies of animals in the wild under conditions of extreme food deprivation likewise revealed that starving monkeys devoted almost all available energy to foraging,

- (20) with little energy remaining for aggressive interaction. Furthermore, accumulating evidence from later studies of a variety of primate groups, for example, the study conducted by Bernstein, indicates that one of the most potent stimuli for eliciting aggression is the introduction of an intruder into an organized group. Such introductions result in far more serious aggression than that produced in any other types of experiments contrived to produce competition.

These studies of intruders suggest that adult members of the same species introduced to one another for the first time show considerable hostility because, in the absence of a social order, one must be established to control interanimal relationships. When a single new animal is introduced into an existing social organization, the

- (35) newcomer meets even more serious aggression. Whereas in the first case aggression establishes a social order, in the second case resident animals mob the intruder, thereby initially excluding the new animal from the existing social unit. The simultaneous introduction of several animals lessens the effect, if only because the group divides its attention among the multiple targets. If, however, the several animals introduced to a group constitute their own social unit, each group may fight the opposing group as a unit; but, again, no individual is subjected to mass attack,
- (40) and the very cohesion of the groups precludes prolonged individual combat. The submission of the defeated group, rather than unleashing unchecked aggression on the part of the victorious group, reduces both the intensity and frequency of further attack. Monkey groups
- (45) therefore see to be organized primarily to maintain their established social order rather than to engage in hostilities per se.

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17. The author of the passage is primarily concerned with
- (A) advancing a new methodology for changing a monkey's social behavior
  - (B) comparing the methods of several research studies on aggression among monkeys
  - (C) explaining the reasons for researchers' interest in monkeys' social behavior
  - (D) discussing the development of investigators' theories about aggression among monkeys
  - (E) examining the effects of competition on monkeys' social behavior
18. Which of the following best summarizes the findings reported in the passage about the effects of food deprivation on monkeys' behavior?
- (A) Food deprivation has no effect on aggression among monkeys.
  - (B) Food deprivation increases aggression among monkeys because one of the most potent stimuli for eliciting aggression is the competition for incentives.
  - (C) Food deprivation may increase long-term aggression among monkeys in a laboratory setting, but it produces only temporary increases among monkeys in the wild.
  - (D) Food deprivation may temporarily increase aggression among monkeys, but it also leads to a decrease in conflict.
  - (E) Food deprivation decreases the intensity but not the frequency of aggressive incidents among monkey.
19. According to the author, studies such as Southwick's had which of the following effects on investigators theories about monkeys' social behavior?
- (A) They suggested that existing theories about the role of aggression among monkeys did not fully account for the monkeys' ability to maintain an established social order.
  - (B) They confirmed investigators' theories about monkeys' aggressive response to competition for food and water.
  - (C) They confirmed investigators' beliefs about the motivation for continued aggression among monkeys in the same social group.
  - (D) They disproved investigators' theory that the introduction of intruders in an organized monkey group elicits intragroup aggressive behavior.
  - (E) They cast doubt on investigators' theories that could account for observed patterns of aggression among monkeys.
20. The passage suggests that investigators of monkeys social behavior have been especially interested in aggressive behavior among monkeys because
- (A) aggression is the most common social behavior among monkeys
  - (B) successful competition for incentives determines the social order in a monkey group
  - (C) situations that elicit aggressive behavior can be studied in a laboratory
  - (D) most monkeys are potentially aggressive, yet they live in social units that could not function without control of their aggressive impulses
  - (E) most monkeys are social, yet they frequently respond to newcomers entering existing social units by attacking them
21. It can be inferred from the passage that the establishment and preservation of social order among a group of monkeys is essential in order to
- (A) keep the monkeys from straying and joining other groups
  - (B) control aggressive behavior among group members
  - (C) prevent the domination of that group by another
  - (D) protect individuals seeking to become members of that group from mass attack
  - (E) prevent aggressive competition for incentives between that group and another
22. The passage supplies information to answer which of the following questions?
- (A) How does the reduction of space affect

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intragroup aggression among monkeys in an experimental setting?

- (B) Do family units within a monkey social group compete with other family units for food?
- (C) What are the mechanisms by which the social order of an established group of monkeys controls aggression within that group?
- (D) How do monkeys engaged in aggression with other monkeys signal submission?
- (E) Do monkeys of different species engage in aggression with each other over food?

23. Which of the following best describes the organization of the second paragraph?

- (A) A hypothesis is explained and counter evidence is described.
- (B) A theory is advanced and specific evidence supporting it is cited.
- (C) Field observations are described and a conclusion about their significance is drawn.
- (D) Two theories are explained and evidence supporting each of them is detailed.
- (E) An explanation of a general principle is stated and specific examples of its operation are given.

Analysis of prehistoric air trapped in tiny bubbles beneath the polar ice sheets and of the composition of ice surrounding those bubbles suggests a correlation between carbon dioxide levels in the Earth's atmosphere and global (5) temperature over the last 160,000 years. Estimates of global temperature at the time air in the bubbles was trapped rely on measuring the relative abundances of hydrogen and its heavier isotope, deuterium, in the ice surrounding the bubbles. When global temperatures are relatively low, (10) water containing deuterium tends to condense and precipitate before reaching the poles; thus, ice deposited at the poles when the global temperature was cooler contained relatively less deuterium than ice deposited at warmer global temperatures. Estimates of global temperature based (15) on this information, combined with analysis of the carbon dioxide content of air trapped in ice deep beneath the polar surface, suggest that during periods of postglacial warming carbon dioxide in the Earth's atmosphere increased by approximately 40 percent.

24. In the passage, the author is primarily concerned with doing which of the following?

- (A) Describing a new method of estimating decreases in global temperature that have occurred over the last 160,000 years
- (B) Describing a method of analysis that provides information regarding the relation between the carbon dioxide content of the Earth's atmosphere and global temperature
- (C) Presenting information that suggests that global temperature has increased over the last 160,000 years.
- (D) Describing the kinds of information that can be gleaned from a careful analysis of the contents of sheets
- (E) Demonstrating the difficulty of arriving at a firm conclusion regarding how increases in the amount of carbon dioxide in the Earth's atmosphere affect global temperature

25. It can be inferred from the passage that during periods of post glacial warming, which of the following occurred?

- (A) The total volume of air trapped in bubbles beneath the polar ice sheets increased.
- (B) The amount of deuterium in ice deposited at the poles increased.
- (C) Carbon dioxide levels in the Earth atmosphere decreased.
- (D) The amount of hydrogen in the Earth's atmosphere decreased relatively the amount of deuterium
- (E) The rate at which ice was deposited at the poles increased

26. The author states that there is evidence to support which of the following assertions?

- (A) Estimates of global temperature that rely on measurements of deuterium in ice deposited at the poles are more reliable than those based on the amount of carbon dioxide contained in air bubbles beneath the polar surface.
- (B) The amount of deuterium in the Earth's atmosphere tends to increase as global temperature decreases.
- (C) Periods of post glacial warming are

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- characterized by the presence of increased levels of carbon dioxide in the Earth's atmosphere.
- (D) Increases in global temperature over the last 160,000 years are largely the result of increases in the ratio of deuterium to hydrogen in the Earth's atmosphere.
- (E) Increases in global temperature over the last 160,000 years have been accompanied by decreases in the amount of deuterium in the ice deposited at the poles.
27. It can be inferred from the passage that the conclusion stated in the last sentence would need to be reevaluated if scientists discovered that which of the following were true?
- (A) The amount of deuterium in ice deposited on the polar surface is significantly greater than the amount of deuterium in ice located deep beneath the polar surface.
- (B) Both the air bubbles trapped deep beneath the polar surface and the ice surrounding them contain relatively low levels of deuterium.
- (C) Air bubbles trapped deep beneath the polar surface and containing relatively high levels of carbon dioxide are surrounded by ice that contained relatively low levels of deuterium.
- (D) The current level of carbon dioxide in the Earth's atmosphere exceeds the level of carbon dioxide in the prehistoric air trapped beneath the polar surface.
- (E) Increases in the level of carbon dioxide in the Earth's atmosphere are accompanied by increases in the amount of deuterium in the ice deposited at the poles.
28. CUMBERSOME:
- (A) likely to succeed
- (B) reasonable to trust
- (C) valuable to have
- (D) easy to handle
- (E) important to know
29. INDUCEMENT:
- (A) reproof
- (B) deterrent
- (C) partiality
- (D) distinction
- (E) consideration
30. STARTLE :
- (A) appease
- (B) lull
- (C) reconcile
- (D) dally
- (E) slumber
31. ANOMALY:
- (A) derivation from estimates
- (B) conformity to norms
- (C) return to origins
- (D) adaptation to stresses
- (E) repression of traits
32. RECIPROCATING:
- (A) releasing slowly
- (B) calculating approximately
- (C) accepting provisionally
- (D) moving unidirectionally
- (E) mixing thoroughly
33. MOLLYCODDLE:
- (A) talk boastfully
- (B) flee swiftly
- (C) treat harshly
- (D) demand suddenly
- (E) adjust temporarily
34. SURFEIT:
- (A) affirmation
- (B) compromise
- (C) dexterity
- (D) deficiency
- (E) languor
35. SANGUINE:
- (A) morose
- (B) puzzled
- (C) gifted
- (D) witty
- (E) persistent

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36. RETROSPECTIVE:

- (A) irresolute
- (B) hopeful
- (C) unencumbered
- (D) evanescent
- (E) anticipatory

37. ENCOMIUM:

- (A) biased evaluation
- (B) polite response
- (C) vague description
- (D) harsh criticism
- (E) sorrowful expression

38. FACTIONAL:

- (A) excessive
- (B) undistinguished
- (C) disdainful
- (D) disinterested
- (E) disparate

**SECTION 4**

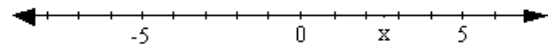
Time—30 minutes

30 Questions

1.  $1$   $\frac{1}{2^1} + \frac{1}{2^1} + \frac{1}{2^3}$

$r$  and  $s$  are integers, and  $r < s$ .

2. The number of odd integers between  $r$  and  $s$  The number of even integers between  $r$  and  $s$ .

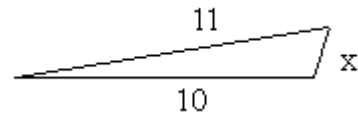


3.  $x-y$   $x+y$

4.  $10x-x$   $10$

On a drawing done to scale,  $\frac{1}{4}$  inch represents 5 feet.

5. The number of inches on the drawing that represents 150 feet  $7.5$



6.  $x$   $3$

$y > 0$   
 $x = 3y$

7. 20 percent of  $x$  50 percent of  $y$

In a certain order of goods,  $\frac{1}{3}$  of the items are shirts costing \$18 each and  $\frac{2}{3}$  of the items are hats costing \$12 each.

8. The average (arithmetic mean) cost per item in the order  $\$15$



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- (B)  $\frac{3}{2}$
- (C) 0
- (D)  $-\frac{3}{2}$
- (E) -24

costing \$1.10 per gallon. What is the approximate cost, in dollars, for driving the car  $x$  miles using this gasoline?

- (A)  $0.50x$
- (B)  $0.30x$
- (C)  $0.11x$
- (D)  $0.10x$
- (E)  $0.05x$

20. A car gets 22 miles per gallon using gasoline

Questions 21-25 refer to the following table.

POPULATION DATA FOR TEN SELECTED STATES IN 1980 AND 1987

State	Population(in thousands)		Percent Change in Population, 1980-1987	Population Per Square Mile in 1987
	1980	1987		
A	23, 668	27, 663	16. 9	177
B	17, 558	17, 825	1. 5	372
C	14, 229	16, 789	18. 0	64
D	9, 746	12, 023	23. 4	222
E	11, 864	11, 936	0. 6	266
F	11, 427	11, 582	1. 4	208
G	10, 798	10, 784	-0. 1	263
H	9, 262	9, 200	-0. 7	162
I	7, 365	7, 672	4. 2	1, 027
J	5, 882	6, 413	9. 0	131

21. Which of the following states had the most land area in 1987?

- (A) A (B) B (C) C (D) D (E) E

22. In 1987 the average (arithmetic mean) population of the three most populous of the ten selected states was most nearly equal to.

- (A) 18 million (B) 19 million  
(C) 20 million (D) 21 million (E) 22 million

23. If the land area of State J was the same in 1980 as it was in 1987, then the population square mile of State J in 1980 was most nearly equal to

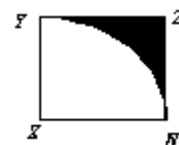
- (A) 140 (B) 130 (C) 120 (D) 110 (E) 100

24. If ranked from highest to lowest according to population, how many of the ten states changed in rank from 1980 to 1987?

- (A) One (B) Two (C) Three  
(D) Four (E) Five

25. Of the following expressions, which represents the population per square mile of the region consisting of states B and E in 1987?

- (A)  $\frac{372 + 266}{2}$
- (B)  $\frac{17,825 + 11,936}{372 + 266}$
- (C)  $\frac{17,825}{372} + \frac{11,936}{266}$
- (D)  $\frac{372}{17,825} + \frac{266}{11,936}$
- (E)  $\frac{17,825 + 11,936}{372 + 266}$



26. In the figure above, XYZW is a square with sides of length  $s$ . If YW is the arc of a circle



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with center X, which of the following is the area of the shaded region in terms of  $s$ ?

(A)  $px^2 - \left(\frac{S}{2}\right)^2$

(B)  $s^2 - ps^2$

(C)  $s^2 - \frac{1}{4}ps^2$

(D)  $4s - ps$

(E)  $4s - \frac{1}{4}ps$

27. In a graduating class of 236 students, 142 took algebra and 121 took chemistry. What is the greatest number of students that could have taken both algebra and chemistry?

- (A) 21 (B) 27 (C) 37 (D) 121 (E) 142

28. If one number is chosen at random from the first 1,000 positive integers, what is the probability that the number chosen is multiple of both 2 and 8?

(A)  $\frac{1}{125}$

(B)  $\frac{1}{8}$

(C)  $\frac{1}{2}$

(D)  $\frac{9}{16}$

(E)  $\frac{5}{8}$

29. The price of product R is 20 percent higher than the price of product S, which in turn is 30 percent higher than the price of product T. The price of product R is what percent higher than the price of product T?

- (A) 60% (B) 56% (C) 50% (D) 44% (E) 25%

YX7

+6Y

Y7X

30. In the sum above, if X and Y each denote one of the digits from 0 to 9, inclusive, then X=

- (A) 9 (B) 5 (C) 3 (D) 1 (E) 0

## SECTION 5

Time —30 minutes

25 Questions

## Questions 1-6

Each of seven worker trainees —F, G, H, J, K, L, and P—will be assigned to one of four branch offices: Iowa, Maine, Texas, or Utah. The assignments will be subject to the following constraints:

Each office must be assigned at least one trainee.

Utah must be assigned exactly two trainees.

F must be assigned to the same office as K.

L cannot be assigned to the same office as J.

If G is assigned to Utah, P must also be assigned to Utah.

1. Which of the following is an acceptable assignment of trainees to offices?

	<u>Iowa</u>	<u>Maine</u>	<u>Texas</u>	<u>Utah</u>
(A)	G	J	F, L	H, K, P
(B)	G, J	H, L	F, K	P
(C)	H	F, K	J, L	G, P
(D)	L, H	F, K	J	G, P
(E)	L, P	J	F, K	G, H

2. If G is assigned to Utah and if both F and H are assigned to Texas, which of the following lists all those trainees and only those trainees who will be assigned to an office in which there is no other trainee?

- (A) J
- 
- (B) K
- 
- (C) L
- 
- (D) J, L
- 
- (E) K, L

3. If J is assigned to Utah and H is assigned to Maine, which of the following must also be assigned to Utah?

- (A) F
- 
- (B) G
- 
- (C) K
- 
- (D) L
- 
- (E) P

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4. If K is assigned to Utah, each of the following could be assigned to Maine EXCEPT

- (A) F
- (B) G
- (C) H
- (D) L
- (E) P

5. If F is assigned to Iowa, L is assigned to Maine, and G is assigned to Utah, then J must be assigned to either

- (A) Iowa or Maine
- (B) Iowa or Texas
- (C) Maine or Texas
- (D) Maine or Utah
- (E) Texas or Utah

6. If J is to be assigned to Texas, G is to be assigned to Utah, and none of the offices is to be assigned three trainees, how many acceptable combinations of assignments are there to select from?

- (A) One
- (B) Two
- (C) Three
- (D) Four
- (E) Five

Question 7 is based on the following table.

**RESULTS OF A CONTROLLED STUDY OF THE  
EFFECTS OF CHEWING GUM ON TOOTH DECAY IN  
CHILDREN**

Average total number of new cavities  
per child over the course of three years

Children who regularly chewed gum sweetened with X	4.0
Children who regularly chewed gum sweetened with Y	1.5
Children who did not chew gum	2.5

7. Which of the following, if true, most helps to explain the difference among the children who chewed gum sweetened with X, the children who chewed gum sweetened with Y, and the children who did not chew any gum?

- (A) X, but not Y, consists of a substance that helps to protect teeth against harmful substances present in other foods.
- (B) The children who did not chew any gum during the study ate fewer sweet foods than did either the children who chewed gum sweetened with X or the children who chewed gum sweetened with Y.
- (C) The action of chewing gum stimulates the production of saliva, which contains a substance that helps fight tooth decay, but X, unlike Y, is a contributing factor to tooth decay.
- (D) Each group of children who chewed gum during the study brushed their teeth more often than did the children who did not chew gum during the study, but the children who chewed gum sweetened with Y brushed their teeth less often than did the children who chewed gum sweetened with X.
- (E) The action of chewing gum improves the circulation of blood in the jaw and strengthens the roots of adult teeth, but it also causes baby teeth to fall out more quickly than they would otherwise.

8. In the last few decades, grassy wetlands, essential to the nesting and breeding of ducks, geese, swans, and most other species of waterfowl, have been extensively drained and cultivated in southern Canada and the northern United States. Duck populations in North America have plummeted during this time, but populations of swans and geese have been affected less dramatically.

Which of the following, if true, most helps to explain the difference mentioned above?

- (A) Prohibition of hunting of waterfowl is easier to enforce in areas under cultivation than in wild lands.
- (B) Most geese and swans nest and breed farther north than ducks do, in areas that still are not cultivated.
- (C) Land that has been harvested rarely provides food suitable for waterfowl.

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- (D) Goose and swan populations decline in periods of drought, when breeding sites are fewer.
- (E) Because they are larger than ducks, geese and swans have a harder time finding protected nesting sites in areas that are cultivated.
9. A researcher found that, in proportion to their body weights, children eat more carbohydrates than adults do. Children also exercise more than adults do. The researcher hypothesized that carbohydrate consumption varies in direct proportion to the calorie demands associated with different levels of exercise.
- Which of the following, if true, most seriously undermines the researcher's hypothesis?
- (A) More carbohydrates are eaten per capita in nations where the government spends more per capita on public exercise programs.
- (B) Children who do not participate in organized sports tend to eat fewer carbohydrates than children who participate in organized sports.
- (C) Consumption of increased amounts of carbohydrates is a popular tactic of runners preparing for long-distance races.
- (D) Periods of physical growth require a relatively higher level of carbohydrate consumption than otherwise.
- (E) Though carbohydrates are necessary for the maintenance of good health, people who consume more carbohydrates are not necessarily healthier.

Questions 10-16

Each day of a seven-day flower show is featured all display of one type of flower: daisy, geranium, iris, petunia, rose, tulip, zinnia. Each type of flower will be featured on exactly one of the seven days. The flower show will begin on Sunday and run through the following Saturday. Because of suppliers' schedules, the order of the featured displays is subject to the following restrictions:

The iris display and the tulip display must be featured on consecutive days, beginning with either the iris display or the tulip display.

The daisy display and the zinnia display must be featured on consecutive days, beginning with either the daisy display or the zinnia display.

Sunday, Monday, and Tuesday are the only days available for the tulip display.

Sunday and Saturday are the only days available for the rose display.

10. The following can be the schedule of displays featured in the first five days of the show

	<u>Sunday</u>	<u>Monday</u>	<u>Tuesday</u>	<u>Wednesday</u>	<u>Thursday</u>
(A)	Daisy	Zinnia	Tulip	Iris	Rose
(B)	Geranium	Tulip	Petunia	Iris	Zinnia
(C)	Iris	Tulip	Zinnia	Geranium	Daisy
(D)	Tulip	Iris	Petunia	Daisy	Zinnia
(E)	Rose	Zinnia	Daisy	Tulip	Iris

11. If the rose display is featured on Sunday and the geranium display on Monday, which of the following displays must be featured on Wednesday?

- (A) Daisy (B) Iris (C) Petunia  
(D) Tulip (E) Zinnia

12. If the daisy display and the petunia display are featured on Friday and Saturday, respectively, geraniums must be the featured display on either

- (A) Monday or Tuesday  
(B) Monday or Wednesday  
(C) Tuesday or Wednesday  
(D) Tuesday or Thursday  
(E) Wednesday or Thursday

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13. If the daisy display is featured on Tuesday, which of the following must be true about the order of the displays?
- (A) Geraniums are featured on Thursday or on Friday.  
 (B) Irises are featured on Friday or on Saturday.  
 (C) Roses are featured on Sunday.  
 (D) Tulips are featured on Sunday.  
 (E) Zinnias are featured on Monday or on Tuesday.
14. If the daisy display is featured on Sunday, then the petunia display must be featured on either
- (A) Monday or Tuesday  
 (B) Tuesday or Wednesday  
 (C) Wednesday or Thursday  
 (D) Thursday or Friday  
 (E) Friday or Saturday
15. If the geranium display is featured on Saturday, there is a total of how many different flower displays any one of which could be featured on Wednesday?
- (A) Two  
 (B) Three  
 (C) Four  
 (D) Five  
 (E) Six
16. If the zinnia display is featured on Wednesday and the petunia display is featured on Thursday, which of the following displays must be featured immediately before the geranium display?
- (A) Daisy  
 (B) Iris  
 (C) Petunia  
 (D) Rose  
 (E) Tulip

Questions 17-22

Exactly seven radio advertisements—F, G, H, K, L, M and P—are to be aired once each during one radio program. The advertisements are to be aired in two groups, group 1 and group 2, according to the following conditions:

One of the groups must have three consecutive

advertisements; the other must have four.

K, a longer advertisement, must be the middle advertisement in the group with three advertisements.

G must be the first advertisement in its group.

G must be in a different group from H.

H must be in the same group as L and must be sometime after L.

17. Which of the following could be the division of advertisements into groups, with the advertisements listed in order within each group?

<u>Group 1</u>	<u>Group 2</u>
(A) F, K, G	M, L, P, H
(B) G, K, F	L, P, H, M
(C) G, K, L	H, M, P, F
(D) G, L, M, H	F, K, P
(E) P, F, L, K	G, F, M

18. If F is in the same group as L, which of the following must be in the same group as G?

- (A) H  
 (B) K  
 (C) L  
 (D) M  
 (E) P

19. Which of the following is a pair of advertisements that CANNOT be in a group together?

- (A) G and L  
 (B) G and M  
 (C) H and K  
 (D) K and P  
 (E) L and P

20. If G is in the group with four advertisements, which of the following is a pair of advertisements that must be aired in immediately adjacent positions?

- (A) F and M  
 (B) G and P  
 (C) K and L  
 (D) K and P  
 (E) M and P

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21. If L is the third advertisement in a group, which of the following lists two advertisements that could be immediately adjacent to each other in a group?

- (A) F and G
- (B) G and P
- (C) H and P
- (D) K and L
- (E) K and M

22. If F is the next advertisement after K in a group, which of the following is a pair of advertisements that must be in a group together?

- (A) F and M
- (B) G and M
- (C) G and P
- (D) K and P
- (E) L and M

23. Experts removed a layer of eighteenth-century red paint from a figure in a painting by a sixteenth-century Italian artist, revealing a layer of green paint underneath. Since the green paint dates from the sixteenth century, the figure must have been green, not red, when the painting was completed in 1563. Which of the following, if true, most seriously weakens the argument?

- (A) The experts had been commissioned to restore the painting to the colors it had when it was completed.
- (B) X-rays reveal an additional layer of paint beneath the green paint on the figure.
- (C) Chemical analyses were used to determine the ages of the red paint and the green paint.
- (D) The red paint was added in the eighteenth century in an attempt to repair damage done in the late seventeenth century.
- (E) Red paint on the robe of another figure in the painting dates from the sixteenth century.

24. Although it is assumed that peacocks' magnificent tails function essentially to attract peahens, no one knows why it should be magnificent tails that give a competitive advantage in securing mates. One explanation is

that peahens are more likely to mate with peacocks with magnificent tails than with peacocks that lack magnificent tails.

Which of the following is an error of reasoning exemplified by the explanation?

- (A) Attributing to animals qualities that are characteristically human
- (B) Extending a conclusion that is true of only one species of a genus to all species of the genus
- (C) Offering as an explanation a hypothesis that in principle can be neither verified nor proved false
- (D) Offering the phenomenon that is to be explained as the explanation of that phenomenon
- (E) Assuming without warrant that peacocks with magnificent tails are likely to have other features strongly attractive to peahens

25. Whenever a French novel is translated into English, the edition sold in Britain should be in British English. If the edition sold in Britain were in American English, its idioms and spellings would appear to British readers to be strikingly American and thus to conflict with the novel's setting.

The recommendation is based on which of the following assumptions?

- (A) The authors of French novels are usually native speakers of French.
- (B) A non-British reader of a novel written in British English will inevitably fail to understand the meanings of some of the words and idioms in the novel.
- (C) No French novel that is to be sold in Britain in English translation is set in the United States.
- (D) A British reader of a British novel will notice that the idioms and spellings used in the novel are British.
- (E) Most French novels are not translated into both British English and American English.

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## SECTION 6

Time—30 minutes

38 Questions

1. If the theory is self-evidently true, as its proponents assert, then why does---it still exist among well-informed people?
- (A) support for  
(B) excitement about  
(C) regret for  
(D) resignation about  
(E) opposition to
2. Although the ---of cases of measles has ---, researchers fear that eradication of the disease, once believed to be imminent, may not come soon.
- (A) occurrence.. continued  
(B) incidence.. declined  
(C) prediction.. resumed  
(D) number.. increased  
(E) study.. begun
3. Nothing---his irresponsibility better than his---delay in sending us the items he promised weeks ago.
- (A) justifies.. conspicuous  
(B) characterizes.. timely  
(C) epitomizes.. unnecessary  
(D) reveals.. conscientious  
(E) conceals.. inexplicable
4. The author did not see the---inherent in her scathing criticism of a writing style so similar to her own.
- (A) disinterest  
(B) incongruity  
(C) pessimism  
(D) compliment  
(E) symbolism
5. Whereas the Elizabethans struggled with the transition from medieval--experience to modern individualism, we confront an electronic technology that seems likely to reverse the trend, rendering individualism obsolete and
- interdependence mandatory.
- (A) literary  
(B) intuitive  
(C) corporate  
(D) heroic  
(E) spiritual
6. Our biological uniqueness requires that the effects of a substance must be verified by---experiments, even after thousands of tests of the effects of that substance on animals.
- (A) controlled  
(B) random  
(C) replicated  
(D) human  
(E) evolutionary
7. Today water is more---in landscape architecture than ever before, because technological advances have made it easy, in some instances even ---to install water features in public places.
- (A) conspicuous.. prohibitive  
(B) sporadic.. effortless  
(C) indispensable.. intricate  
(D) ubiquitous.. obligatory  
(E) controversial.. unnecessary
- Directions: In each of the following questions, a related pair of words or phrases is followed by five lettered pairs of words or phrases. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.
8. TERROR: FEAR::
- (A) craving: desire  
(B) inclination: liking  
(C) sympathy: empathy  
(D) urgency: lack  
(E) alibi: excuse
9. FEED: HUNGER::
- (A) reassure: uneasiness  
(B) penetrate: inclusion  
(C) abandon: desolation  
(D) transfer: location  
(E) fertilize: growth

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|---|--|
| <p>10. PESTLE: GRIND::<br/>         (A) scissors: sharpen<br/>         (B) spice: flavor<br/>         (C) spoon: stir<br/>         (D) hammer: swing<br/>         (E) fan: rotate</p> <p>11. DISSEMBLE: HONESTY::<br/>         (A) smile: amiability<br/>         (B) snub: politeness<br/>         (C) disagree: error<br/>         (D) flee: furtiveness<br/>         (E) elate: exuberance</p> <p>12. SYNOPSIS: CONCISENESS::<br/>         (A) distillate: purity<br/>         (B) mutation: viability<br/>         (C) replication: precedence<br/>         (D) illusion: quickness<br/>         (E) icon: charity</p> <p>13. MEDIATION : COMPROMISE::<br/>         (A) exclamation: remark<br/>         (B) approbation: acclaim</p> | <p>(C) election: legislation<br/>         (D) prosecution: conviction<br/>         (E) conclusion: evaluation</p> <p>14. DEMOGRAPHY: POPULATION::<br/>         (A) agronomy: farm<br/>         (B) astronomy: planets<br/>         (C) chemistry: heat<br/>         (D) meteorology: weather<br/>         (E) genetics: adaptation</p> <p>15. EQUIVOCATION: TRUTH<br/>         (A) rhetoric: persuasion<br/>         (B) obfuscation: clarity<br/>         (C) metaphor: description<br/>         (D) repetition: boredom<br/>         (E) conciliation: appeasement</p> <p>16. CRAVEN: ADMIRABLE::<br/>         (A) unruly: energetic<br/>         (B) listless: attractive<br/>         (C) deft: awkward<br/>         (D) trifling: amusing<br/>         (E) volatile: passionate</p> |
|---|--|

Bracken fern has been spreading from its woodland strongholds for centuries, but the rate of encroachment into open countryside has lately increased alarmingly throughout northern and western Britain. A tough competitor, 5) bracken reduces the value of grazing land by crowding out other vegetation. The fern is itself poisonous to livestock, and also encourages proliferation of sheep ticks, which not only attack sheep but also transmit diseases. No less important to some people are bracken's effects on threatened 10) habitats and on the use of uplands for recreational purposes, even though many appreciate its beauty.

Biological controls may be the only economic solution. One potentially cheap and self-sustaining method of halting the spread of bracken is to introduce natural enemies of the 15) plant. Initially unrestrained by predators of their own, foreign predators are likely to be able to multiply rapidly and overwhelm intended targets. Because bracken occurs throughout the world, there is plenty of scope for this approach. Two candidates, both moths from the Southern 20) Hemisphere, are now being studied.

Of course, biological control agents can safely be

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released only if it can be verified that they feed solely on the target weed. The screening tests have so far been fraught with difficulties. The first large shipment of moths  
25) succumbed to a disease. Growing enough bracken indoors is difficult, and the moths do not readily exploit cut stems. These are common problems with rearing insects for biological control.

Other problems can be foreseen. Policymakers need to  
30) consider many factors and opinions such as the cost of control compared to existing methods, and the impact of the clearance of bracken on the landscape, wildlife, and vegetation. In fact, scientists already have much of the information needed to assess the impact of biological  
35) control of bracken, but it is spread among many individuals, organizations, and government bodies. The potential gains for the environment are likely to outweigh the losses because few plants, insects, mammals, and birds live associated only with bracken, and many would benefit  
40) from a return of other vegetation or from a more diverse mosaic of habitats. But legal consequences of attempts at biological control present a potential minefield. For example, many rural tenants still have the right of “estoyers” the right to cut bracken as bedding for livestock and  
45) uses. What would happen if they were deprived of these rights? Once a biological control agent is released, it is difficult to control its spread. What consideration is due landowners who do not want to control bracken? According to law, the release of the biological control agents must be  
50) authorized by the secretary of state for the environment. But Britain lacks the legal and administrative machinery to assemble evidence for and against release.

17. Which of the following best states the main idea of the passage?

- (A) Studies suggest that biological control of bracken will not be technically feasible.
- (B) Although biological control appears to be the best solution to bracken infestation, careful assessment of the consequences is required.
- (C) Environmentalists are hoping that laboratory technicians will find a way to raise large numbers of moths in captivity.
- (D) Bracken is currently the best solution to the proliferation of nonnative moth species.
- (E) Even after researchers discover the most economical method of pest control, the government has no authority to implement a control

program.

18. According to the passage, which of the following can be inferred about sheep ticks?
- (A) They increase where bracken spreads.
  - (B) They are dangerous only to sheep.
  - (C) They are especially adapted to woodland.
  - (D) They have no natural enemies.
  - (E) They cause disease among bracken.
19. The author cites all of the following as disadvantages of bracken encroachment EXCEPT:
- (A) Bracken is poisonous to farm animals.
  - (B) Bracken inhibits the growth of valuable vegetation.
  - (C) Bracken indirectly helps spread certain diseases.
  - (D) Bracken is aesthetically objectionable.
  - (E) Bracken disturbs habitats that some people would like to protect.
20. The final paragraph can best be described as
- (A) a summation of arguments presented in previous paragraphs
  - (B) the elimination of competing arguments to strengthen a single remaining conclusion
  - (C) an enumeration of advantages to biological control
  - (D) an expansion of the discussion from the particular example of bracken control to the general problem of government regulation
  - (E) an overview of the variety of factors requiring further assessment



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21. It can be inferred from the passage that it is advantageous to choose as the biological control agent a predator that is foreign to the targeted environment for which of the following reasons?
- (A) Conservation groups prefer not to favor one native species over another.
- (B) All local predators have already been overwhelmed by the target species.
- (C) Local predators cannot be effectively screened since they already exist in the wild.
- (D) There is little risk of an artificially introduced foreign predator multiplying out of control.
- (E) Native predator species are generally limited by their own predators.
22. It can be inferred from the passage that the screening tests performed on the biological control agent are designed primarily to determine
- (A) its effectiveness in eliminating the target species
- (B) the response of local residents to its introduction
- (C) the risk it poses to species other than the target
- (D) its resistance to the stress of shipment
- (E) the likelihood of its survival indoors
23. As it is discussed in the passage, the place of bracken within the forest habitat can best be described as
- (A) rapidly expanding
- (B) the subject of controversy
- (C) well established
- (D) circumscribed by numerous predators
- (E) a significant nutrient source
- Allen and Wolkowitz's research challenges the common claim that homework-waged labor performed at home for a company-is primarily a response to women workers' needs and preferences. By focusing on a limited geographical area in order to gather in-depth information, the authors have avoided the methodological pitfalls that have plagued earlier research on homework. Their findings disprove accepted notions about homeworkers: that they are unqualified for other jobs and that they use homework as a short-term strategy for dealing with child care. The authors conclude that the persistence of homework cannot be explained by appeal to such notions, for, in fact, homeworkers do not differ sharply from other employed women. Most homeworkers would prefer to work outside the home but are constrained from doing so by lack of opportunity. In fact, homework is driven by employers' desires to minimize fixed costs: homeworkers receive no benefits and are paid less than regular employees.
24. The passage is primarily concerned with
- (A) advocating a controversial theory
- (B) presenting and challenging the results of a study
- (C) describing a problem and proposing a solution
- (D) discussing research that opposes a widely accepted belief
- (E) comparing several explanations for the same phenomenon
25. According to the passage, which of the following has been generally believed about homework?
- (A) The benefits of homework accrue primarily to employers rather than to homeworkers.
- (B) Homework is prevalent predominantly in rural areas.
- (C) Homework is primarily a response to the preferences of women workers.
- (D) Few homeworkers rely on homework for the majority of their family income.
- (E) Most homework is seasonal and part-time rather than full-time and year-round.

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26. Allen and Wolkowitz's research suggests that each of the following is true of most homeworkers EXCEPT:
- (A) They do not necessarily resort to homework as a strategy for dealing with child care.
  - (B) Their family situations are not unlike those of other employed women.
  - (C) They are as well qualified as women who work outside the home.
  - (D) They perform professional-level duties rather than manual tasks or piecework.
  - (E) They do not prefer homework to employment outside the home.

27. The passage suggests which of the following about previous research on homework?
- (A) It was conducted primarily with women who did not have extensive household responsibilities or care for small children at home.
  - (B) It was conducted with homeworkers and companies over a large geographical area.
  - (C) It indicated that women homeworkers had numerous opportunities to work outside the home.
  - (D) It indicated that homeworkers usually work for companies that are close to their homes.
  - (E) It indicated that homework was financially advantageous to large companies.

## 28. FLIPPANCY:

- (A) temperance
- (B) reliability
- (C) seriousness
- (D) inflexibility
- (E) reticence

## 32. INIMITABLE:

- (A) enviable
- (B) reparable
- (C) amicable
- (D) unwieldy
- (E) commonplace

## 36. APPOSITE:

- (A) disposable
- (B) adjacent
- (C) vicarious
- (D) parallel
- (E) extraneous

## 29. FACETIOUS:

- (A) uncomplicated
- (B) prideful
- (C) earnest
- (D) laconic
- (E) forbearing

## 33. SERE:

- (A) lush
- (B) obstinate
- (C) immersed
- (D) fortunate
- (E) antiquated

## 37. BOMBAST:

- (A) kindness
- (B) nonthreatening motion
- (C) great effort
- (D) down-to-earth language
- (E) good-natured approval

## 30. BUNGLE:

- (A) bring off
- (B) bail out:
- (C) give in
- (D) pull through
- (E) put together

## 34. VACUOUS:

- (A) courteous
- (B) exhilarated
- (C) modest
- (D) intelligent
- (E) emergent

## 38. LIMPID:

- (A) unfading
- (B) coarse
- (C) elastic
- (D) murky
- (E) buoyant

## 31. STODGY:

- (A) nervous
- (B) incisive
- (C) exciting
- (D) talkative
- (E) happy

## 35. PEDESTRIAN:

- (A) concise
- (B) attractive
- (C) mobile
- (D) delicate
- (E) imaginative