



ISMART SAMPLE PAPER
FOR CLASS 8th
MOVING TO CLASS 9th (EXPLORE)

Test ID : 00000000

Time : 90 min.

M. Marks: 240

The Test Consists (TOTAL 60 QUESTIONS)		
SUBJECTS	Qs.	SYLLABUS
Section A : Reasoning		
REASONING	10	General Reasoning
Section B : Scholastic Aptitude		
PHYSICS	12	Sound, Force, Pressure, Light
CHEMISTRY	11	Coal And Petroleum, Combustion of Flame, Classification of Matter
BIOLOGY	12	Crop Production and Management, Micro Organisms, Reproduction in Plants and Animals
MATHEMATICS	15	Number System, Polynomials, Ratio and Proportion, Square and Cube Roots, Identities, Exponents

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 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.

Name: _____ Student ID _____

REASONING

1. A rich merchant had collected many gold coins. He did not want anybody to know about them. One day, his wife asked, "How many gold coins do we have?"
After pausing a moment, he replied, "Well! If I divide the coins into two unequal numbers, then 45 times the difference between the two numbers equals the difference between the squares of the two numbers."
The wife looked puzzled. Can you help the merchant's wife by finding out how many gold coins they have?
(A) 45 (B) 25
(C) 55 (D) 85
 2. Robert:
"When I add 2 times my age 2 years from now to 3 times my age 3 years from now, I get 6 times my current age. How old will I be 4 years from now?"
(A) 14 (B) 16
(C) 17 (D) 20
 3. When the words COAT, CARD, BAKE, and TREE are written one below the other, the word that is formed diagonally from left to right is –
(A) cars (B) care
(C) cart (D) cake
 4. There is a pole in a lake. One-half of the pole is in the ground, another one-third of it is covered by water, and 9 ft is out of the water. What is the total length of the pole in ft?
(A) 54 (B) 27
(C) 35 (D) 42
 5. Find the logically consistent pair of sentences on the basis of the given information.
Porridge is not sweet when served without love
A. Porridge is sweet
B. Porridge is not sweet
C. Porridge is served with love
D. Porridge is served without love
(A) BC (B) DA
(C) DB (D) BD
 6. In a code language, if BEAT is coded as 5642 and SWEET is coded as 66912, how would you code TEASE?
(A) 96162 (B) 56264
(C) 96625 (D) 55296
 7. In a class, the names of boys are arranged alphabetically. Gaurav and Saurabh have 14 boys between them. If Gaurav is 37th from the bottom, Saurabh would be at what position from the top?
(A) 25th (B) 28th
(C) 27th (D) Can't be determined
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8. **Directions :** Following questions are based on the information given below:

1. 'P×Q' means 'P is the father of Q'
2. 'P–Q' means 'P is the sister of Q'
3. 'P+Q' means 'P is the mother of Q'
4. 'P÷Q' means 'P is the brother of Q'

Which of the following represents 'J is the son of F'?

- (A) $J \div R - T \times F$ (B) $J + R - T \times F$
 (C) $J \div M - N \times F$ (D) None of these

9. **Directions :** The question below consist of a question followed by two statements labelled as I and II. You have to decide if these statements are sufficient to conclusively answer the question. Give your answer as:

- (A) If statement I alone is sufficient to answer the question;
 (B) If statement II alone is sufficient to answer the question;
 (C) If statement I and II together are needed to answer the question;
 (D) If statement I or II alone are sufficient to answer the question;

Who is older – Ritu or Situ?

- I. Situ was born in the year 1980 and is 5 years younger than Ritu's brother.
 II. Ritu is twice as older as her brother.

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

10. **Directions :** Each of the following questions has a matrix with a question mark in one block. Replace the question mark by choosing the correct response from amongst the alternatives given.

6	8	?
9	3	13
10	14	1

- (A) 11 (B) 9
 (C) 7 (D) 5

Physics

11. Which of the following is necessary for the production of sound?
 (A) Light (B) Heat
 (C) Vibration (D) Reflection
12. Sound cannot travel through:
 (A) Solid (B) Liquid
 (C) Gas (D) Vacuum
13. The net force acting on a body of mass 1 kg moving with a uniform velocity of 5 ms^{-1} is :
 (A) 5 N (B) 0.2 N
 (C) 0 N (D) None of these
14. A driver accelerates his car first at the rate of 1.8 m/s^2 and then at the rate of 1.2 m/s^2 . The ratio of the forces exerted by the engines will be respectively equal to
 (A) 2 : 3 (B) 1 : 2
 (C) 2 : 1 (D) 3 : 2
15. Frictional force exists in which of the following cases _____

- (A) exists only for moving bodies (B) exists only for bodies which are at rest
(C) exists for both moving and non-moving bodies (D) none of these
16. Which of the following class of forces is different from others?
(A) pulling of a cart (B) stretching of a coiled spring
(C) kicking of a football (D) electrical force
17. With the depth of a liquid, exerted pressure.....
(A) decreases (B) ceases
(C) increases (D) no change
18. Which among the following will exert maximum pressure when pushed with the same amount of force?
(A) An eraser of area 2 cm^2 (B) A sharpened pencil tip
(C) The blunt end of a pencil (D) The rear portion of a closed safety pin
19. The unit of frequency is:
(A) Hertz (Hz) (B) Newton (N)
(C) Pascal (Pa) (D) Decibel (dB)
20. A real image:
(A) Cannot be formed on a screen (B) Can be seen only in the dark
(C) Can be formed on a screen (D) Is always erect

21. The splitting of white light into seven colours is called:
(A) Dispersion (B) Reflection
(C) Refraction (D) Scattering
22. At sea-level, atmospheric pressure is
(A) 76 cm of Hg column (B) 0.76 cm of Hg column
(C) 76 m of Hg column (D) 76 cm of water column

Chemistry

23. Which one will be most suitable method to separate a mixture of sodium chloride and ammonium chloride?
(A) Fraction distillation (B) Sublimation
(C) Sedimentation (D) Chromatography
24. Separation of a mixture of the solids by fractional crystallisation depends on the difference in their
(A) Densities (B) Solubilities
(C) Shape of crystals (D) Size of crystals
25. Rusting of iron is a example of
(A) Reduction (B) Oxidation
(C) Ionization (D) dissociation
26. The melting and boiling points of three substances are shown below.
What will be the state of the substances at 98°C ?

Substance	Boiling point	Melting point
A	105°C	100°C
B	89°C	72°C
C	100°C	97°C

- A** **B** **C**
 (A) Gas Liquid Solid
 (B) Liquid Solid Gas
 (C) Solid Gas Solid
 (D) Solid Gas Liquid
27. Hydrocarbons contain :
 (A) Carbon and hydrogen (B) Carbon and oxygen
 (C) Carbon and nitrogen (D) Carbon and carbon dioxide
28. Which of the following is known as 'Fire damp' in coal mines?
 (A) Ethanol (B) Carbon monoxide
 (C) Carbon dioxide (D) Methane
29. Which of the following gases is supplied in LPG (Liquefied Petroleum Gas) cylinders for domestic use?
 (A) Methane and Propane (B) Methane and Ethane
 (C) Ethane and Butane (D) Propane and Butane
30. Biogas mainly contains :
 (A) Producer gas (B) Coal gas
 (C) Water gas (D) Methane
31. Which of the following is not the attribute of a good fuel?
 (A) Low calorific value (B) Moderate rate of combustion

- (C) Fairly cheap and easily available (D) Safe to handle, store, and transport
32. Fill in the blanks by choosing the correct option. When a hydrocarbon fuel is burnt in a sufficient supply of air, ____ and ____ are produced.
 (A) CO, CO₂ (B) CO₂, H₂O vapours
 (C) CO, H₂O vapours (D) H₂O liquid, H₂O vapours
33. Sleeping in a closed room with burning angeethi can prove to be fatal, because
 (A) Coal is a poisonous substance (B) A poisonous gas, carbon monoxide, is produced due to the incomplete combustion of coal
 (C) Burning of coal in a closed room evolves carbon dioxide and water vapour, which are harmful (D) None of the above.

Biology

34. Rhizobium bacteria
 (A) Help in digestion (B) Help in nitrogen fixation
 (C) Cause diseases (D) All of the above
35. Microorganisms are found in
 (A) Air (B) Water
 (C) Soil (D) All of these

36. Bacteria are
 (A) Unicellular (B) Multicellular
 (C) Tissue (D) None of these
37. The study of Microorganisms is called :
 (A) Bryology (B) Mycology
 (C) Microbiology (D) Phycology
38. Which of the following structure is present in bacteria?
 (A) Mesosomes (B) Golgi bodies
 (C) Mitochondria (D) Chloroplast
39. Plough is a simple tool used for
 (A) Weeding (B) Ploughing
 (C) Seed sowing (D) Both (A) and (B)
40. Sexual maturity is reached at
 (A) Pituitary (B) Puberty
 (C) Menopause (D) All
41. Initially, girls grow than boys
 (A) Slower (B) Faster
 (C) Smaller (D) All
42. Metamorphosis in amphibians is brought about by hormone
 (A) Growth hormone (B) Thyroxine
 (C) Cortisone (D) All
43. The legal age for the marriage of boys in our country is :
 (A) 16 years (B) 18 years
 (C) 21 years (D) 24 years
44. When a sperm containing Y chromosome fertilizes an egg with X chromosome, the zygote develops into a _____ child.
 (A) Female (B) Either a male or

- (C) Male (D) No child
45. Which of the following structure helps in respiration in bacteria?
 (A) mitochondria (B) ribosome
 (C) mesosomes (D) none of these

Mathematics

46. The value of $(0.\bar{6} + 0.\bar{7} + 0.\bar{8})$ is
 (A) $\frac{21}{10}$ (B) $\frac{19}{9}$
 (C) $\frac{7}{3}$ (D) None of these
47. HCF of $\frac{4}{9}, \frac{2}{5}, \frac{6}{8}, \frac{8}{5}$ is
 (A) $\frac{1}{142}$ (B) $\frac{2}{350}$
 (C) $\frac{1}{180}$ (D) $\frac{2}{480}$
48. $0.\overline{127}$ is equal to
 (A) $\frac{7}{55}$ (B) $\frac{7}{11}$
 (C) $\frac{2}{55}$ (D) None of these
49. The value of $\frac{(67.542)^2 - (32.458)^2}{67.542 - 32.458}$ is
 (A) 1 (B) 10
 (C) 100 (D) None of these

50. The rational form of $2.\overline{7435}$ is
 (A) $\frac{27161}{9999}$ (B) $\frac{27}{99}$
 (C) $\frac{27161}{9900}$ (D) $\frac{27161}{9000}$
51. Factorise : $x^2 + (a + b + c)x + ab + bc$
 (A) $(x + a)(x + b + c)$ (B) $(x + b)(x + a + c)$
 (C) $(x + c)(x + a + b)$ (D) None of these
52. The rational expression $\frac{x^3 - 3x^2 + 2x}{x^2y - 2xy}$ in lowest terms is _____.
 (A) $\frac{x-2}{y}$ (B) $\frac{x+1}{xy}$
 (C) $\frac{x-1}{y}$ (D) $\frac{x+1}{y}$
53. If $a - \frac{1}{a} = 2$, then $a^2 + \frac{1}{a^2}$ will be equal to :
 (A) 6 (B) 0
 (C) 4 (D) None of these
54. The value of $16.1^2 - 8.9^2$ is
 (A) 160 (B) 180
 (C) 170 (D) None of these
55. Factorise : $(5x - 3)^2 - (5x - 3) - 20$
 (A) $(5x + 8)(5x - 1)$ (B) $(5x - 8)(5x + 1)$
 (C) $(5x - 8)(5x - 1)$ (D) $(5x + 8)(5x + 1)$
56. The LCM of the polynomials $8(x^2 - 2x)(x - 6)^2$ and $2x(x^2 - 4)(x - 6)^2$ is _____.
 (A) $8(x^2 - 4)(x^2 - 6x)^2$ (B) $x^3 - 4x)(x - 6)^2$
 (C) $8(x^3 - 4x)(x - 6)^2$ (D) $8x(x^2 + 4)(x - 6)^2$
57. The value of x which satisfies the equation $\frac{5}{x+6} = \frac{2}{3-2x}$ is
 (A) $1/2$ (B) $1/4$
 (C) $1/6$ (D) $1/8$
58. The sum of five consecutive odd natural numbers is 65. Find the sum of the extreme numbers.
 (A) 26 (B) 30
 (C) 24 (D) 32
59. If $P = a^3 - 4b^3 + 3a^2b$,
 $Q = -4a^3 + 13a^2b + 7b^3$,
 $R = -4a^2b + 8b^3 + 3a^3$ and
 $S = 12a^2b - 5b^3 + 9a^3$ and $P - Q + R - S$ is equal to -
 (A) $-a^3 + 3b^3 - 26a^2b$ (B) $a^3 - 2b^3 + 26a^2b$
 (C) $a^3 + 2b^3 - 26a^2b$ (D) $-a^3 + 2b^3 - 26a^2b$
60. If $A : B = 2 : 3$ and $B : C = 4 : 5$, then $C : A$ is equal to :
 (A) $15 : 8$ (B) $12 : 10$
 (C) $8 : 5$ (D) $8 : 15$
-

Answer Key

1. A
2. C
3. D
4. A
5. C
6. C
7. D
8. D
9. C
10. A
11. C
12. D
13. C
14. D
15. C
16. D
17. C
18. B
19. A
20. C
21. A
22. A
23. B
24. B
25. B
26. D
27. A
28. D
29. D
30. D
31. B
32. B
33. B
34. B

35. D
36. A
37. C
38. A
39. B
40. B
41. B
42. B
43. C
44. C
45. C
46. C
47. C
48. A
49. C
50. C
51. B
52. C
53. A
54. B
55. B
56. C, 57. B, 58. A, 59. D, 60. A