

iQuest Scholarship Cum Admission Test

**FOR CLASS 9<sup>th</sup>  
MOVING TO CLASS 10<sup>th</sup> (EQUIP)  
SAMPLE TEST**

Time: 1.5 hrs

Max Marks : 300

**The Test Consists of Two Sections : (TOTAL 75 QUESTIONS)**

Section	Type	No. of Questions
Section A :	Reasoning	15 Q.
Section B :	Scholastic Aptitude	60 Q.

**INSTRUCTIONS TO CANDIDATE**

- Each subject in this paper consists of multiple choice questions with only one correct answer. **+4 marks** will be awarded for correct answer and **-1 mark** for wrong answer.
- Please read the instructions given for each question carefully and fill the correct answer against the question numbers on the answer sheet in the respective subject.
- Use blue or black ball point pen to darken the appropriate circle & mark should completely fill the circle.
- The Question paper contains blank spaces for your rough work. No additional sheet will be provided for rough work.
- Blank papers, Clipboards, Log Tables, Slide rule, Calculators, Cellular phones, Pagers and Electronic gadgets in any form are not allowed.
- Write your Name, Student ID in the block at the top of the Answer Sheet. Also write your Name & Student ID in the space provided on this cover page of question paper.
- **This is a Sample Test Paper. The actual Paper Pattern may vary in terms of duration and sections. However the syllabus will be same.**

Name: \_\_\_\_\_ Student ID \_\_\_\_\_

**SECTION - A**  
**REASONING**

**Directions : (Q1-2) Read the information given below to answer the questions that follow :**

- (i) There is a group of five girls
- (ii) Kamini is second in height but younger than Rupa.
- (iii) Pooja is taller than Monika but younger in age.
- (iv) Rupa and Monika are of the same age but Rupa is tallest between them.
- (v) Neelam is taller than Pooja and elder to Rupa.

1. If they are arranged in descending order of their ages, who will be in the fourth position?  
(A) Monika or Rupa      (B) Monika  
(C) Kamini                      (D) None of these
2. To answer the question "Who is the youngest person in the group", which of the following statements is superfluous?  
(A) only (i)                      (B) only (v)  
(C) only (ii)                      (D) either (i) or (iv)
3. Find the one that does not belong to the group.  
(A) GT7                              (B) IR9  
(C) CX3                              (D) JP10
4. IF ACID is coded as 21 23 3 24. How will you code 'DEBT' ?  
(A) 24 25 22 14                      (B) 24 23 20 12  
(C) 9 12 8 7                      (D) 24 20 8 12

**Directions : (Q5) In the following question, the symbols @, ©, \$, % and # are used with the meanings as illustrated below :**

- 'A\$B' means 'A is not smaller than B'
- 'A#B' means 'A is not greater than B'
- 'A@B' means 'A is neither smaller than nor equal to B'
- 'A©B' means 'A is neither smaller than nor greater than B'
- 'A%B' Means 'A is neither greater than nor equal to B'

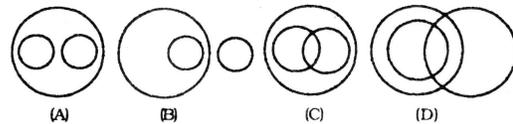
Now in each of the following questions assuming the given statements to be true, find which of the

three conclusions I, II and III given below them is/ are definitely true and give your answer accordingly.

5. Statement : M@J, J\$T, T©N  
Conclusions : I. N#J  
                    II. T%M  
                    III. M@N

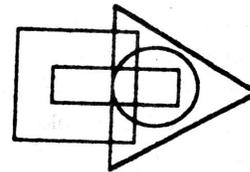
- (A) only I and II are true
- (B) Only II and III are true
- (C) only I and III are true
- (D) all are true

**Directions : (Q6) There are four diagrams representing different relations among the three items. Each circle represents one item and the size of the circle has nothing to do with the item. You are to pick up the figure from the four diagrams that illustrates the relationship among the given items better than any other diagram.**



6. Clown, Entertainers, Fathers  
(A) A                                      (B) B    (C) C    (D) D

**Directions : (Q7-8) The triangle stands for sportsmen. The circle stands for cricketers. The rectangle stands for boys. The square stands for non-urban. Study the diagram carefully and answer each question.**



7. In the above diagram which one of the following statements is true?  
(A) All non urban persons are sportsmen  
(B) There are boys who are sportsmen and do not play cricket

- (C) All urban boys are not sportsmen  
 (D) All urban boys play cricket

8. In the above diagram which one of the following statements is true?

- (A) There are some non urban non boys who are sportsmen but not cricketers.  
 (B) There are some urban boys who are not cricketers but who are sportsmen.  
 (C) There are non - cricketer sportsmen among the non urban boys.  
 (D) There are some urban boys who are not cricketers

9. In the following series, how many such odd numbers are there which are divisible by 3 or 5, then followed by odd numbers and then also followed by even numbers?

12, 19, 21, 3, 25, 18, 35, 20, 22, 21, 45, 46, 47, 48, 9, 50, 52, 54, 55, 56

- (A) Zero (B) Four  
 (C) One (D) Two

**Directions : (Q10-11) Each of the problem below consists of a question and three statements, I, II and III given below it. Read all the statements carefully and seek all possible combinations which could be sufficient for answering the question. A single statement or statements with least combinations which could be sufficient for answering the question would be your answer.**

10. In which year was Tarun born?

- I. Tarun is six years older than Rabin.  
 II. Rabin's brother was born in 1982.  
 III. Tarun's brother is two years younger than Rabin's brother who was eight years younger than him.

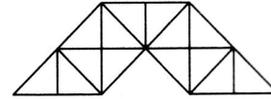
- (A) I and III only (B) II and III only  
 (C) All I, II and III (D) I and II only

11. Who among P, Q, R, S and T is in the middle while standing in a line?

- I. Q is to the right of T.  
 II. S is between P and T.  
 III. Q is between T and R.

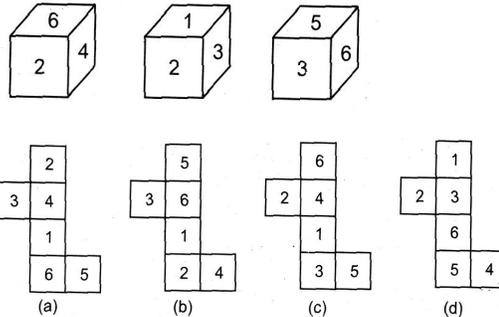
- (A) I and II only (B) II and III only  
 (C) I and III only (D) All I, II, III

12. How many triangles are there in the following figure?



- (A) 25 (B) 20  
 (C) 31 (D) 29

13. The six faces of a cube have been marked with numbers 1, 2, 3, 4, 5 and 6, respectively. The surfaces of the cube have been unfolded and this unfolded position of the cube has been shown in four different figures (A), (B), (C) and (D). Choose the figure that will be formed when the cube is unfolded.



**Directions : (Q14-15) A solid cuboid 8 cm long, 6cm broad and 5 cm high is painted red on two adjacent sides and black on the sides opposite to the red and green at the top and bottom. It is cut into 240 smaller cubes of one cubic cm each. Answer the following questions based on the above statement?**

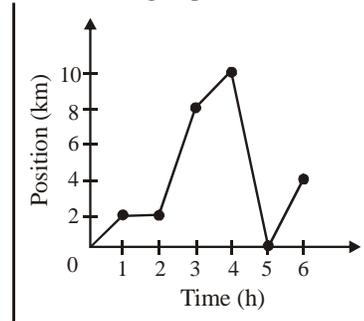
14. How many cubes have at least one side painted?  
 (A) 100 (B) 120  
 (C) 138 (D) 168
15. How many cubes are painted on one or two sides but not on three sides  
 (A) 140 (B) 150  
 (C) 155 (D) 160

**SECTION - B**  
**SCHOLASTIC APTITUDE**

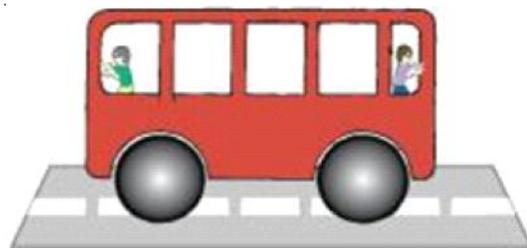
- 16.** If a body is moving at constant speed in a circular path, its–  
 (A) velocity is constant and its acceleration is zero  
 (B) velocity and acceleration are both changing direction only  
 (C) velocity and acceleration are both increasing  
 (D) velocity is constant and acceleration is changing direction
- 17.** If a velocity of 3 meters per second is added to another of 5 meters per second, the sum is –  
 (A) 2 meters per second  
 (B) 4 meters per second  
 (C) anything over 3 meters per second  
 (D) between 2 meters per second and 8 meters per second
- 18.** You are on an ocean liner that is going eastward at 12.0 meters per second, and you run southward at 3.6 meters per second. The magnitude and direction of your resulting velocity.  
 (A) 15.6 m/s, E/W                      (B) 18.4 m/s, W/E  
 (C) 12.5 m/s, S/E                      (D) 13.5 m/s, S/E
- 19.** A frictionless wagon is pushed, from rest, with a force of 60 newtons for 14 seconds. If it then strikes a wall and comes to rest in 0.15 second, how much average force does the wall exert on it ?  
 (A) 6000 N                                  (B) 5600 N  
 (C) 4500 N                                  (D) 4000 N
- 20.** A 35 kg girl on roller skates, standing still, throws a 6 kg medicine ball forward at 3.5 meters per second. How much is her recoil velocity (the backward speed she acquires as a result of the throw)–  
 (A) – 0.6 m/s                              (B) – 1.6 m/s  
 (C) – 2.6 m/s                              (D) – 5.6 m/s

- 21.** Which of the following is the evidence to show that there must be a force acting on earth and directed towards the sun–  
 (A) Deviation of the falling bodies towards east  
 (B) Revolution of the earth round the sun  
 (C) Phenomenon of day and night  
 (D) Apparent motion of sun round the earth

- 22.** The position time graph of a car is shown below.  
 What is the average speed of the car?



- (A) 3.0 km/h                                  (B) 3.6 km/h  
 (C) 4.0 km/h                                  (D) 4.3 km/h
- 23.** Car **I** covers a distance of 70 km in 60 minutes while another car **II** covers a distance of 50 km in 50 minutes. What is the ratio of the speeds of car **I** and **II**?  
 (A) 15:14                                      (B) 7:6  
 (C) 6:7    (D) 14:15
- 24.** Ajay and Vijay are trying to push a bus from the inside, as shown in the given figure. The bus is moving toward right at a uniform speed.

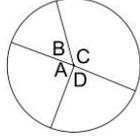


- The application of their force will
- (A) cause the bus to stop  
 (B) reduce the speed of the bus  
 (C) increase the speed of the bus  
 (D) cause no effect on the speed of the bus
25. While taking a catch, a fielder moves his hands backward because this
- (A) increases the time of impact  
 (B) decreases the time of impact  
 (C) makes the catch look spectacular  
 (D) gives him time to hold the ball firmly
26. The mass of a body is measured to be 12 kg on the earth. If it is taken to the moon, its mass will be
- (A) 12kg (B) 6kg  
 (C) 2kg (D) 72kg
27. A body floats with  $\frac{1}{3}$  rd of its volume outside water and  $\frac{3}{4}$  th of its volume outside liquid, then the density of liquid is :
- (A)  $\frac{3}{8}$  g / cm<sup>3</sup> (B)  $\frac{8}{3}$  g / cm<sup>3</sup>  
 (C)  $\frac{9}{4}$  g / cm<sup>3</sup> (D)  $\frac{4}{9}$  g / cm<sup>3</sup>
28. A man lifts a bag of weight 18 kg and puts it on his head 1.3 m above the ground. What is the work done by him on the luggage?
- (A) 107.38 J (B) 135.69 J  
 (C) 201.25 J (D) 229.32 J
29. A source produces 50 crests and 50 troughs in 0.5 seconds . What is the frequency of the wave ?
- (A) 100 Hz (B) 150 Hz  
 (C) 50 Hz (D) 125 Hz
30. A person has the audible range from 20 Hz to  $20 \times 10^3$  Hz. Find the wavelength range corresponding to these frequencies . Take velocity sound as 340 m/s .
- (A)  $15 \times 10^{-3}$  m (B)  $11 \times 10^{-3}$  m  
 (C)  $17 \times 10^{-3}$  m (D)  $15 \times 10^{-8}$  m
31. Which one of the following sets of phenomena would increase on raising the temperature?
- (A) Diffusion, evaporation, compression of gases  
 (B) Evaporation, compression of gases, solubility  
 (C) Evaporation, diffusion, expansion of gases  
 (D) Evaporation, solubility, diffusion, compression of gases
32. Seema visited a Natural Gas Compressing Unit and found that the gas can be liquefied under specific conditions of temperature and pressure. While sharing her experience with friends she got confused. Help her to identify the correct set of conditions
- (A) Low temperature, low pressure  
 (B) High temperature, low pressure  
 (C) Low temperature, high pressure  
 (D) High temperature, high pressure
33. The property to flow is unique to fluids. Which one of the following statements is correct?
- (A) Only gases behave like fluids  
 (B) Gases and solids behave like fluids  
 (C) Gases and liquids behave like fluids  
 (D) Only liquids are fluids
34. Which of the following statements are true for pure substances?
- (i) Pure substances contain only one kind of particles  
 (ii) Pure substances may be compounds or mixtures  
 (iii) Pure substances have the same composition throughout  
 (iv) Pure substances can be exemplified by all elements other than nickel
- (A) (i) and (ii) (B) (i) and (iii)  
 (C) (iii) and (iv) (D) (ii) and (iii)

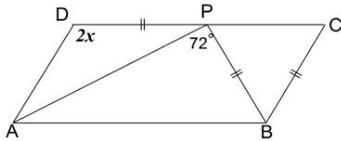
35. Rusting of an article made up of iron is called  
 (A) corrosion and it is a physical as well as chemical change  
 (B) dissolution and it is a physical change  
 (C) corrosion and it is a chemical change  
 (D) dissolution and it is a chemical change
36. A mixture of sulphur and carbon disulphide is  
 (A) heterogeneous and shows Tyndall effect  
 (B) homogeneous and shows Tyndall effect  
 (C) heterogeneous and does not show Tyndall effect  
 (D) homogeneous and does not show Tyndall effect
37. Which of the following statements best explains why a closed balloon filled with helium gas rises in air ?  
 (A) Helium is a monoatomic gas, whereas nearly all the molecules that make up air, such as nitrogen and oxygen, are diatomic  
 (B) The average speed of helium atoms is higher than the average speeds of air molecules and the higher speed of collisions with the balloon walls propels the balloon upward.  
 (C) Because the helium atoms are of lower mass than the average air molecule, the helium gas is less dense than air. The balloon thus weighs less than the air displaced by its volume  
 (D) Because helium has a lower molar mass than the average air molecule, the helium atoms are in faster motion. This means that the temperature of the helium is higher than the air temperature. Hot gases tend to rise.
38. The smell of hydrogen sulphide ( $\text{H}_2\text{S}$ ) gas is  
 (A) pleasant (B) of rotten eggs  
 (C) of burning sulphur (D) None of these
39. Potassium nitrate crystals can be separated from sand using one of the following set of processes. Identify which one ?  
 (A) Filter, dissolve, crystallise  
 (B) Dissolve, crystallise, filter  
 (C) Dissolve, centrifugation, crystallise  
 (D) Dissolve, filter, crystallise
40. All samples of carbon dioxide contain carbon and oxygen in the mass ratio 3 : 8. This is in agreement with the law of  
 (A) conservation of mass  
 (B) constant proportions  
 (C) multiple proportions  
 (D) gaseous volumes
41. The volume of one mole of a gas at standard temperature and pressure is  
 (A) 11.2 litres (B) 22.4 litres  
 (C) 100 litres (D) none of these
42. The empirical formula of a compound of molecular mass 120 is  $\text{CH}_2\text{O}$ . The molecular formula of the compound is  
 (A)  $\text{C}_2\text{H}_4\text{O}_2$  (B)  $\text{C}_4\text{H}_8\text{O}_4$   
 (C)  $\text{C}_3\text{H}_6\text{O}_3$  (D) none of these
43. According to the nuclear model of atom -  
 (A) Electrons and neutrons are present in the centre and protons are present in the outer space.  
 (B) Electrons and protons are present in the centre and neutrons are present in the outer space.  
 (C) Protons and neutrons are present in the centre and electrons are present in the outer space  
 (D) neutrons are present in the centre while protons and electrons are present in the outer space
44. In the helium atom, the number of electrons in the L shell is  
 (A) 0 (B) 2  
 (C) 8 (D) 6
45. Atom X has 27 protons, 29 neutrons, and 27 electrons. Atom Y has 27 protons, 30 neutrons, and 27 electrons. Atoms X and Y are -  
 (A) isobars (B) isomers  
 (C) isotopes (D) isotherms

46. Which of the following can be made into crystal?  
 (A) A Bacterium (B) An Amoeba  
 (C) A Virus (D) A Sperm
47. A cell will swell up if  
 (A) The concentration of water molecules in the cell is higher than the concentration of water molecules in surrounding medium  
 (B) The concentration of water molecules in surrounding medium is higher than water molecules concentration in the cell  
 (C) The concentration of water molecules is same in the cell and in the surrounding medium  
 (D) Concentration of water molecules does not matter
48. Chromosomes are made up of  
 (A) DNA (B) protein  
 (C) DNA and protein (D) RNA
49. Which of the following tissues has dead cells?  
 (A) Parenchyma (B) Sclerenchyma  
 (C) Collenchyma (D) Epithelial tissue
50. Find out incorrect sentence  
 (A) Parenchymatous tissues have intercellular spaces  
 (B) Collenchymatous tissues are irregularly thickened at corners  
 (C) Apical and intercalary meristems are permanent tissues  
 (D) Meristematic tissues, in its early stage, lack vacuoles
51. Girth of stem increases due to  
 (A) apical meristem (B) lateral meristem  
 (C) intercalary meristem (D) vertical meristem
52. According to binomial nomenclature, the scientific name of an organism must consists of two words. These are:-  
 (A) Species and family (B) Genus and species  
 (C) Order and family (D) Genus and family
53. In Whittaker's classification, unicellular organisms are grouped under :-  
 (A) Protista (B) Porifera  
 (C) Fungi (D) Protozoa
54. If the platelet count in the blood reduced and redness in palms and soles are seen the disease is said to be  
 (A) Dengue (B) Chikungunya  
 (C) Bird flu (D) Typhoid
55. Sleeping sickness is caused by a Protozoa Trypanosma. This protozoa is present in the salivary gland of a blood sucking insect. Which of the following?  
 (A) Culex mosquito (B) Anopheles mosquito  
 (C) Fruit fly (D) Tsetse fly
56. Air is :  
 (A) Exhaustible resource  
 (B) Inexhaustible resource  
 (C) Perishable resource  
 (D) Both B and C
57. Percentage of nitrogen present in atmosphere is :  
 (A) 20% (B) 50%  
 (C) 78% (D) 86%
58. Chromosomes are made up of  
 (A) DNA (B) Protein  
 (C) DNA and protein (D) RNA.
59. Which of these is not related to endoplasmic reticulum?  
 (A) It behaves as transport channel for proteins between nucleus and cytoplasm  
 (B) It transports materials between various regions in cytoplasm  
 (C) It can be the site of energy generation  
 (D) It can be the site for some biochemical activities of the cell.
60. Blubber of whale and hump of camel are :  
 (A) Areolar tissue (B) Muscular tissue  
 (C) Tendon (D) Adipose tissue.

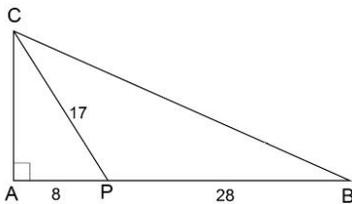
61. A circle is divided into four regions by radii. Angle A is  $\frac{2}{3}$  the angle C while angle D is twice angle B. Angles B and C are supplementary. Angle C is



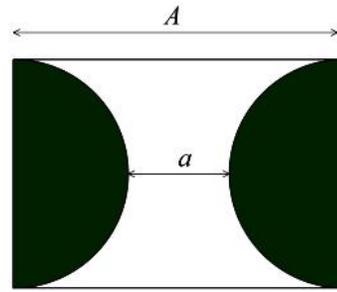
- (A)  $100^\circ$  (B)  $110^\circ$   
 (C)  $120^\circ$  (D)  $135^\circ$
62. ABCD is a parallelogram.  $BP = DP = BC$ . The size of  $x$  is



- (A)  $52^\circ$  (B)  $54^\circ$   
 (C)  $56^\circ$  (D)  $58^\circ$
63. How many zeros are there in the result of  $5675^2 - 4325^2$  ?
- (A) 2 (B) 3  
 (C) 4 (D) 5
64. P is a point on side AB of the right-angled triangle ABC. The distances of P from the vertices of the triangle are as shown. The length of BC is



- (A) 42 (B) 41  
 (C) 40 (D) 39
65. Two semicircles are placed in a rectangle of length A. The shortest distance between the semicircles is a. The total area of the semicircles (shaded) is



- (A)  $f\left(\frac{A+a}{2}\right)^2$  (B)  $f\left(A-\frac{a}{2}\right)^2$   
 (C)  $f(A-a)^2$  (D)  $f\left(\frac{A-a}{2}\right)^2$

66. Which of the following is not the value of  $\left[\left(\frac{5}{6}\right)^{\frac{1}{5}}\right]^{\frac{-1}{6}}$  ?

- (A)  $\left(\frac{5}{6}\right)^{\frac{1}{6} - \frac{1}{5}}$  (B)  $\left(\frac{5}{6}\right)^{-\frac{30}{1}}$   
 (C)  $\left(\frac{6}{5}\right)^{\frac{1}{30}}$  (D)  $\frac{1}{\left[\left(\frac{5}{6}\right)^{\frac{1}{5}}\right]^{\frac{1}{6}}}$

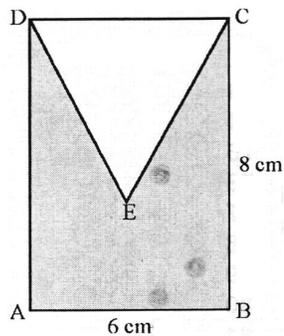
67. Product of  $\left(x - \frac{1}{x}\right)\left(x + \frac{1}{x}\right)\left(x^2 + \frac{1}{x^2}\right)$  is :

- (A)  $x^4 - \frac{1}{x^4}$  (B)  $x^3 + \frac{1}{x^3} - 2$   
 (C)  $x^4 + \frac{1}{x^4}$  (D)  $x^2 + \frac{1}{x^2} + 2$

68. If the coordinates of the two points are P(-2, 3) and Q(-3, 5), then (abscissa of P) - (abscissa of Q) is :

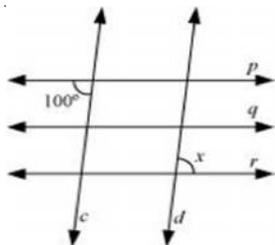
- (A) -5 (B) 1  
 (C) -1 (D) -2

69. In the figure, ABCD is a rectangle and  $\triangle DEC$  is an equilateral triangle. Area of  $\triangle DEC$  is :



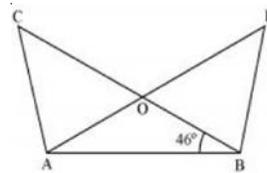
- (A)  $36\sqrt{3}$  cm<sup>2</sup>                      (B) 48 cm<sup>2</sup>  
 (C)  $12\sqrt{3}$  cm<sup>2</sup>                      (D)  $9\sqrt{3}$  cm<sup>2</sup>

70. One of the angles of a triangle is  $75^\circ$ . If the difference of the other two angles is  $35^\circ$ , then the largest angle of the triangle has a measure of :  
 (A)  $80^\circ$                                   (B)  $75^\circ$   
 (C)  $100^\circ$                                 (D)  $135^\circ$
71. In the given figure,  $p \parallel q$  and  $q \parallel r$ . Lines  $p$ ,  $q$ , and  $r$  are cut by two parallel transversals  $c$  and  $d$ . What is the value of  $x$  in the given figure?



- (A)  $40^\circ$                                       (B)  $80^\circ$   
 (C)  $100^\circ$                                   (D)  $120^\circ$

72. In which of the following figures, is one diagonal the perpendicular bisector of the other diagonal?  
 (A) Parallelogram                      (B) Rectangle  
 (C) Rhombus                              (D) None
73. The given figure shows  $\triangle ABC$  and  $\triangle ABD$  that have the same area. It is also given that  $OC = OD$  and  $\angle OBA = 46^\circ$ .



What is the measure of  $\angle DAB$  ?

- (A)  $58^\circ$                                       (B)  $46^\circ$   
 (C)  $44^\circ$                                       (D)  $38^\circ$
74. If a trapezium is cyclic then –  
 (A) Its parallel sides are equal  
 (B) Its non-parallel sides are equal  
 (C) Its diagonals are not equal  
 (D) None of the above
75. If a cuboid of dimensions  $10 \text{ cm} \times 15 \text{ cm} \times 5 \text{ cm}$  is cut to form cubes of sides  $5 \text{ cm}$ , then what is the difference between the sum of the surface areas of these cubes and the surface area of the original cuboid?  
 (A)  $550 \text{ cm}^2$                               (B)  $400 \text{ cm}^2$   
 (C)  $350 \text{ cm}^2$                               (D)  $900 \text{ cm}^2$

# ANSWER KEY

## SECTION - A

### REASONING

- |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.  | (D) | 2.  | (A) | 3.  | (D) | 4.  | (A) | 5.  | (D) | 6.  | (D) |
| 7.  | (D) | 8.  | (A) | 9.  | (D) | 10. | (C) | 11. | (B) | 12. | (D) |
| 13. | (C) | 14. | (D) | 15. | (D) |     |     |     |     |     |     |

## SECTION - C

### SCHOLASTIC APTITUDE

- |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 16. | (B) | 17. | (D) | 18. | (C) | 19. | (B) | 20. | (A) | 21. | (B) |
| 22. | (C) | 23. | (B) | 24. | (D) | 25. | (A) | 26. | (A) | 27. | (B) |
| 28. | (D) | 29. | (A) | 30. | (C) | 31. | (C) | 32. | (C) | 33. | (C) |
| 34. | (B) | 35. | (C) | 36. | (D) | 37. | (C) | 38. | (B) | 39. | (D) |
| 40. | (B) | 41. | (B) | 42. | (B) | 43. | (C) | 44. | (A) | 45. | (C) |
| 46. | (C) | 47. | (B) | 48. | (C) | 49. | (B) | 50. | (C) | 51. | (B) |
| 52. | (B) | 53. | (A) | 54. | (A) | 55. | (D) | 56. | (B) | 57. | (C) |
| 58. | (C) | 59. | (C) | 60. | (D) | 61. | (D) | 62. | (B) | 63. | (D) |
| 64. | (D) | 65. | (D) | 66. | (C) | 67. | (A) | 68. | (B) | 69. | (D) |
| 70. | (B) | 71. | (A) | 72. | (C) | 73. | (B) | 74. | (B) | 75. | (C) |