Mathematics M.C.Qs

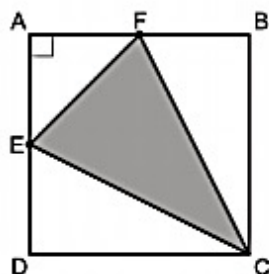|	
No. of Questions: 45 (from 1 to 45)	Time: 80 Minutes
Questions on Page Numbers: 1 To 9	Negative Markings: **No**

1. On a 3 day fishing trip, 4 adults consumed food costing Rs. 9000. For the same food costs per person per day, what would be the cost of food consumed by 7 adults during a 5-day fishing trip?

   A) Rs.45000
   B) Rs.26250
   C) Rs.15750
   D) Rs.15000

2. The number of rooms at hotel A is 10 less than twice the number of rooms at hotel B. If the total number of rooms at hotel A and hotel B is 425, what is the number of rooms in hotel A?

   A) 180
   B) 200
   C) 240
   D) 280

3. A pilotless cargo carrier brings water, air and dry food to a space station. A third of cargo's weight is water and the ratio, by weight, of air to dry food is $2:3$. If the cargo contains $1,800$ pounds of water, how many pounds of air does it contain?

   A) $1,200$
   B) $1,300$
   C) $1,440$
   D) $2,160$

4. After 8 pm, a ride in a taxi costs 2.50 dollars plus 0.30 dollars for every fifth of a mile traveled. If a passenger travels b miles, then what is the cost of the trip, in dollars, in terms of b?

   A) $2.5 + 0.3b$
   B) $2.5 + 1.5b$
   C) $2.5 + 0.6b$
   D) $250 + 30b$

5. Sara ran along the fence that surrounds her house. The fence forms a rectangle whose dimensions are 20×30 meters. Beginning from a vertex of the rectangle, Sara started running along one of the long sides, and stopped when she had completed running along 7 sides. This jog took her 30 seconds. What was Sara's speed in meters per second?

   A) $\frac{2}{3}$

   B) $\frac{8}{3}$

   C) $\frac{17}{3}$

   D) 6

6. $25\%(110) + 11\%(250) =$

A) 25
B) 35
C) 45
D) 55

7.

F and E are midpoints of AB and AD respectively. If the side of the square is $ABCD$ is 8, what is the area of triangle CEF?

A) $8\sqrt{2}$
B) 18
C) $16\sqrt{2}$
D) 24

8. A department store's annual revenue in 2010 was Rs.240,000. Following an advertising campaign, the store's revenue increased in 2011 to a sum of Rs. 288,000. What is the percent increase in the store's annual revenue between 2010 and 2011?

A) 40%
B) 30%
C) 20%
D) 10%

9. Twenty percent of the programmers in a startup company weigh 200 pounds or more. Twenty-five percent of the programmers that are under 200 pounds in that same company weigh 100 pounds or less. What percent of the programmers in the startup company weigh between 100 and 200 pounds?

A) 15%
B) 20%
C) 25%
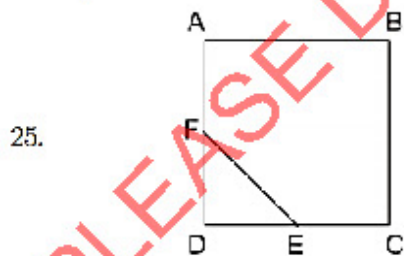D) 60%

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10. Ali will jog from home at x miles per hour and then walk back home by the same route at y miles per hour. How many miles from home can Ali jog so that he spends a total of t hours jogging and walking?

    A) $\dfrac{xt}{y}$

    B) $\dfrac{x+t}{xy}$

    C) $\dfrac{xyt}{x+y}$

    D) $\dfrac{x+y+t}{xy}$

11. $5^7.5^7 =?$

    A) 10^7

    B) 5^{14}

    C) 25^7

    D) 5^{49}

12. Given that $2x + 7 > 5$, and $5x - 13 < 7$, all values of x must be between which of the following pair of integers?

    A) -4 and -1
    B) -1 and 4
    C) -4 and 1
    D) -2 and 5

13. A part-time employee whose hourly wage was increased by 25 percent decided to reduce the number of hours worked per week so that the employee's total weekly income would remain unchanged. By what percent should the number of hours worked be reduced?

    A) 12.5 percent
    B) 20 percent
    C) 25 percent
    D) 50 percent

14. What is the sum of prime numbers that are greater than 10 and less than 20?

    A) 41
    B) 43
    C) 47
    D) 60

(go on to the next page)

15. The income tax in country X is 8% of any income upto 5000 dollars. For incomes over 5000 dollars, an 8% tax is imposed on the first 5000 dollars, and a 10% tax is imposed on the portion of the total income in excess of 5000 dollars. If A paid 950 dollars in income tax last month, then what was A's income in dollars?

   A) 6500
   B) 10500
   C) 11000
   D) 13500

16. Which of the following is NOT true?

   A) 2.5 is the reciprocal of 0.4

   B) $(1 + \frac{x}{2})$ is reciprocal of $\frac{2}{2+x}$

   C) $\frac{2a}{b}$ is reciprocal of $\frac{b}{0.5a}$

   D) $\frac{m}{(\frac{7}{8})}$ is reciprocal of $\frac{7}{8m}$

17. If the operation $x \star y$ is defined by the equation $x \star y = xy/(x+y)$ for all $x \neq -y$, then $(18) \star (9) =$

   A) 2
   B) 3
   C) 6
   D) 9

18. The ratio of toddlers to infants at a day care center is 7 to 3. If twelve more infants join the day care to change the ratio to 7 to 5, how many toddlers are there at this day care center?

   A) 24
   B) 36
   C) 42
   D) 72

19. $\dfrac{2}{\frac{2}{7} - \frac{2}{5}} = ?$

   A) $\dfrac{-35}{2}$

   B) $\dfrac{-35}{12}$

   C) $\dfrac{-2}{35}$

   D) $\dfrac{2}{35}$

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20. Compound X contains elements A and B at an approximate ratio, by weight, of $2:10$. Approximately how many grams of element B are there in 324 grams of compound X?

   A) 54
   B) 162
   C) 250
   D) 270

21. If the length of the longest chord of a certain circle is 10, what is the radius of that certain circle?

   A) 2.5
   B) 5
   C) 15
   D) 20

22. Given $r = 98.3$, which of the following best approximates the value of $(r/(2r+2))$?

   A) 1/4
   B) 1/2
   C) 2/3
   D) 4/7

23. Given that $1 - 3x > 4$ and $2x - 3 < 5$, all values of x must be between which of the following pair of integers?

   A) 3 and 8
   B) 1 and 4
   C) 3 and 12
   D) -5 and 1

24. The price of a gallon of gasoline was \$30 on the 15th of March. By the 15th of April, the price per gallon had increased by 20%, and by the 15th of May the price had increased again to a total of \$45 per gallon. What was the percent change in the price of gallon of gasoline between the 15th of April and 15th of May?

   A) 20%
   B) 25%
   C) 30%
   D) 50%

25.

   $ABCD$ is square. F and E are midpoints of sides AD and CD respectively. The area of triangle FED is 2 sq inches. What is the area of square $ABCD$ (in sq inches)?

   A) 4
   B) 8
   C) 16
   D) 32

(go on to the next page)

26. Beth made 12 mugs out of porcelain. If the average weight (arithmetic mean) of a mug is 9 ounces, what is the total weight of the mugs, in ounces?

    A) 128
    B) 108
    C) 21
    D) 4/3

27. The sum $\frac{7}{8} + \frac{1}{9}$ is between

    A) $\frac{1}{2}$ and $\frac{3}{4}$

    B) $\frac{3}{4}$ and 1

    C) 1 and $1\frac{1}{4}$

    D) $1\frac{1}{4}$ and $1\frac{1}{2}$

28. If $x = 1 - 3t$ and $y = 2t - 1$, then for what value of t does $x = y$?

    A) $\frac{5}{2}$

    B) $\frac{3}{2}$

    C) $\frac{2}{3}$

    D) $\frac{2}{5}$

29. A total of n trucks and cars are parked in a lot. If the number of cars is $\frac{1}{4}$ the number of trucks, and $\frac{2}{3}$ of trucks are pickups, how many pickups, in terms of n are parked in the lot?

    A) $\frac{1}{6}n$

    B) $\frac{5}{12}n$

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

    D) $\frac{8}{15}n$

30. Sixty percent of the members of a study group are women, and 45 percent of those women are lawyers. If one member of the study group is selected at random, what is the probability that the member selected is a women lawyer?

    A) 0.10
    B) 0.15
    C) 0.27
    D) 0.45

(go on to the next page)

31. When positive integer is x is divided by positive integer y, the remainder is 9. If $\frac{x}{y} = 96.12$, what is the value of y?

    A) 96
    B) 75
    C) 25
    D) 12

32. A rectangular box is 10 inches wide, 10 inches long, and 5 inches high. What is the greatest possible distance, in inches, between any two points on box?

    A) 15
    B) 20
    C) 25
    D) $10\sqrt{2}$

33. Ali's closet contains three shirts and two pairs of pants. How many different dressing combinations (of shirts and pants) does Ali have?

    A) 2
    B) 3
    C) 6
    D) 8

34. What is degree measure of the angle formed by the hands of a clock at 5 o' clock?

    A) 120
    B) 140
    C) 150
    D) 160

35. A *Fibonacci* sequence of numbers has the first two numbers equal to 1, and each successive number is obtained by adding the last two numbers together. The following six numbers are derived from such a Fibonacci sequence by adding each number of the Fibonacci sequence to a number from another (unknown) sequence. What is the seventh number?

$$3 \quad 4 \quad 7 \quad 10 \quad 16 \quad 21 \quad \cdots$$

    A) 29
    B) 30
    C) 31
    D) 33

36. An integer greater than 100 has its unit digit twice that of its tens digit. The hundreds digit is 25 percent of the tens digit. If the sum of all the digits is 13, what is the value of the integer?

    A) 436
    B) 184
    C) 148
    D) 724

(go on to the next page)

37. The use of a neighborhood car wash costs n dollars for a membership and p cents for each wash. If a membership includes a bonus of 4 free washes, which of the following reflects the cost, in dollars, of getting a membership at the car wash and washing a car q times, if q is greater than 4?
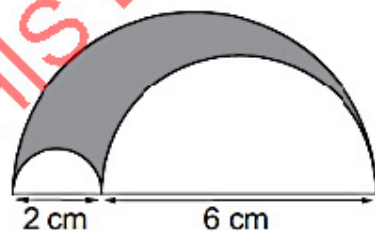
    A) $100n + pq - 4p$
    B) $n + 100pq - 25p$
    C) $n + pq - \dfrac{p}{25}$
    D) $n + \dfrac{pq}{100} - \dfrac{p}{25}$

38. The diameter of the wheel of Ahmed's bicycle is 0.72m. The bicycle wheel completes 750 revolutions when Ahmed comes from school to house. Find the distance in meters between school and house?

    A) 1695
    B) 848
    C) 169500
    D) 84800

39. The figure on the right shows 3 semi-circles. What is the area of the shaded region?

    A) 3π
    B) 6π
    C) 24π
    D) Cannot be determined.

2 cm   6 cm

40. Jawad accepted a reduction of 15% in his salary when his company was not doing well. Now his company's financial position has improved and his boss wants to restore his original salary. By what percentage must his reduced salary be increased?

    A) 15.65%
    B) 16.65%
    C) 17.65%
    D) 18.65%

41. If $9^{4x+3} = 27^{2x-4}$, what is the value of x?

    A) -1
    B) -3
    C) -6
    D) -9

42. When an integer is divided by a positive integer, it results in a quotient and a remainder calculated according to the following rule. Let a be an integer (dividend) and d a positive integer (divisor). Then there are unique integers q (quotient) and r (remainder), with $0 \leqslant r < d$, such that $a = dq + r$. Using this rule, pick the quotient that would result when -23 is divided by 4 from the following choices.

    A) 6
    B) 5
    C) -6
    D) -5

(go on to the next page)

43. Of the 50 researchers in a work group, 40 percent will be assigned to team A and the remaining 60 percent to team B. However, 70 percent of the researchers prefer team A and 30 percent prefer team B. What is the lowest possible number of researchers who will NOT be assigned to the team they prefer?

    A) 15
    B) 17
    C) 20
    D) 25

44. At least $\frac{2}{3}$ of the 40 members of a committee must vote in favor of a resolution for it to pass. What is the greatest number of members who could vote against the resolution and still have it pass?

    A) 17
    B) 16
    C) 14
    D) 13

45. If machine X can produce 1000 bolts in 4 hours and machine Y can produce 1000 bolts in 5 hours, in how many hours can machines X and Y, working together at these constant rates, produce 1000 bolts?

    A) 2 hours

    B) $2\frac{2}{5}$ hours

    C) $2\frac{2}{9}$ hours

    D) $4\frac{1}{2}$ hours

If you finish before time is called, you may check your work on this section only.

This is the end of Mathematics MCQs. Next section is English MCQs.

English M.C.Qs

No. of Questions: 45 (from 46 to 90)	Time: 60 Minutes
Questions on Page Numbers: 10 To 19	Negative Markings: **No**

For questions 46-60, select the best option.

46.   The way my father likes to _____ with any salesperson to see if he can bargain for a lower price is embarrassing.
A.   striate
B.   variegate
C.   teem
D.   wrangle

47.   The _____ construction crew built large new buildings all over the East Coast, wherever the demand for qualified workers took them.
A.   laconic
B.   irresolute
C.   itinerant
D.   parietal

48.   The CEO's large expense accounts proved she was a _____ spender with the company's money.
A.   ineffectual
B.   liberal
C.   malignant
D.   insolvent

49.   Daniela found the unchanging rhythm of the musical piece to be annoyingly _____.
A.   recusant
B.   monotonous
C.   irreverent
D.   redolent

50.   The young, thin boy surprised his wrestling opponent with his _____ strength.
A.   wiry
B.   frolicsome
C.   pretentious
D.   endemic

51.   Charlie's _____ behavior made it clear that he had been highly educated in matters of etiquette.
A.   decorous
B.   surreptitious
C.   caustic
D.   irksome

52.   Staring at the _____ crystal blue water of the sea, Eileen thought she had never seen anything so beautiful.
A.   flamboyant
B.   appalling
C.   devious
D.   pristine

53.   The protesters were concerned that the proposed legislation would have a(n) _____ effect on the state's nature preserves.
A.   scintillating
B.   deleterious
C.   punctilious
D.   parsimonious

54.   Not swayed by his student's _____ flattery, the professor told him that his grade would not be changed.
A.   forlorn
B.   undulating
C.   unctuous
D.   frowsy

55.   Tonya found Isaac's public declarations of his love for her _____ and embarrassing.
A.   necrotic
B.   witless
C.   malodorous
D.   pliant

56.   The gypsy girl, decked out in _____ finery, and with her disheveled hair streaming over shoulders, was indeed a _____ sight.
A.   verdant - wistful
B.   sartorial - flagrant
C.   specious - poignant
D.   tawdry - bizarre

57.   Yellow fever, the disease that killed 4,000 Philadelphians in 1793, and so _____ Memphis, Tennessee, that the city lost its charter, has reappeared after nearly two decades in _____ in the western hemisphere.

A.   disabled - quarantine
B.   decimated - abeyance
C.   ravaged - secret
D.   coupled - quiescence

58.   The painting was larger than it appeared to be, for hanging in a darkened recess of the chapel, it was _____ by the perspective.
A.   embellished
B.   jeopardised
C.   aggrandized
D.   diminished

59.   We have in America _____ speech that is neither American, Oxford English, nor English but a _____ of all three.
A.   motley - miracle
B.   feigned - patchwork
C.   mangled - medley
D.   hybrid - combination

60.   Old beliefs die hard, even when jobs become _____ the long-standing fear that unemployment could return at a moment's notice _____
A.   protected - subsided
B.   vacant - perished
C.   available - receded
D.   plentiful - persisted

Questions 61-70:
Each of the following questions presents an argument. Select the statement that best supports the author's main argument.

61.   If you're a fitness walker, there is no need for a commute to a health club. Your neighborhood can be your health club. You don't need a lot of fancy equipment to get a good workout either. All you need is a well-designed pair of athletic shoes.

This paragraph best supports the statement that
A.   fitness walking is a better form of exercise than weight lifting.
B.   a membership in a health club is a poor investment.
C.   walking outdoors provides a better workout than walking indoors.
D.   fitness walking is a convenient and valuable form of exercise.

62.   It is well known that the world urgently needs adequate distribution of food, so that everyone gets enough. Adequate distribution of medicine is just as urgent. Medical expertise and medical supplies need to be redistributed throughout the world so that people in emerging nations will have proper medical care.

This paragraph best supports the statement that
A.   the majority of the people in the world have never been seen by a doctor.
B.   food production in emerging nations has slowed during the past several years.
C.   most of the world's doctors are selfish about giving time and money to the poor.
D.   many people who live in emerging nations are not receiving proper medical care.

63.   The criminal justice system needs to change. The system could be more just if it allowed victims the opportunity to confront the person who has harmed them. Also, mediation between victims and their offenders would give the offenders a chance to apologize for the harm they have done.

This paragraph best supports the statement that victims of a crime should
A.   learn to forgive their offenders.
B.   have the right to confront their offenders.
C.   learn the art of mediation.
D.   insist that their offenders be punished.

64.	In the past, consumers would rarely walk into an ice cream store and order low-fat ice cream. But that isn't the case today. An increasing health consciousness combined with a much bigger selection of tasty low-fat foods in all categories has made low-fat ice cream a very profitable item for ice cream store owners.

This paragraph best supports the statement that
A.	low-fat ice cream produces more revenue than other low-fat foods.
B.	ice cream store owners would be better off carrying only low-fat ice cream.
C.	ice cream store owners no longer think that low-fat ice cream is an unpopular item.
D.	low-fat ice cream is more popular than other kinds of ice cream.

65.	A few states in this country are considering legislation that would prohibit schools from using calculators before the sixth grade. Other states take a different position. Some states are insisting on the purchase of graphing calculators for every student in middle school.

This paragraph best supports the statement that in this country

A.	there are at least two opinions about the use of calculators in schools.
B.	calculators are frequently a detriment to learning math.
C.	state legislators are more involved in education than ever before.
D.	the price of graphing calculators is less when schools buy in bulk.

66.	One of the warmest winters on record has put consumers in the mood to spend money. Spending is likely to be the strongest in thirteen years. During the month of February, sales of existing single-family homes hit an annual record rate of 4.75 million.

This paragraph best supports the statement that
A.	consumer spending will be higher thirteen years from now than it is today.
B.	more people buy houses in the month of February than in any other month.
C.	during the winter months, the prices of single-family homes are the lowest.
D.	warm winter weather is likely to affect the rate of home sales.

67.	One New York publisher has estimated that 50,000 to 60,000 people in the United States want an anthology that includes the complete works of William Shakespeare. And what accounts for this renewed interest in Shakespeare? As scholars point out, his psychological insights into both male and female characters are amazing even today.

This paragraph best supports the statement that
A.	Shakespeare's characters are more interesting than fictional characters today.
B.	people today are interested in Shakespeare's work because of the characters.
C.	academic scholars are putting together an anthology of Shakespeare's work.
D.	New Yorkers have a renewed interested in the work of Shakespeare.

68.	Today's workforce has a new set of social values. Ten years ago, a manager who was offered a promotion in a distant city would not have questioned the move. Today, a manager in that same situation might choose family happiness instead of career advancement.

This paragraph best supports the statement that
A.	most managers are not loyal to the corporations for which they work.
B.	businesses today do not understand their employees' needs.
C.	employees' social values have changed over the past ten years.
D.	career advancement is not important to today's business managers.

69.   Generation Xers are those people born roughly between 1965 and 1981. As employees, Generation Xers tend to be more challenged when they can carry out tasks independently. This makes Generation Xers the most entrepreneurial generation in history.

This paragraph best supports the statement that Generation Xers
A.   work harder than people from other generations.
B.   have a tendency to be self-directed workers.
C.   have an interest in making history.
D.   tend to work in jobs that require risk-taking behavior.

70.   For too long, school cafeterias, in an effort to provide food they thought would be appetizing to young people, mimicked fast-food restaurants, serving items such as burgers and fries, pizza, hot dogs, and fried chicken. School districts nationwide are now addressing this trend by incorporating some simple and inexpensive options that will make cafeteria lunches healthier while still appealing to students.

This paragraph best supports the statement that
A.   school cafeterias have always emphasized nutritional guidelines over any other considerations.
B.   young people would rather eat in a school cafeteria than a local fast-food restaurant.
C.   school lunch menus are becoming healthier due to major new initiatives on the part of school districts.
D.   it is possible to make school lunches both healthier and appealing without spending a great deal of money and undertaking a radical transformation.

For questions 71-81, based on the following passage, select the best option.

(1) Medical waste has been a growing concern because of recent incidents of public exposure to discarded blood vials, needles (sharps), empty prescription bottles, and syringes. Medical waste can typically include general refuse, human blood and blood products, cultures and stocks of infectious agents, laboratory animal carcasses, contaminated bedding material, and pathological wastes.

(2) Wastes are generally collected by gravity chutes, carts, or pneumatic tubes, each of which has its own advantages and disadvantages. Chutes are limited to vertical transport, and there is some risk of exhausting contaminants into hallways if a door is left open during use. Another disadvantage of gravity chutes is that the waste container may get jammed while dropping, or it may be broken upon hitting the bottom. Carts are primarily for horizontal transport of bagged or containerized wastes. The main risk here is that bags may be broken or torn during transport, potentially exposing the worker to the wastes. Using automated carts can reduce the potential for exposure. Pneumatic tubes offer the best performance for waste transport in a large facility. Advantages include high-speed movement, movement in any direction, and minimal intermediate storage of untreated wastes. However, some objects cannot be conveyed pneumatically.

(3) Off-site disposal of regulated medical wastes remains a viable option for smaller hospitals (those with less than 150 beds). Some preliminary on-site processing, such as compaction or hydropulping, may be necessary prior to sending the waste off site. Compaction reduces the total volume of solid wastes, often reducing transportation and disposal costs, but it does not change the hazardous characteristics of the waste. Compaction may not be economical if transportation and disposal costs are based on weight rather than volume.

(4) Hydropulping involves grinding the waste in the presence of an oxidizing fluid, such as hypochlorite solution. The liquid is separated from the pulp and discharged directly into the sewer

unless local limits require additional pretreatment prior to discharge. The pulp can often be disposed of at a landfill. One advantage is that waste can be rendered innocuous and reduced in size within the same system. Disadvantages are the added operating burden, difficulty of controlling fugitive emissions, and the difficulty of conducting microbiological tests to determine whether all organic matters and infectious organisms have been destroyed from the waste.

(5) On-site disposal is a feasible alternative for hospitals generating two tons or more per day of total solid waste. Common treatment techniques include steam sterilization and incineration. Although other options are available, incineration is currently the preferred method for on-site treatment of hospital waste.

(6) Steam sterilization is limited in the types of medical waste it can treat, but is appropriate for laboratory cultures and/or substances contaminated with infectious organisms. The waste is subjected to steam in a sealed, pressurized chamber. The liquid that may form is drained off to the sewer or sent for processing. The unit is then reopened after a vapor release to the atmosphere, and the solid waste is removed for further processing or disposal. One advantage of steam sterilization is that it has been used for many years in hospitals to sterilize instruments and containers and to treat small quantities of waste. However, since sterilization does not change the appearance of the waste, there could be a problem in gaining acceptance of the waste for landfilling.

(7) A properly designed, maintained, and operated incinerator achieves a relatively high level of organism destruction. Incineration reduces the weight and volume of the waste as much as 95% and is especially appropriate for pathological wastes and sharps. The most common incineration system for medical waste is the controlled-air type. The principal advantage of this type of incinerator is low particulate emissions. Rotary-kiln and grate-type units have been used, but use of grate-type units has been discontinued because of high air emissions. The rotary kiln also puts out high emissions, and the costs have been prohibitive for smaller units.

71. Which of the following organizational schemes is most prevalent in the passage?
A.   chronological order
B.   comparison-contrast
C.   order by topic
D.   hierarchical order

72. One disadvantage of the compaction method of waste disposal is that it
A.   cannot reduce transportation costs.
B.   reduces the volume of solid waste material.
C.   does not allow hospitals to confirm that organic matter has been eliminated.
D.   does not reduce the weight of solid waste material.

73. For hospitals that dispose of waste on their own premises, the optimum treatment method is
A.   incineration.
B.   compaction.
C.   sterilization.
D.   hydropulping.

74.   According to the passage, which of the following could be safely disposed of in a landfill but might not be accepted by landfill facilities?
A.   hydropulped material
B.   sterilized waste
C.   incinerated waste
D.   laboratory cultures

75.   The two processes mentioned in the passage that involve the formation of liquid are
A.   compaction and hydropulping.
B.   incineration and compaction.
C.   hydropulping and sterilization.
D.   sterilization and incineration.

76.   According to the passage, two effective methods for treating waste caused by infectious matter are
A.   steam sterilization and incineration.
B.   hydropulping and steam sterilization.
C.   incineration and compaction.
D.   hydropulping and incineration.

77.   Hospitals can minimize employee contact with dangerous waste by switching from
A.   a manual cart to a gravity chute.
B.   an automated cart to a hydropulping machine.
C.   a gravity chute to a manual cart.
D.   a manual cart to an automated cart.

78.   The process that transforms waste from hazardous to harmless and diminishes waste volume is
A.   sterilization.
B.   hydropulping.
C.   oxidizing.
D.   compacting.

79.   The underlined word exhausting, as it is used in the second paragraph of the passage, most nearly means
A.   debilitating.
B.   disregarding.
C.   detonating.
D.   discharging.

80.   Budgetary constraints have precluded some small hospitals from purchasing
A.   pneumatic tubes.
B.   rotary kilns.
C.   sterilization equipment.
D.   controlled-air kilns.

81.   The underlined phrase fugitive emissions in the fourth paragraph most nearly means
A.   contaminants that are extremely toxic.
B.   contaminants that are illegally discharged.
C.   contaminants that escape the disposal process.
D.   contaminants that come from micro-biological testing.

For questions 82-87, based on the following passage, select the best option.

(1) The atmosphere forms a gaseous, protective envelope around Earth. It protects the planet from the cold of space, from harmful ultraviolet light, and from all but the largest meteors. After traveling over 93 million miles, solar energy strikes the atmosphere and Earth's surface, warming the planet and creating what is known as the biosphere, the region of Earth capable of sustaining life. Solar radiation in combination with the planet's rotation causes the atmosphere to circulate.

Atmospheric circulation is one important reason that life on Earth can exist at higher latitudes because equatorial heat is transported poleward, moderating the climate.

(2) The equatorial region is the warmest part of the earth because it receives the most direct and, therefore, strongest solar radiation. The plane in which the earth revolves around the sun is called the ecliptic. Earth's axis is inclined 23 1 3 degrees with respect to the ecliptic. This inclined axis is responsible for our changing seasons because, as seen from the earth, the sun oscillates back and forth across the equator in an annual cycle. On or about June 21 each year, the sun reaches the Tropic of Cancer, 231 3 degrees north latitude. This is the northernmost point where the sun can be directly overhead. On or about December 21 of each year, the sun reaches the Tropic of Capricorn, 23 1 3 degrees south latitude. This is the southernmost point at which the sun can be directly overhead. The polar regions are the coldest parts of the earth because they receive the least direct and, therefore, the weakest solar radiation. Here solar radiation strikes at a very oblique angle and thus spreads the same amount of energy over a greater area than in the equatorial regions. A static envelope of air surrounding the earth would produce an extremely hot, uninhabitable equatorial region, while the polar regions would remain inhospitably cold.

(3) The transport of water vapor in the atmosphere is an important mechanism by which heat energy is redistributed poleward. When water evaporates into the air and becomes water vapor, it absorbs energy. At the equator, air saturated with water vapor rises high into the atmosphere where winds aloft carry it poleward. As this moist air approaches the polar regions, it cools and sinks back to earth. At some point, the water vapor condenses out of the air as rain or snow, releasing energy in the process. The now-dry polar air flows back toward the equator to repeat the convection cycle. In this way, heat energy absorbed at the equator is deposited at the poles and the temperature gradient between these regions is reduced.

(4) The circulation of the atmosphere and the weather it generates is but one example of the many complex, interdependent events of nature. The web of life depends on the proper functioning of these natural mechanisms for its continued existence. Global warming, the hole in the atmosphere's ozone layer, and increasing air and water pollution pose serious, long-term threats to the biosphere. Given the high degree of nature's interconnectedness, it is quite possible that the most serious threats have yet to be recognized.

82.   Which of the following best expresses the main idea of the passage?
A.   The circulation of atmosphere, threatened by global warming and pollution, protects the biosphere and makes life on Earth possible.
B.   If the protective atmosphere around the earth is too damaged by human activity, all life on Earth will cease.
C.   Life on Earth is the result of complex interdependent events of nature, and some of these events are a result of human intervention.
D.   The circulation of atmosphere is the single most important factor in keeping the biosphere alive, and it is constantly threatened by harmful human activity.
83.   Which of the following best represents the organization of the passage?
A.
I. Definition and description of the circulation of the atmosphere
II. How the atmosphere affects heat and water in the biosphere
III. How the circulation of the atmosphere works
IV. What will happen if human activity destroys the atmosphere and other life-sustaining mechanisms

B.

I. Origin of the atmosphere and ways it protects the biosphere

II. How the circulation of the atmosphere affects the equator and the poles

III. How the circulation of the atmosphere interrelates with other events in nature to protect life on Earth

IV. Threats to life in the biosphere

C.

I. Definition and description of the circulation of the atmosphere

II. Protective functions of the circulation of the atmosphere

III. Relationship of the circulation of the atmosphere to other life-sustaining mechanisms

IV. Threats to nature's interconnectedness in the biosphere

D.

I. The journey of the atmosphere 93 million miles through space.

II. How the atmosphere circulates and protects the biosphere

III. How the atmosphere interrelates with weather in the biosphere

IV. How damage to the biosphere threatens life on Earth

84.   Which of the following is the best definition of the underlined word biosphere as it is used in the passage?

A.   the protective envelope formed by the atmosphere around the living earth

B.   that part of the earth and its atmosphere in which life can exist

C.   the living things on Earth whose existence is made possible by circulation of the atmosphere

D.   the circulation of the atmosphere's contribution to life on Earth

85.   Which of the following sentences from the passage best supports the author's point that circulation of the atmosphere is vital to life on Earth?

A.   The equatorial region is the warmest part of the earth because it receives the most direct and, therefore, strongest solar radiation.

B.   The circulation of the atmosphere and the weather it generates is but one example of the many complex, interdependent events of nature.

C.   [The atmosphere] protects Earth from the cold of space, from harmful ultraviolet light, and from all but the largest meteors.

D.   A static envelope of air surrounding the earth would produce an extremely hot, uninhabitable equatorial region, while the polar regions would remain inhospitably cold.

86.   Based on the passage, which of the following is directly responsible for all temperature changes on Earth?

A.   variations in the strength of solar radiation

B.   variations in the amount of ultraviolet light

C.   variation of biologic processes in the biosphere

D.   variation in global warming

87.   The first paragraph of the passage deals mainly with which of the following effects of the atmosphere on the earth?

A.   its sheltering effect

B.   its reviving effect

C.   its invigorating effect

D.   its cleansing effect

For questions 88-90, based on the following passage, select the best option.

There are as many types of business correspondence as there are kinds of corporate atmospheres. Office environments come in all sizes and can be ordinary and traditional or quirky entrepreneurial offices; some of them actually started in garages. Others can be very formal, multinational behemoths.

88.   What is the meaning of the word atmospheres as it is used in the passage?
A.   commodities
B.   ambiance
C.   elements
D.   resources

89.   What is the meaning of the word quirky as it is used in the passage?
A.   idiosyncratic
B.   engaging
C.   quaint
D.   exceptional

90.   Which of the following words is a synonym for behemoth?
A.   conglomerate
B.   millionaire
C.   scandal
D.   chain

If you finish before time is called, you may check your work on this section only.

This is the end of English MCQs. Next is Essay Section.

Note: Please attempt essay question on Essay Script given separately using pen.

Writing Task

Many people feel that the use of surveillance cameras in public places, such as parking lots, is a good idea that can help ensure our safety. Others worry that too many cameras violate our right to privacy and give law enforcement officials too much power. In your opinion, should we install more surveillance cameras in public places? Why or why not?

Support your position with specific reasons and examples.

THE END