SECTION 1
Time –30 minutes
38 Questions

1. Because the monkeys under study are ---- the presence of human beings, they typically ---- human observers and go about their business
   (A) ambivalent about .. welcome
   (B) habituated to .. disregard
   (C) pleased with .. snub
   (D) inhibited by .. seek
   (E) unaware of .. avoid

2. Give he previously expressed interest and the ambitious tone of her recent speeches, the senator's attempt to convince the public that she is not interested in running for a second term is ----.
   (A) laudable
   (B) likely
   (C) authentic
   (D) futile
   (E) sincere

3. Many of her followers remain ---- to her, and even those who have rejected her leadership are unconvinced of the ---- of replacing her during the current turmoil.
   (A) opposed.. urgency
   (B) friendly.. harm
   (C) loyal.. wisdom
   (D) cool.. usefulness
   (E) sympathetic.. disadvantage

4. Unlike many recent interpretations of Beethoven's piano sonatas, the recitalist's performance was a delightfully free and introspective one; nevertheless, it was also, seemingly paradoxically, quite ----.
   (A) appealing
   (B) exuberant
   (C) idiosyncratic
   (D) unskilled
   (E) controlled

5. Species with relatively ---- metabolic rates, including hibernators, generally live longer than those whose metabolic rates are more rapid.
   (A) prolific
   (B) sedentary
   (C) sluggish
   (D) measured
   (E) restive

6. Belying his earlier reputation for ---- as a negotiator, Morgan had recently assumed a more ---- stance for which many of his erstwhile critics praised him.
   (A) intransigence.. conciliatory
   (B) impropriety.. intolerant
   (C) inflexibility.. unreasonable
   (D) success.. authoritative
   (E) incompetence.. combative

7. Although Irish literature continued to flourish after the sixteenth century, a ---- tradition is ---- in the visual arts: we think about Irish culture in terms of the word, not in terms of pictorial images.
   (A) rich.. superfluous
   (B) lively.. found
   (C) comparable.. absent
   (D) forgotten.. apparent
   (E) lost.. extant

8. SILVER: TARNISH::
   (A) gold: burnish
   (B) steel: forge
   (C) iron: rust
   (D) lead: cast
   (E) tin: shear

9. DISLIKE: LOATHING::
   (A) appreciation: gratification
   (B) hunger: appetite
   (C) void: dearth
   (D) pleasure: bliss
   (E) pain: ache

10. CRAVEN: HEROIC::
    (A) unruly: energetic
    (B) listless: attractive
    (C) volatile: constant
    (D) deft: trifling
    (E) awkward: amusing

11. FILLY: HORSE::

(A) antennae: butterfly

(B) pullet: chicken

(C) gaggle: goose

(D) duck: drake

(E) wasp: bee

12. PITHINESS: APHORISM::

(A) craft: art

(B) detail: sketch

(C) illusion: story

(D) exaggeration: caricature

(E) sophistication: farce

13. EPHEMERAL: ENDURING::

(A) infirm: healing

(B) insensitive: cooperating

(C) inanimate: living

(D) interminable: continuing

(E) ineffectual: proceeding

14. POSTURER: UNAFFECTED::

(A) brat: insolent

(B) hypocrite: perceptive

(C) grouch: respected

(D) bigot: tolerant

(E) rogue: empathetic

15. FACETIOUS: SPEECH::

(A) precocious: learning

(B) unbecoming: color

(C) exemplary: conduct

(D) craven: timidity

(E) antic: behavior

16. VAGARY: PREDICT::

(A) quotation: misdirect

(B) investigation: confirm

(C) stamina: deplete

(D) turbulence: upset

(E) impossibility: execute

This is not to deny that the Black gospel music of the early twentieth century differed in important ways from the slave spirituals. Whereas spirituals were created and disseminated in folk fashion, gospel music was composed, (5) published, copyrighted, and sold by professionals. Nevertheless, improvisation remained central to gospel music. One has only to listen to the recorded repertoire of gospel songs to realize that Black gospel singers rarely sang a song precisely the same way twice and never according to (10) its exact musical notation. They performed what jazz musicians call "head arrangements" proceeding from their own feelings and from the way "the spirit" moved them at the time. This improvisatory element was reflected in the manner in which gospel music was published. Black gospel (15) composers scored the music intended for White singing groups fully, indicating the various vocal parts and the accompaniment, but the music produced for Black singers included only a vocal line and piano accompaniment.

17. Which of the following best describes "head arrangement" as the term is used in line 11?

(A) A published version of a gospel song produced for use by Black singers

(B) A gospel song based on a slave spiritual

(C) A musical score shared by a gospel singer and a jazz musician

(D) An informally written composition intended for use by a gospel singer

(E) An improvised performance inspired by the singer's emotions

18. The author mentions "folk fashion" (line 4) most likely in order to

(A) counter an assertion about the role of improvisation in music created by Black people

(B) compare early gospel music with gospel music written later in the twentieth century

(C) make a distinction between gospel music and slave spirituals

(D) introduce a discussion about the dissemination of slave spirituals

(E) describe a similarity between gospel music and slave spirituals

19. The passage suggests which of the following about Black gospel music and slave spirituals?

(A) Both became widely known in the early twentieth century.

(B) Both had an important improvisatory element.

(C) Both were frequently performed by jazz

musicians.

 (D) Both were published with only a vocal line and piano accompaniment.

 (E) Both were disseminated chiefly by Black singing groups.

20. Of the following sentences, which is most likely to have immediately preceded the passage?

 (A) Few composers of gospel music drew on traditions such as the spiritual in creating their songs.

 (B) Spirituals and Black gospel music were derived from the same musical tradition.

 (C) The creation and singing of spirituals, practiced by Black Americans before the Civil War, continued after the war.

 (D) Spirituals and gospel music can be clearly distinguished from one another.

 (E) Improvisation was one of the primary characteristics of the gospel music created by Black musicians.

  About a century ago, the Swedish physical scientist Arrhenius proposed a law of classical chemistry that relates chemical reaction rate to temperature. According to the Arrhenius equation, chemical reaction are increasingly

(5) unlikely to occur as temperatures approach absolute zero, and at absolute zero (zero degrees Kelvin, or minus 273 degrees Celsius) reactions stop. However, recent experimental evidence reveals that although the Arrhenius equation is generally accurate in describing the kind of chemical

(10) reaction that occurs at relatively high temperatures, at temperatures closer to zero a quantum- mechanical effect known as tunneling comes into play; this effect accounts for chemical reactions that are forbidden by the principles of classical chemistry. Specifically, entire molecules can "tunnel"

(15) through the barriers of repulsive forces from other molecules and chemically react even though these molecules do not have sufficient energy, according to classical chemistry, to overcome the repulsive barrier.

  The rate of any chemical reaction, regardless of the tem-

(20) perature at which it takes place, usually depends on a very important characteristic known as its activation energy. Any molecule can be imagined to reside at the bottom of a so-called potential well of energy. A chemical reaction corresponds to the transition of a molecule from the bottom of

(25) one potential well to the bottom of another. In classical

chemistry, such a transition can be accomplished only by going over the potential barrier between the wells, the height of which remains constant and is called the activation energy of the reaction. In tunneling, the reacting mole-

(30) cules tunnel from the bottom of one to the bottom of another well without having to rise over the barrier between the two wells. Recently researchers have developed the concept of tunneling temperature: the temperature below which tunneling transitions greatly outnumber Arrhenius transi-

(35) tions, and classical mechanics gives way to its quantum counterpart.

  This tunneling phenomenon at very low temperatures suggested my hypothesis about a cold prehistory of life: the formation of rather complex organic molecules in the

(40) deep cold of outer space, where temperatures usually reach only a few degrees Kelvin. Cosmic rays (high-energy protons and other particles) might trigger the synthesis of simple molecules, such as interstellar formaldehyde, in dark clouds of interstellar dust. Afterward complex organic

(45) molecules would be formed, slowly but surely, by means of tunneling. After I offered my hypothesis, Hoyle and Wickramasinghe argued that molecules of interstellar formaldehyde have indeed evolved into stable polysaccharides such as cellulose and starch. Their conclusions, although

(50) strongly disputed, have generated excitement among investigators such as myself who are proposing that the galactic clouds are the places where the prebiological evolution of compounds necessary to life occurred.

21. The author of the passage is primarily concerned with

 (A) describing how the principles of classical chemistry were developed

 (B) initiating a debate about the kinds of chemical reactions required for the development of life

 (C) explaining how current research in chemistry may be related to broader biological concerns

 (D) reconciling opposing theories about chemical reactions

 (E) clarifying inherent ambiguities in the laws of classical chemistry

22. According to the passage, classical chemical reactions and tunneling reactions are alike in which of the following ways?

 (A) In both types of reactions, reacting molecules have to rise over the barrier between the two wells.

(B) In both types of reactions, a transition is made from the bottom of one potential well to the bottom of another.

(C) In neither type of reaction does the height of the barrier between the wells remain constant.

(D) In neither type of reaction does the rate of a chemical reaction depend on its activation energy.

(E) In both types of reactions, reacting molecules are able to go through the barrier between the two wells.

23. According to the Arrhenius equation as discussed in the passage, which of the following statements about chemical reactions is true?

(A) Chemical reactions are less likely to occur at temperatures close to absolute zero.

(B) In some cases the rate of a chemical reaction is related to temperature and in other cases it is not.

(C) Chemical reactions frequently occur at a few degrees above absolute zero, but they are very unpredictable.

(D) The rate of a chemical reaction depends on many other factors besides temperature.

(E) Chemical reaction rate and temperature are not related.

24. The author's attitude toward the theory of a cold prehistory of life can best be described as

(A) neutral

(B) skeptical

(C) mildly positive

(D) very supportive

(E) pointedly critical

25. The author's hypothesis concerning be cold prehistory of life would be most weakened if which of the following were true?

(A)Cosmic rays are unlikely to trigger the formation of simple molecules.

(B)Tunneling occurs only in a narrow band of temperatures around zero degrees Kelvin.

(C)The synthesis of interstellar formaldehyde can be activated by means other than cosmic rays.

(D)Simple molecules can be synthesized by means of tunneling.

(E)Classical chemical reactions do not occur at temperatures close to absolute zero.

26.Which of the following best describes the hypothesis of Hoyle and Wickramasinghe as it is presented in the passage?

(A) Cosmic rays can directly synthesize complex organic molecules.

(B) The galactic clouds are the places where prebiological evolution of compounds necessary to life occurred.

(C) Interstellar formaldehyde can be synthesized by tunneling.

(D) Molecules of interstellar formaldehyde can evolve into complex organic molecules.

(E) Complex organic molecules can be synthesized from stable polysaccharides such as cellulose and starch.

27.Which of the following best describes the organization of the first two paragraphs of the passage?

(A) The author cites a basic principle of classical chemistry and then describes the research from which that principle was developed.

(B) The author cites an apparent contradiction to the principles of classical chemistry and then explains the process of a chemical reaction to show there is in fact no contradiction.

(C) the author describes the role of heat in chemical reactions and then offers a detailed explanation of its function.

(D) The author presents a law of classical chemistry in order to introduce a kind of chemical reaction that differs from it and then explains the essential difference between the two.

(E) The author presents the fundamental rules of classical chemistry in order to introduce an explanation of a specific chemical reaction.

28. PREFACE:

(A) improvisation

(B) burlesque

(C) epilogue

(D) tangent

(E) backdrop

29. DEBILITATE:
  (A) implicate
  (B) invigorate
  (C) obfuscate
  (D) realign
  (E) encumber

30. TASTY:
  (A) uninteresting
  (B) unfamiliar
  (C) unexpected
  (D) understated
  (E) undervalued

31. ABNEGATE:
  (A) refresh
  (B) reaffirm
  (C) relieve
  (D) react
  (E) reform

32. SERRIED:
  (A) partially formed
  (B) widely separated
  (C) narrowly missed
  (D) extremely grateful
  (E) reasonably clean

33. BOMBASTIC:
  (A) unflappable
  (B) uninspired
  (C) unpretentious
  (D) inscrutable
  (E) incisive

34. BANAL:
  (A) comfortable
  (B) novel
  (C) equal
  (D) fatal
  (E) competent

35. LANGUISH:
  (A) agitate
  (B) wander
  (C) relieve
  (D) discomfit

  (E) thrive

36. ENNUI:
  (A) intimidation
  (B) sleaze
  (C) faint recollection
  (D) keen interest
  (E) deep reservation

37. DAUNTLESS:
  (A) sophomoric
  (B) trifling
  (C) pusillanimous
  (D) specious
  (E) parsimonious

38. TEMERITY:
  (A) credibility
  (B) authority
  (C) celebrity
  (D) acrimony
  (E) circumspection

SECTION 2
Time –30 minutes
25 Questions

1. Drug companies lose money when manufacturing drugs that cure those suffering from rare diseases because selling a drug to only a few people usually does not recoup manufacturing expenses. Therefore, a company manufacturing any of the drugs that cure those suffering from loxemia, an extremely rare disease, will undoubtedly lose money.

   Which of the following, if true, most seriously weakens the conclusion above?
   (A)Several drugs that cure those suffering from loxemia also cure those suffering from very common illnesses.
   (B)Most of those who contract loxemia also contract another illness concurrently.
   (C)Most of the drug companies that manufacture drugs that cure rare diseases do not manufacture drugs that cure loxemia.
   (D)A sizable number of people are afflicted with one or another rare disease even though each rare disease afflicts only a small number of people.
   (E)The larger the amount of a drug that is manufactured, the lower the manufacturing expense for each unit of the drug that is produced.

2. The tomb of a warrior killed in 1501 bears a sculpted portrait depicting him dressed for battle. Some historians attribute the portrait to an artist from that century, but of the many references to the tomb in surviving documents, none that predates the 1800's mentions the portrait. The portrait is therefore more likely the work of a much later artist.

   Which of the following, if true, would also support the conclusion of the argument if substituted for the evidence given concerning the portrait?
   (A)The portrait of the warrior was commissioned by the family of the warrior's widow.
   (B)References in surviving documents mention that an artist was paid in 1525 for an unspecified number of works for the church in which the tomb is located

(C)The warrior is depicted in the portrait as wearing boots made of a material not used for boots until the 1700's.
(D)Some other art treasures from the church in which the tomb is located have been reliable dated to the 1400's.
(E)The portrait of the warrior on the tomb strongly resembles a portrait of him known to have been completed during his lifetime.

Questions 3-7
A florist is designing flower arrangements containing two or more varieties of flowers selected from among six varieties of flowers: freesias, irises, lilies, peonies, tulips, and zinnias. All acceptable arrangements conform to the following conditions:

If an arrangement contains any freesias, it cannot contain any zinnias.
If an arrangement contains any tulips, it cannot contain any zinnias.
If an arrangement contains any peonies, it must also contain at least one zinnia, and there must be exactly as many zinnias as peonies.
If an arrangement contains any irises, it must also contain tulips, and there must be twice as many tulips as irises.
If an arrangement contains freesias, the number of freesias must be greater than the total number of other flowers used.

3. Which of the following flower arrangements could be made acceptable simply by adding a tulip?
   (A)Three freesias, one lily, two tulips
   (B)Four freesias, two peonies, one tulip
   (C)Five freesias, one iris, one tulip
   (D)Two irises, two tulips, two zinnias
   (E)Two lilies, two peonies, two tulips

4. Which of the following, if added to an unacceptable flower arrangement consisting of four tulips and two freesias, would make the arrangement acceptable?
   (A)Four freesias
   (B)Four irises
   (C)Two lilies
   (D)Two peonies
   (E)Two zinnias

5.Each of the following is a pair of varieties of flowers that can be used together in an acceptable flower arrangement EXCEPT
(A)freesias and irises
(B)freesias and tulips
(C)irises and lilies
(D)irises and peonies
(E)lilies and zinnias

6.Which of the following unacceptable flower arrangements could be made acceptable simply by removing some or all of the flowers of one variety？
(A)Four freesias, one iris, one lily, one peony
(B)Four freesias, one iris, two tulips, one zinnia
(C)Four freesias, two irises, two tulips, one zinnia
(D)Three freesias, one lily, one peony, two zinnias
(E)Three freesias, two peonies, one tulip, two zinnias

7.If an unacceptable flower arrangement consisting of four freesias, one lily, one peony, and two tulips is to be made acceptable by adding or removing only one flower, which of the following must be done？
(A)Add one freesia
(B)Add one iris
(C)Add one zinnia
(D)Remove the peony
(E)Remove one tulip

8.Scientist：More than 1, 000 large asteroids regularly cross the Earth's path. Even though the probability of one colliding with the Earth is extremely slight, we should do whatever we can to reduce that probability since any such collision would be catastrophic. The best way to avoid such a disaster is to deflect the asteroids. The only known way of deflecting asteroids is by hitting them with nuclear weapons that would be stored in space stations.

The scientist's claims are structured so as to lead to which of the following conclusions？
(A)Nuclear technology is the only technology that can plausibly be used to prevent natural catastrophes.
(B)Nuclear weapons should be deployed in space.
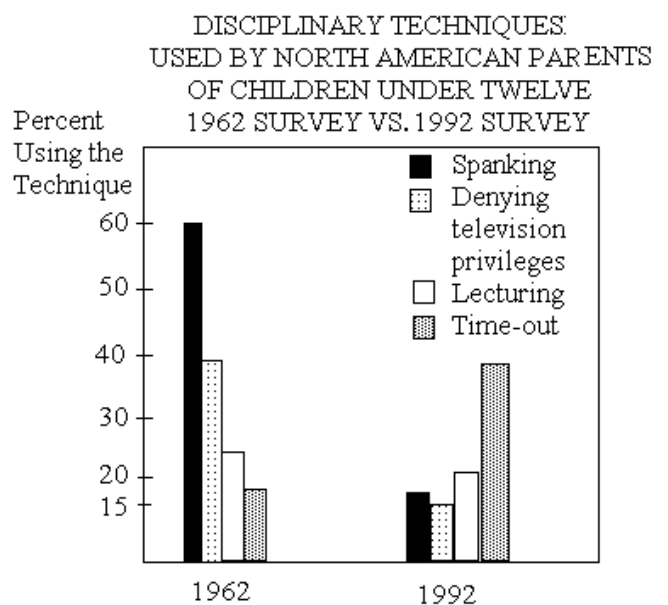(C)No catastrophe has yet been caused by the collision of an asteroid with the Earth.
(D)The 1, 000 large asteroids that cross the Earth's path pose only an extremely slight risk of colliding with the Earth.
(E)There is currently no acceptable use to which nuclear weapons can be put, aside from protecting the Earth from asteroids.

9.It has long been thought that high levels of the hormone testosterone contribute to the onset of heart disease in men. However, this view cannot be correct, since men who have heart disease typically show significantly lower levels of testosterone than do men who have not had heart disease.

The argument above assumes which of the following？
(A)Many men who have never had heart disease have unusually low levels of testosterone.
(B)Having heart disease does not significantly lower the level of testosterone in men.
(C)Levels of hormones other than testosterone significantly affect the likelihood that a man will develop heart disease.
(D)Heart disease and lowered testosterone levels in men are the effects of a single common cause.
(E)High levels of testosterone have never been thought to contribute to a serious disease other than heart disease.

DISCIPLINARY TECHNIQUES USED BY NORTH AMERICAN PARENTS OF CHILDREN UNDER TWELVE 1962 SURVEY VS. 1992 SURVEY

The time-out technique involves removing the child from

an undesirable situation in order to let the child think things over．Over the last two decades, family doctors have been advocating this technique as preferable to spanking, which is now known to be potentially injurious and no more effective.

10.Which of the following can properly be concluded from the data presented in the graph？
   (A)The 1962 survey was based on a larger sample than the 1992 survey was.
   (B)In the period between the surveys, denying television privileges was never the disciplinary technique most popular with parents.
   (C)The four disciplinary techniques featured in the graph were the only disciplinary techniques named by parents in either survey.
   (D)The 1962 survey allowed parents to name more than one disciplinary technique, but the 1992 survey may not have allowed this.
   (E)In the period between the surveys, there were no significant changes in the popularity of lecturing children as a disciplinary method.

11.People who engage in scuba diving are healthier, on average, than people who do not engage in this activity．Therefore, scuba diving tends to promote improved health.

The argument is most vulnerable to criticism on the grounds that it
   (A)presupposes that everyone who takes up scuba diving does so solely for health reasons
   (B)leads to a further and falsifiable conclusion that no one can achieve good health without engaging in scuba diving
   (C)fails to point out that a small number of people are seriously injured in scuba diving accidents each year
   (D)treats a precondition for improving one's health as though it were something that by itself could ensure good health
   (E)overlooks the possibility that people generally do not take up scuba diving unless they are in good health

Questions 12-15

An art museum owns six paintings by an eighteenth-century painter．The paintings, listed in order by estimated value from lowest to highest, are F, G, H, S, T, and U．Paintings F, G, and H are landscapes; S, T, and U are portraits．At any one time, exactly three of the six paintings are on exhibit, subject to the following restrictions:

  The paintings on exhibit cannot all be landscapes.
  If the exhibit includes only one portrait, that portrait must be U.
  H cannot be on exhibit at any time that T is on exhibit.

12.Which of the following could be the three paintings on exhibit at some point？
   (A)F, G, and H
   (B)F, G, and T
   (C)G, H, and S
   (D)G, S, and U
   (E)H, T, and U

13.Which of the following, if they are the first two paintings selected for inclusion in a future exhibit, leave the widest choice of paintings for the third painting in that future exhibit？
   (A)F and G
   (B)G and H
   (C)H and U
   (D)S and T
   (E)S and U

14.An exhibit must include S if which of the following is true？
   (A)T is included in the exhibit.
   (B)T is not included in the exhibit.
   (C)H is the only landscape included in the exhibit.
   (D)U is included in the exhibit.
   (E)The exhibit includes either F or G, but not both.

15.If U is undergoing restoration and is not available to be exhibited, which of the following is a painting that CANNOT then be exhibited？
   (A)F
   (B)G

91

(C)H

(D)S

(E)T

Questions 16-22

In each of the five consecutive days of a cooks' con-tention, exactly one of five well-known cooks－G, H, J, K, and L－will cook a demonstration meal．Each of the five cooks will cook exactly one of the five meals．The schedule for the cooks is constrained by the following conditions：

H cannot cook on any of the first three days．

L must cook on one of the days before the day on which H cooks．

J must cook on one of the days before the day on which G cooks．

G must cook on one of the days before the day on which K cooks．

16.Which of the following can be the order, from first to fifth, in which the five cooks cook the meals？

(A)G, K, L, J, H

(B)J, G, K, H, L

(C)J, G, K, L, H

(D)J, K, G, L, H

(E)L, J, H, K, G

17.If K cooks the fourth meal, which of the following must be true?

(A)G cooks on the third day.

(B)H cooks on the fifth day.

(C)J cooks on the first day.

(D)J cooks on the second day.

(E)L cooks on the third day.

18.Which of the following can be true?

(A)G cooks the first meal.

(B)J cooks the fourth meal.

(C)L cooks the fifth meal.

(D)H cooks on some day before G cooks.

(E)L cooks on some day after K cooks.

19.If G cooks a meal on some day before L does, then it must be true that

(A)G cooks the second meal

(B)J cooks the third meal

(C)H cooks the fourth meal

(D)K cooks the fifth meal

(E)L cooks the fourth meal

20.If J does not cook on the first day, then it must be true that

(A)G does not cook the third meal

(B)H does not cook the fourth meal

(C)J does not cook the second meal

(D)L does not cook the third meal

(E)K does not cook the fifth meal

21.If H does not cook the fifth meal, which of the fol-lowing must be true？

(A)G cooks the second meal.

(B)J cooks the first meal.

(C)J cooks the second meal.

(D)K cooks the fifth meal.

(E)L cooks the first meal.

22.If G cooks the third meal, which of the following is true？

(A)L is the only one of the five cooks who can cook the first meal.

(B)J is the only one of the five cooks who can cook the second meal.

(C)Any one of exactly three of the five cooks can cook the second meal.

(D)K is the only one of the five cooks who can cook the fourth meal.

(E)Either one of exactly two of the five cooks can cook the fifth meal.

23.Which of the following most logically completes the argument below?

In recent years, the proportion of car buyers who buy new cars rather than used cars has declined．Some consumers have attributed this change to an increase in new-car prices．As evidence of the price increase, they cite figures that show that, even adjusting for inflation, the price that the buyer of a new car pays,

on average, is far higher now than a few years ago.
This evidence is unpersuasive, however, because

(A) the value of a car that is bought new declines much more rapidly than does the value of a car that is bought used

(B) after someone has bought a car, it might be several years before that person next buys a car

(C) a decline in the proportion of car buyers who buy new cars must necessarily mean that the proportion who buy used cars has increased

(D) the relative increase in used-car sales might be explained by the decisions of only a small proportion of all car buyers

(E) the change in the average price paid for a new car could result solely from more people's rejecting inexpensive new cars in favor of used cars

24. In Bassaria a group of that country's most senior judges has criticized the uniform mandatory sentences recently introduced for certain specific crimes. The judges argue that such sentences, by depriving them of all discretion in setting sentences, make it impossible for them to consider either aggravating or extenuating circumstances and so make it impossible to achieve true justice—the fitting of the severity of the punishment to the gravity of the particular crime. Which of the following, if true, provides the strongest evidence for the claim that in Bassaria the newly introduced mandatory sentences are not necessarily a change for the worse with respect to achieving true justice as defined in the argument?

(A) Before mandatory sentencing, judges in eastern Bassaria imposed strikingly different sentences from those in western Bassaria for equally grave instances of the same kind of offense.

(B) In Bassaria the frequency of crimes that have been made subject to mandatory sentences is lower now than it was just prior to the introduction of mandatory sentencing.

(C) The law introducing mandatory sentences was passed in the legislature of Bassaria by a large majority and is unlikely to be repealed in the foreseeable future.

(D) There used to be a wide difference between the

minimum and the maximum sentences allowed by law in cases of crimes now subject to mandatory sentences.

(E) In Bassaria judges are appointed for life and are thus not easily influenced by political pressure groups.

25. Each of two particular inspection systems that are based on different principles would detect all product flaws but would also erroneously reject three percent of flawless products. Assuming there is no overlap between the products erroneously rejected by the two systems and also no interference between the systems if both operate, using both systems and rejecting only those products found flawed by both would be a way of avoiding all erroneous rejections.

Which of the following most precisely characterizes the reasoning in the argument?

(A) The reasoning is conclusive, that is, the conclusion cannot be false if the statements offered in its support are true.

(B) The reasoning is strong but not conclusive, if the statements offered in support of the conclusion are true, they provide good grounds for that conclusion, though it is possible that additional information might weaken the argument.

(C) The reasoning is weak; the statements offered in support of the conclusion, though relevant to it, by themselves provide at best inadequate grounds for the conclusion.

(D) The reasoning is flawed in that the conclusion is no more than a paraphrase of one of the pieces of evidence offered in its support.

(E) The reasoning is flawed in that the argument treats evidence that a factor is necessary to bring about an event as if it were evidence that the factor is sufficient to bring about that event.
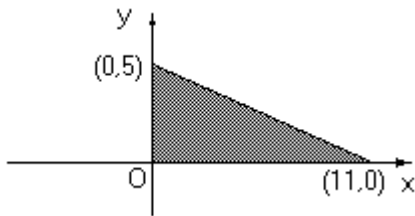
SECTION 3
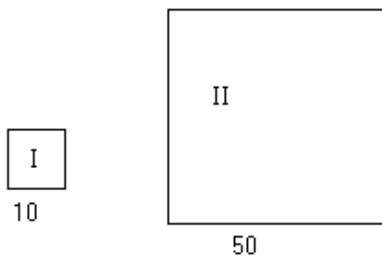Time 30- minutes
30 Questions

1. $\sqrt{13} + \sqrt{12}$ 5

$$x^2 y < 0$$
$$x > 0$$

2. xy 0

(0,5)

O   (11,0)

3. The area of the shaded   55
region

$$y = x + 1$$

4. $(x - y)^2$ 1

$$xy < 0$$

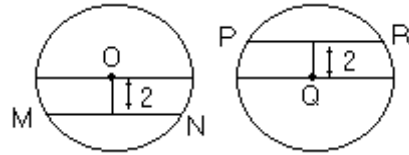5. $x + y$ 0

II

I
10

50

6. Area of square region Ⅰ   0.004
   Area of square regions Ⅱ

The formuia $P = 176 - 0.8A$ gives the maximum recommended pulse rate _P_ for a person exercising who is _A_ years of age.

---

7. The age in years of a   50
   person whose maximum
   recommended pulse rate
   when exercising is 136

---

8. The length of line   The length of line
   segment *MN* in the   segment *PR* in the
   circle with center *O*   circle with center *Q*

---

x and y are positive and $x^2 + y^2 = 1$

9. $(x + y)^2$ 1

A certain brand of soap powder is sold in boxes that contain either 8.0 pounds priced at \$2.24 per box or 10.5 pounds priced at \$3.00 per box.
(1 pound = 16 ounces)

10. The price per ounce   The price per ounce
    of the soap powder in   of the soap powder in
    the 8.0-pound box   the 10.5-pound box

---

x and y are integers.

$$0.35 < \frac{x}{y} < 0.45$$

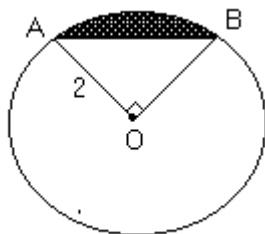11. $y - x$ 60

The average (arithmetic mean) of 50 measurements is 34.6, and the least and the greatest of the measurements are 18.3 and 50.9 respectively.

12. The median of the   34.6
    50 measurements

$$a \neq 0$$

13. $\frac{1}{a}\left(\frac{1}{a}\left(\frac{1}{a}\left(\frac{1}{a} \bullet a\right)a\right)a\right)$ 1

---

14. $\sqrt{2}$ $\frac{7}{5}$

O is the center of the circle.

15. Twice the area of   The area of triangle
    the shaded region   *AOB*

16. A ream of paper contains 480 sheets of paper. A certain box holds 16 reams. The number of sheets of paper in 5 of these boxes is
    (A) 2,400
    (B) 3,840
    (C) 7,680
    (D) 38,400
    (E) 76,800

17. The numbers in a table are arranged in 10 rows and 4 columns such that one number is placed at the intersection of each row and column. How many numbers are contained in the table?
    (A) 14
    (B) 40
    (C) 400
    (D) 10^4
    (E) 4^{10}

18. A recipe for 42 cookies requires $1\frac{3}{4}$ cups of flour. How many cups of flour are required to make 210 of these cookies?

    (A) 5
    (B) $8\frac{3}{4}$
    (C) $9\frac{1}{4}$
    (D) $10\frac{1}{2}$
    (E) $17\frac{1}{2}$

19. If $y = 7x - 5$, then $x =$

(A) $7y + 5$

(B) $\dfrac{y}{7} - 5$

(C) $\dfrac{y}{7} + 5$

(D) $\dfrac{y-5}{7}$

(E) $\dfrac{y+5}{7}$

20. If $2a + 2b = 7$ and $3c + 3d = 15$, then the average (arithmetic mean) of *a, b, c,* and *d* is

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

(B) $2\frac{1}{8}$

(C) 3

(D) $4\frac{1}{4}$

(E) $8\frac{1}{2}$

Questions 21-25 refer to the following information

A sample of employees were tested on data-entry skills for one hour, and the number of errors (x) they made and the percent of employees (p) making x errors were recorded as follows.

Number of Errors x	Percent of Employees p
0	2%
1	5%
2	10%
3	24%
4	17%
5	20%
6 or more	22%

21. What is the range for the number of errors made by the employees in the sample?
    (A) 4
    (B) 5
    (C) 6
    (D) 7

(E) It cannot be determined from the information
given.

22. What percent of the sample made fewer than 4 errors?
    (A) 17%
    (B) 24%
    (C) 39%
    (D) 41%
    (E) 58%

23. If 40 employees in the sample made exactly 5 error,
    what was the total number of employees in the
    sample?
    (A) 800
    (B) 600
    (C) 500
    (D) 400
    (E) 200

24. If those employees who made 6 or more errors were
    removed from the sample and an employee were
    selected at random from those remaining, what is the
    probability that the employee selected made no
    errors?
    (A) $\dfrac{1}{11}$
    (B) $\dfrac{1}{22}$
    (C) $\dfrac{1}{39}$
    (D) $\dfrac{1}{50}$
    (E) $\dfrac{1}{78}$

25. What was the median number of errors in the sample?
    (A) 3
    (B) 3.5
    (C) 4
    (D) 4.5
    (E) It cannot be determined from the information
        given.

26. In the rectangular coordinate system above, if P, not
    shown, is a point on AB and if the x-coordinate of P
    is 1, what is the y-coordinate of P?

(A) $\dfrac{4}{3}$

(B) $\dfrac{3}{2}$

(C) $\dfrac{7}{3}$

(D) $\dfrac{5}{2}$

(E) $\dfrac{8}{3}$

27. Circular region C has a radius of 1 centimeter and a
    circumference of x centimeters: If the region has an
    area of y square centimeters, what is the ratio of x to
    y?
    (A) 2
    (B) $\dfrac{1}{2}$
    (C) 2π
    (D) π
    (E) $\dfrac{1}{\pi}$

28. If $2.5\pi \times 10^5$ cubic feet of earth are to be removed
    in constructing a tunnel in the shape of a right
    circular cylinder 20 feet in diameter, what will be
    the length, in feet, of the tunnel?
    (A) 25,000
    (B) 12,500
    (C) 5,000
    (D) 2,500
    (E) 1,250

29. One adult and 10 children are on an elevator. If the
    adult's weight is 4 times the average (arithmeuc
    mean) weight of the children, the adult's weight is
    what fraction of the total weight of the 11 people on
    the elevator?
    (A) $\dfrac{1}{11}$
    (B) $\dfrac{1}{4}$
    (C) $\dfrac{2}{7}$

(D) $\dfrac{4}{11}$

(E) $\dfrac{2}{5}$

30. $\dfrac{(0.2)^5}{((0.2)^3)^2} =$

(A) 0.05
(B) 0.5
(C) 4.0
(D) 2.0
(E) 5.0

SECTION 4

Time-30 minutes

38 Questions

1. Although sales have continued to increase since last April, unfortunately the rate of increase has ----.
   (A) resurged
   (B) capitulated
   (C) retaliated
   (D) persevered
   (E) decelerated

2. Although the mental process that creates a fresh and original poem or drama is doubtless ---- that which originates and elaborates scientific discoveries, there is clearly a discernible difference between the creators
   (A) peripheral to
   (B) contiguous with
   (C) opposed to
   (D) analogous to
   (E) inconsistent with

3. It is disappointing to note that the latest edition of the bibliography belies its long-standing reputation for ---- by ---- some significant references to recent publications.
   (A) imprecision.. appropriating
   (B) relevance.. adding
   (C) timeliness.. updating
   (D) meticulousness.. revising
   (E) exhaustiveness.. omitting

4. Although Simpson was ingenious at ---- to appear innovative and spontaneous, beneath the ruse he remained uninspired and rigid in his approach to problem-solving.
   (A) intending
   (B) contriving
   (C) forbearing
   (D) declining
   (E) deserving

5. She was criticized by her fellow lawyers not because she was not ----, but because she so ---- prepared her cases that she failed to bring the expected

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number to trial.

(A) well versed.. knowledgeably

(B) well trained.. enthusiastically

(C) congenial.. rapidly

(D) hardworking.. minutely

(E) astute.. efficiently

6. Schlesinger has recently assumed a conciliatory attitude that is not ---- by his colleagues, who continue to ---- compromise.

(A) eschewed.. dread

(B) shared.. defend

(C) questioned.. reject

(D) understood.. advocate

(E) commended.. disparage

7. The National Archives contain information so ---- that researchers have been known never to publish because they cannot bear to bring their studies to an end.

(A) divisive

(B) seductive

(C) selective

(D) repetitive

(E) resourceful

8. HILL: MOUNTAIN::

(A) grass: rocks

(B) autumn: winter

(C) creek: river

(D) star: sun

(E) cliff: slope

9. AERATE: OXYGEN::

(A) eclipse: light

(B) desiccate: moisture

(C) precipitate: additive

(D) hydrate: water

(E) striate: texture

10. ORCHESTRA: MUSICIAN:

(A) cube: side

(B) kilometer: meter

(C) sonnet: poem

(D) biped: foot

(E) pack: wolf

11. EQUIVOCATION: MISLEADING::

(A) mitigation: severe

(B) advice: peremptory

(C) bromide: hackneyed

(D) precept: obedient

(E) explanation: unintelligible

12. CENSORSHIP: COMMUNICATION::

(A) propaganda: ideology

(B) preservative: decay

(C) revision: accuracy

(D) rest: atrophy

(E) exercise: fitness

13. BUS: PASSENGERS:

(A) flock: birds

(B) tanker: liquid

(C) envelope: letter

(D) bin: coal

(E) automobile: gasoline

14. BALLAD: STANZA::

(A) novel: chapter

(B) poem: meter

(C) play: dialogue

(D) movie: script

(E) photograph: caption

15. DISABUSE: FALLACY::

(A) cure: disease

(B) persevere: dereliction

(C) belittle: imperfection

(D) discredit: reputation

(E) discern: discrimination

16. BLANDISHMENT: CAJOLE::

(A) prediction: convince

(B) obstacle: impede

(C) embellishment: praise

(D) deficiency: compensate

(E) compliment: exaggerate

Although the hormone adrenaline is known to regulate memory storage, it does not pass from the blood into brain cells. We are faced with an apparent paradox: how can a

hormone that does not act directly on the brain have such a
(5)large effect on brain function?

Recently, we tested the possibility that one of the hormone's actions outside the brain might be responsible. Since one consequence of adrenaline release in an animal is an increase in blood glucose levels, we examined the
(10)effects of glucose on memory in rats. We found that glucose injected immediately after training enhances memory tested the next day. Additional evidence was provided by negative findings: drugs called adrenergic antagonists, which block peripheral adrenaline receptors, disrupted
(15)adrenaline's ability to regulate memory but did not affect memory enhancements produced by glucose that was not stimulated by adrenaline. These results are as they should be if adrenaline affects memory modulation by increasing blood glucose levels.

17. The primary purpose of the passage is to
(A) reconcile two opposing theories
(B) compare two different explanations for a phenomenon
(C) describe experimental research that appears to support an unpopular theory
(D) present evidence that may help to resolve an apparent contradiction
(E) describe a hypothesis that has cause a controversy

18. It can be inferred from the passage that the author would most likely describe the "additional evidence" (line 12) provided by experiments with adrenergic antagonists as
(A) revolutionary
(B) disappointing
(C) incomplete
(D) unexpected
(E) corroborative

19. The passage provides information about which of the following topics?
(A) The mechanism by which glucose affects memory storage
(B) The evidence that prompted scientist to test the effects of adrenaline on memory regulation
(C) The reason that the effects of glucose on memory were tested

(D) The ways that memory storage modifies the structure of the brain
(E) The kinds of training used to test memory enhancement in rats

20. The author refers to the results of the experiment using adrenergic antagonists as "negative findings" (line 13) most likely because the adrenergic antagonists
(A) failed to disrupt adrenaline's effect on memory
(B) did not affect glucose's ability to enhance memory.
(C) did not block adrenaline's ability to increase blood glucose levels
(D) only partially affected adrenaline's ability to enhance memory
(E) disrupted both adrenaline's and glucose's effect on memory

The age at which young children begin to make moral discriminations about harmful actions committed against themselves or others has been the focus of recent research into the moral development of children. Until recently,
(5)child psychologists supported pioneer developmentalist Jean. Piaget in his hypothesis that because of their immaturity, children under age seven do not take into account the intentions of a person committing accidental or deliberate harm, but rather simply assign punishment for transgressions on
(10)the basis of the magnitude of the negative consequences caused. According to Piaget, children under age seven occupy the first stage of moral development, which is characterized by moral absolutism (rules made by authorities must be obeyed) and imminent justice (if rules are broken,
(15)punishment will be meted out). Until young children mature, their moral judgments are based entirely on the effect rather than the cause of a transgression. However, in recent research, Keasey found that six- year-old children not only distinguish between accidental and intentional harm, but
(20)also judge intentional harm as naughtier, regardless of the amount of damage produced. Both of these findings seem to indicate that children, at an earlier age than Piaget claimed, advance into the second stage of moral development, moral autonomy, in which they accept social rules
(25)but view them as more arbitrary than do children in the first stage.

Keasey's research raises two key questions for developmental psychologists about children under age seven: do they recognize justifications for harmful actions, and do

(30)they make distinctions between harmful acts that are preventable and those acts that have unforeseen harmful consequences? Studies indicate that justifications excusing harmful actions might include public duty, self-defense, and provocation. For example, Nesdale and Rule concluded that
(35)children were capable of considering whether or not an aggressor's action was justified by public duty: five year olds reacted very differently to "Bonnie wrecks Ann's pretend house" depending on whether Bonnie did it "so somebody won't fall over it" or because Bonnie wanted "to
(40)make Ann feel bad."Thus, a child of five begins to understand that certain harmful actions, though intentional, can be justified; the constraints of moral absolutism no longer solely guide their judgments.

Psychologists have determined that during kindergarten
(45)children learn to make subtle distinctions involving harm. Darley observed that among acts involving unintentional harm, six-year-old children just entering kindergarten could not differentiate between foreseeable, and thus preventable, harm and unforeseeable harm for which the perpetrator
(50)cannot be blamed. Seven months later, however, Darley found that these same children could make both distinctions, thus demonstrating that they had become morally autonomous.

21. Which of the following best describes the passage as a whole?
(A) An outline for future research
(B) An expanded definition of commonly misunderstood terms
(C) An analysis of a dispute between two theorists
(D) A discussion of research findings in an ongoing inquiry
(E) A confirmation of an established authority's theory

22. According to the passage, Darley found that after seven months of kindergarten six year olds acquired which of the following abilities?
(A) Differentiating between foreseeable and unforeseeable harm
(B) Identifying with the perpetrator of a harmful action
(C) Justifying harmful actions that result from provocation
(D) Evaluating the magnitude of negative consequences resulting from the breaking of rules
(E) Recognizing the difference between moral absolu-

tism and moral autonomy

23. According to the passage, Piaget and Keasey would not have agreed on which of the following points?
(A) The kinds of excuses children give for harmful acts they commit
(B) The age at which children begin to discriminate between intentional and unintentional harm
(C) The intentions children have in perpetrating harm
(D) The circumstances under which children punish harmful acts
(E) The justifications children recognize for mitigating punishment for harmful acts

24. It can be inferred that the term "public duty" (line 33) in the context of the passage, means which of the following?
(A) The necessity to apprehend perpetrators.
(B) The responsibility to punish transgressors
(C) An obligation to prevent harm to another
(D) The assignment of punishment for harmful action
(E) A justification for punishing transgressions

25. According to the passage, Keasey's findings support which of the following conclusions about six-year-old children?
(A)They have the ability to make autonomous moral judgments.
(B)They regard moral absolutism as a threat to their moral autonomy.
(C)They do not understand the concept of public duty.
(D)They accept moral judgment made by their peers more easily than do older children.
(E)They make arbitrary moral judgments.

26. It can be inferred form the passage that Piaget would be likely to agree with which of the following statements about the punishment that children under seven assign to wrongdoing?
(A) The severity of the assigned punishment is determined by the perceived magnitude of negative consequences more than by any other factor.
(B) The punishment is to be administered immediately following the transgression.
(C) The children assign punishment less arbitrarily than they do when they reach the age of moral

autonomy.

(D) The punishment for acts of unintentional harm is less severe than it is for acts involving accidental harm.

(E) The more developmentally immature a child, the more severe the punishment that the child will assign.

27. According to the passage, the research of Nesdale and Rule suggests which of the following about five-year-old children?

(A) Their reactions to intentional and accidental harm determine the severity of the punishments they assign.

(B) They, as perpetrators of harmful acts, disregard the feelings of the children they harm.

(C) They take into account the motivations of actions when judging the behavior of other children.

(D) They view public duty as a justification for accidental, but not intentional, harm.

(E) They justify any action that protects them from harm.

28. DEBUT:
(A) collaboration
(B) monologue
(C) farewell performance
(D) repertoire standard
(E) starring role

29. WITHER:
(A) disagree
(B) shine
(C) plant
(D) adhere
(E) revive

30. BUCK:
(A) cover over
(B) assent to
(C) brag about
(D) improve
(E) repair

31. MEAN:
(A) trusting

(B) ardent
(C) clever
(D) incautious
(E) noble

32. ADJUNCT:
(A) expert appraisal
(B) generous donation
(C) essential element
(D) mild reproof
(E) impartial judgment

33. CANONICAL:
(A) imprecise
(B) ubiquitous
(C) superfluous
(D) nontraditional
(E) divisive

34. TICKLISH:
(A) heavy-handed
(B) significant
(C) tolerant
(D) impartial
(E) imperturbable

35. PREVALENT:
(A) invasive
(B) inconsistent
(C) indistinct
(D) unpalatable
(E) unusual

36. PENURY:
(A) approbation
(B) affluence
(C) objectivity
(D) compensation
(E) grandiosity

37. MINATORY:
(A) convenient
(B) nonthreatening
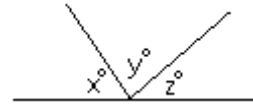(C) straightforward
(D) fastidious
(E) rational

38. CALUMNIOUS:

  (A) adept
  (B) aloof
  (C) quaint
  (D) decorous
  (E) flattering

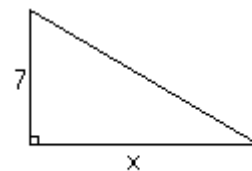1.　　　0.125　　　　　　$\dfrac{1}{8}$

2. The average (arithmetic　　　75
   mean) of x, y, and z

3.　　　WY　　　　　　XZ

The area or the triangle is 35

4.　　　　x　　　　　　　5

$$0 < x < 1$$

5.　　$x - x^2$　　　　　　$x^2 - x^3$

$$\dfrac{x}{y^2} > 0$$

6.　　　x

$$s > 0$$

7. Area of a square region　Twice the area of a
   with side s　　　　square region with
   　　　　　　　　side $\dfrac{s}{2}$

$$d = 561.165$$

8. The tenths digit of　　The tenths digit of
   $10^2\, d$　　　　　　$\dfrac{d}{10^2}$

$$x = 0.5$$

9. $\dfrac{(1+x)^2}{(1-x)^2}$ 9

Olive oil, vinegar, and water were combined to make 10 cups of salad dressing. The oil and vinegar were mixed in the ratio of 2 parts oil to 3 parts vinegar.

10. The number of cups   5
of water used in the
salad dressing

After a store had sold k television sets for p dollars each, it reduced the price p of each set by 5 percent and then sold twice as many sets at this reduced price.

11. The total revenue from $2.95pk$
the sale of all of these
television sets

△ABC is equilateral
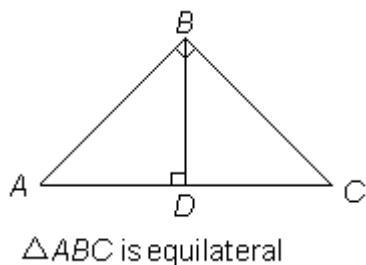
12. The degree measure   Half the degree measure
of ∠DBC   of ∠BDC

13. $(0.95)^{12} - (0.95)^{11}$ 0.95

$$x^2 + y^2 = \frac{37}{4}$$
$$xy = \frac{3}{2}$$

14. $(x+y)^2$ $\dfrac{49}{4}$

$$k^2 = 9$$

15. $2k^3$ $3k^2$

16. For which of the following lists of numbers is the median equal to the average (arithmetic mean)?
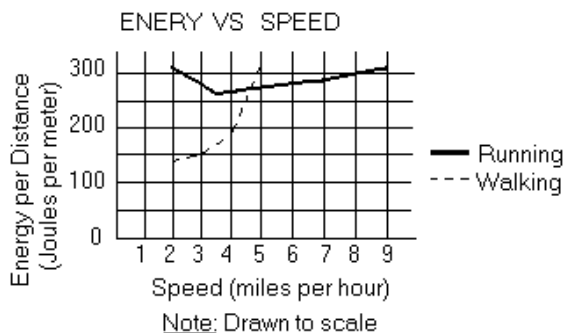
(A) 3, 4, 7
(B) 1, 10, 19
(C) 7, 7, 10, 12
(D) 0, 1, 1, 5
(E) 0, 2, 3, 4

17. $(1-0.05)^3 + 1 =$
(A) 0.0025
(B) 0.9025
(C) 1.4025
(D) 1.9025
(E) 2.1025

18. Which of the following is NOT a solution of the inequality $3x - 4 > -5x + 12$?
(A)   1.8
(B)   2.5
(C)   2.7
(D)   3.0
(E)   4.2

19. What is the area of a circular region with diameter 6?
(A) 6π
(B) 9π
(C) 12π
(D) 24π
(E) 36π

20. According to the graph above, at approximately what speed, in miles per hour (mph), is the energy per distance used in running approximately twice the energy per distance used in walking?
(A) Between 6.5 and 7 mph
(B) Between 5.5 and 6 mph
(C) Between 45. and 5 mph
(D) Between 3.5 and 4 mph
(E) Between 2.5 and 3 mph

Questions 21-25 refer to the following graph. In these questions all references to gasoline prices and taxes refer to aver age prices. including tax, and average taxes, in United States dollars, on June 1,1989.

AVERAGE GASOLINE PRICES AND TAXES
JUNE 1,1989
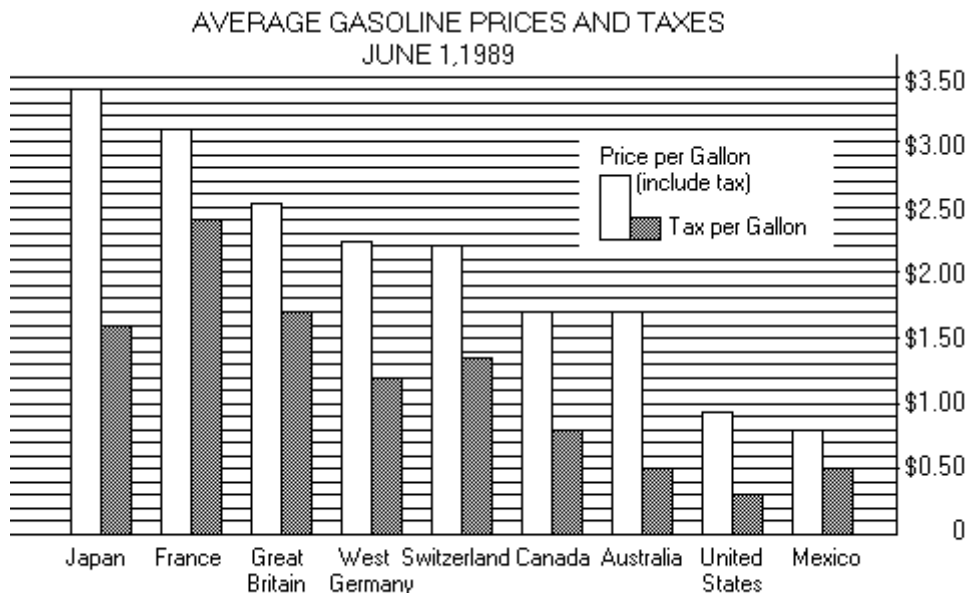
Note: Drawn to scale

21. What was the approximate price per gallon of gasoline for the country with the least lax per gallon of gasoline?
(A) $0.25
(B) $0.50
(C) $0.80
(D) $0.87
(E) $0.95

22. For a vacationer who planned to drive 3,500 miles in Mexico in June 1989, using a car with an average fuel efficiency of 25 miles per gallon of gasoline, which of the following would have been the best estimate of the cost of gasoline for the trip?
(A) $50
(B) $70
(C) $110
(D) $140
(E) $170

23. The ratio of the lowest price per gallon of gasoline to the highest price for the countries shown was closest to
(A) 1:3
(B) 1:4
(C) 1:5

(D) 1:6
(E) 1:7

24. For how many of the countries shown did the tax account for more than 50 percent of the price per gallon of gasoline?
(A) One
(B) Two
(C) Three
(D) Four
(E) Five

25. If the tax per gallon of gasoline in Canada were doubled and the increase in tax added to the price per gallon of gasoline, what percent of the resulting price per gallon would the tax then be?
(A) 36%
(B) 50%
(C) 64%
(D) 75%
(E) 90%

26. A gardener wishes to plant 5 bushes in a straight row. Each bush has flowers of a different solid color (white, yellow, pink red, and purple). How many ways can the bushes be arranged so that the middle

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bush is the one with red flowers?

(A) 24

(B) 30

(C) 60

(D) 96

(E) 120
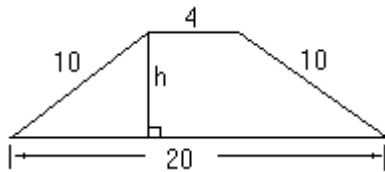
27. What is the value of h in the trapezoid above?

(A) $6\sqrt{2}$

(B) $4\sqrt{3}$

(C) 8

(D) 6

(E) 4

28. The bottom of an underground rectangular tank has an area of 12 square feet and the depth of the tank is 10 feet. A liquid is pumped into the empty tank at the constant rate of 30 cubic feet per minute. After how many minutes will the depth of the liquid in the tank be 8 feet?

(A) 1.5

(B) 2.0

(C) 2.5

(D) 3.2

(E) 4.0

29. A candy assortment consists of seven flavors of chocolate-covered creams packed in two-layered boxes with 27 creams in each layer. The flavors are always packed in rows so that the flavor varies with each piece in the following order, vanilla, orange, cherry, vanilla, raspberry, lime, pecan, cherry, lemon. How many chocolate-covered vanilla creams are needed to pack 200 boxes of the assortment?

(A) 600

(B) 1,200

(C) 1,800

(D) 2,400

(E) 3,600

30. If $\dfrac{m}{-19}$ is an even integer, which of the following

(A) m is negative

(B) m is positive

(C) m is a prime number

(D) m is an odd integer

(E) m is an even integer

SECTION 6
Time −30 minutes
25 Questions

Questions 1-8

A bakery makes nine kinds of cookies. Of these nine, three kinds are fruit cookies—G, H, and J; three kinds are nut cookies—K, L, and O; and three kinds are plain cookies—X, Y, and Z. Each day of the week, Monday through Sunday, the bakery will feature a special price on exactly three different kinds of cookies. The three featured cookies will be selected according to the following rules:

Each day at least one fruit cookie must be featured, and each day at least one nut cookie must be featured.

On any day on which cookie J is featured, cookie L cannot be featured.

On any day on which cookie k is featured, cookie Y must also be featured.

No kind of cookie can be featured more than three times in a week.

1. Which of the following lists three cookies that can be featured together?
   (A) G, L, Z
   (B) H, K, X
   (C) J, L, Y
   (D) J, O, Z
   (E) K, O, Y

2. On a day on which both cookie L and cookie Z are featured, which of the following can be the third kind of cookie featured?
   (A) H
   (B) J
   (C) O
   (D) X
   (E) Y

3. A partial schedule of featured cookies is shown below.

Monday	Tuesday	Wednesday	Thursday	Friday
L	H	O	G	Z

   According to this schedule, which of the following is a day on which cookie X CANNOT be one of the featured cookies?

   (A) Monday
   (B) Tuesday
   (C) Wednesday
   (D) Thursday
   (E) Friday

4. If cookie J is featured on Friday, Saturday, and Sunday; if cookie K is featured on Monday, Tuesday, and Wednesday, and if cookie G is featured only on Thursday, then cookie L can be featured on
   (A) Monday only
   (B) Thursday only
   (C) Monday, Tuesday, and Wednesday only
   (D) Friday, Saturday, and Sunday only
   (E) any two of the first four days of the week

5. If each kind of nut cookie is featured three times in one week, what is the maximum number or days on which plain cookies can be featured during that week?
   (A) Three
   (B) Four
   (C) Five
   (D) Six
   (E) Seven

6. If cookie H and cookie Y are each featured on Monday, Tuesday, and Wednesday, and if cookie G and cookie X are each featured on Thursday, Friday and Saturday, then the cookies featured on Sunday must include both
   (A) J and K
   (B) J and L
   (C) J and O
   (D) K and L
   (E) K and Z

7. If exactly seven kinds of cookies are featured during one week, which of the following must be true about that week?
   (A) X is the only kind of plain cookie that is featured
   (B) Y is the only kind of plain cookie that is featured
   (C) Z is the only kind of plain cookie that is featured.
   (D) On at least one day, both cookie G and cookie Z are featured.
   (E) On at least one day, both cookie J and cookie X are featured.

8.If cookie X is featured exactly twice and cookie Z is featured exactly three times in one week, which of the following must be true?

(A)Cookie G is featured exactly three times during the week.

(B)Cookie J is featured at most twice during the week.

(C)Cookie K is featured at most twice during the week.

(D)Cookie L is featured at most twice during the week.

(E) Cookie Y is featured exactly twice during the week.

9. In recent years, there has been a dramatic decline in the population of the shrike, a predatory bird that inhabits flat land, such as farms and pastures. Some ornithologists hypothesize that this decline is due to the introduction of new, more effective pesticides to control the insect species on which shrikes prey.

The answer to which of the following questions is NOT relevant to evaluating the ornithologists' hypothesis?

(A) Was there a decline in the shrike population before the new pesticides were first used?

(B) Have shrike populations declined significantly in those habitats where the new pesticides have not been used?

(C) Have the new pesticides more significantly reduced the population of insect species on which shrikes prey than did the pesticides previously used?

(D) Are insects that have consumed the new pesticides more toxic to the shrikes that eat those insects than were insects that consumed the less effective pesticides?

(E) Are the new pesticides considered by most people to be less harmful to the environment than the old pesticides were considered to be?

10. Census data for Prenland show that unmarried Prenlandic men in their thirties outnumber unmarried Prenlandic women in that age group by about ten to One. Most of these men do wish to marry. Clearly, however, unless many of them marry women who are not Prenlandic, all but a minority will remain unmarried.

The argument makes which of the following assumptions?

(A) Emigration from Preland is more common among women than among men.

(B) A greater proportion of Prelandic women in their thirties than of Prenlandic men of the same age would prefer to remain unmarried.

(C) It is unlikely that many of these unmarried Prenlandic men will marry women more than a few years older than themselves.

(D) Prenland has a high rate of divorce.

(E) Most of the unmarried Prenlandic men are unwilling to marry women who are not Prenlandic.

11.Certain extremely harmful bacteria found only in sewage are difficult to detect directly. Testing for *E. coli*, an easily detected and less harmful type of bacteria, in ocean water would be a reliable way of determining whether or not these more harmful bacteria are present, since ocean water contains *E. Coli* only if the water is contaminated with sewage that contains the harmful bacteria.

Which of the following, if true, most seriously weakens the argument?

(A) There are many different strains of the *E. coli* bacteria, and only some of these strains are harmful.

(B) Some types of bacteria found in sewage are neither disease-causing nor difficult to detect directly.

(C) Some of the types of bacteria found in sewage along with *E. coli* are not harmful to people unless the bacteria are ingested in large quantities.

(D) *E. coli* dies out much more quickly than some of the more harmful bacteria found in sewage and then can no longer be easily detected.

(E) Some of the types of bacteria found in sewage along with *E. coli* reproduce at a slower rate than *E. coli*.

Questions 12-17

A bank has exactly four cashier windows, arranged in a row and numbered consecutively 1 through 4 from one end of the row to the other. The bank has exactly six cashiers: two supervisors (Joan and Karim); and four trainees (Lorraine, Mark, Nora, and patrick). Throughout a particular peak-hour period, the stationing of cashiers at windows is restricted as follows:

There must be exactly one cashier at each window.
The cashier at window 2 must be a supervisor.
Lorraine must be at a window but cannot be at window 3.
If Mark is at one of the windows, Joan must be at a window immediately adjacent to it.
The cashiers at the windows must include either Nora or Patrick, but they cannot include both Nora and Patrick.

12. Which of the following lists the cashiers who can be stationed at windows 1 through 4 during this period?

1	2	3	4
(A) Joan	Karim	Mark	Lorraine
(B) Joan	Karim	Nora	Lorraine
(C) Karim	Nora	Joan	Lorraine
(D) Mark	Joan	Lorraine	Patrick
(E) Patrick	Joan	Nora	Lorraine

13. Which of the following must be true about the stationing of the cashiers during this period?
(A) Joan is at window 1 or at window 2.
(B) Karim is at window 2 or at window 4.
(C) Lorraine is at window 1 or window 4.
(D) Nora is at window 1 or at window 3.
(E) Patrick is at window 3 or at window 4.

14. If during this period Patrick and Mark, not neces-

sarily in that order, are stationed at immediately adjacent windows, which of the following must be stationed at window 4 during this period?
(A) Joan
(B) Karim
(C) Lorraine
(D) Mark
(E) Patrick

15. If during this period Lorraine and Mark, not neces-sarily in that order, are stationed at immediately adjacent windows, which of the following can be stationed at window 1 during this period?
(A) Joan
(B) Karim
(C) Lorraine
(D) Mark
(E) Nora

16. If during this period Lorrained and Nora, not neces-sarily in that order, are stationed at immediately adjacent windows, which of the following must be true during this period?
(A) Joan is stationed at window 1.
(B) Joan is stationed at window 2.
(C) Karim is stationed at window 2
(D) Nora is stationed at windows 3.
(E) Patrick is stationed at window 1.

17. If during this period Mark is stationed at a window, which of the following CANNOT be stationed at a window during this period?
(A) Joan
(B) Karim
(C) Lorraine
(D) Nora
(E) Patrick

Questions 18-22
Seven photographs—three landscapes: F, H, and J; and four still lifes: Q, R, T and W—will appear on the first seven pages—numbered consecutively from page 1 through page 7—of an exhibit catalog. Each page will contain exactly one of the photographs. The ordering of the photographs in the catalog is governed by the following conditions.

J and W, not necessarily in that order, must appear on consecu-
tively numbered pages.

The three landscapes cannot appear on-consecutively numbered
pages.

Neither page 2 not page 4 is a page on which a landscape can
appear.

A landscape must appear on page 7

18. Which of the following is an acceptable ordering of the photographs in
the catalog?

	Page 1	Page 2	page 3	Page 4	page 5	page 6	page 7
(A)	F	T	H		Q	W	R	J
(B)	H	Q	J	W	R	F	T
(C)	J	W	H	R	T	Q	F
(D)	Q	T	R	W	J	F	H
(E)	T	F	Q	W	J	R	H

19. Any of the following can appear on page 3 EXCEPT
(A) J
(B) Q
(C) R
(D) T
(E) W

20. If F appears on page 6, H must appear on page
(A) 1
(B) 2
(C) 3
(D) 5
(E) 7

21. If the still lifes all appear on consecutive pages,
which of the following must be true?
(A) A still life appears on page 1.
(B) A still life appears on page 5.
(C) J appears on page 6.
(D) T appears on page 4.
(E) W appears on page 5

22. If F and H, not necessarily in that order, appear on
consecutive pages, which of the following can be
true?

(A) J appears on page 1
(B) J appears on page 5
(C) R appears on page 6
(D) W appears on page 1
(E) W appears on page 5

23. The organizers of tomorrow's outdoor concert
announced that it will go on tomorrow on schedule
unless bad weather is forecast or too few advance
tickets are sold. If the concert is canceled, refunds
will be made to ticket holders. Since some ticket
holders have already been issued refunds even though
more than enough advance tickets were sold, it must
be the case that bad weather is forecast.

Which of the following is an error of reasoning con-
tained in the argument?
(A) It proceeds as if a condition, which by itself is
enough to guarantee a certain result, is the only
condition under which that result would occur.
(B) It bases a conclusion that is known to require
two conditions on evidence that bears on only
one of those conditions.
(C) It explains one event as being caused by another
event, even though both events must actually

have been caused by some third, unidentified event.

(D) It treats evidence for the absence of one condition under which a circumstance would occur as conclusive evidence that that circumstance will not occur.

(E) Evidence given to support the conclusion actually undermines it.

24. Although the prevailing supposition has been that it is too hot for microorganisms to survive deep below the Earth's surface, some scientists argue that there are living communities of microorganisms there that have been cut off from surface life for millions of years. These scientists base their argument on the discovery of living microorganisms in samples of material that were taken from holes drilled as deep as 1.74 miles.

The scientists' argument depends on which of the following assumptions?

(A) The microorganisms brought up were of a species that is related to those previously known to science.

(B) No holes have been drilled into the Earth's surface to a distance deeper than 1.74 miles

(C) The microorganisms did not come from surface soil that came into contact with the drilling equipment.

(D) The stratum from which the samples came has been below the surface of the Earth ever since the Earth came into existence.

(E) The temperature at the bottom of the holes drilled was not significantly hotter than that of the hottest spots on the Earth's surface.

25. For 20 years all applicants for jobs as technicians at EquipCorp were required to demonstrate that they could operate and repair the machinery that was central to EquipCorp's manufacturing business. Now, however, that particular machinery is obsolete, and very different machinery fills the central role. Therefore, the old requirement is no longer a useful method for evaluating whether applicants for jobs as technicians at EquipCorp have the skills necessary for the job.

Which of the following, if true, most strengthens the

argument?

(A) The machinery that is now obsolete was used by a large number of manufacturing companies before it became obsolete.

(B) Among the people already holding jobs as technicians at Equip Corp, those who are most skillful at operating the new machinery had been some of the least skillful at operating the old machinery

(C) Most people applying for jobs as technicians today have much broader skills than did people applying for jobs as technicians 20 years ago.

(D) The skills required to operate and repair the obsolete machinery are useful in operating and maintaining many other types of machinery at EquipCorp that are not obsolete.

(E) Much of the machinery that EquipCorp now uses in manufacturing is very likely to become obsolete within the next 20 years.