School Integrated Program

Class – IX

SAMPLE PAPER

INSTRUCTIONS

[Time: 3 Hours]   [Max Marks: 450]

A. *General:*

1. *This booklet is your Question Paper containing 150 questions.*
2. *Blank Papers, Clipboards, Log Tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed to be carried inside the examination hall.*
3. *The answer sheet, a machine-readable optical mark recognition sheet (OMR Sheet), is provided separately.*
4. *DO NOT TAMPER WITH / MULTIPLE THE OMR OR THE BOOKLET.*
5. *Please fill your roll number correctly in the OMR sheet (answer sheet).*
6. *Both Question Paper and OMR Answer Sheet will be submitted after completion of this examination.*

B. *Question Paper Format:*

1. *The Question Paper consists of five parts (Part I: MAT, Part II: Physics, Part III: Chemistry, Part IV: Biology, Part V: Mathematics).*
2. *Each Question carries +3 marks for correct answer and -1 mark for incorrect answer.*

Note

A. *Instructions mentioned on this page are of actual test. It has no reference with the questions / pattern of this paper.*
B. *This paper is provided just to share the pattern, format and level of questions that could be a part of actual test.*

MAT

Choose the correct answer

1. If cook is called butler, butler is called manager, manager is called teacher, teacher is called clerk and clerk is called principal, who will teach in a class?
   (A) Clerk   (B) Butler   (C) Manager   (D) Teacher

2. Introducing a man, a woman said, 'He is the only son of my mother's mother.' How is the woman related to the man?
   (A) Mother   (B) Aunt   (C) Sister   (D) Niece

3. Nisha was born on 30 January. Reshma is older than Nisha by 21 days. During that year, the Republic day was celebrated on Wednesday. On which day was Reshma born?
   (A) Sunday   (B) Monday   (C) Tuesday   (D) Friday

**Choose the correct alternative which should be filled in the blank from 17-22**

4. 01 : 08 = _____ : 64
   (A) 09   (B) 16   (C) 36   (D) 49

5. If in a certain language P R O S E is coded as P P O Q E, how is ' L I G H T' coded in that code?
   (A) LIGHT   (B) LLGFE   (C) JIEHR   (D) LGGFT

6.

62	35	27
47	29	?
50	38	12

   (A) 27   (B) 13   (C) 20   (D) 18

7. Z, X, V, T, R, (?), (?)
   (A) O, K   (B) N, M   (C) K, S   (D) P, N

8. $\underline{?}\ \underline{?}$ ab a $\underline{?}\ \underline{?}$ ba $\underline{?}$ aɔ

   (A) abbba   (B) abbab   (C) baabb   (D) bbaba

PHYSICS

9. A particle is thrown vertically upwards with a velocity v. It returns to the ground in time T. Which of the following graphs correctly represents the motion?
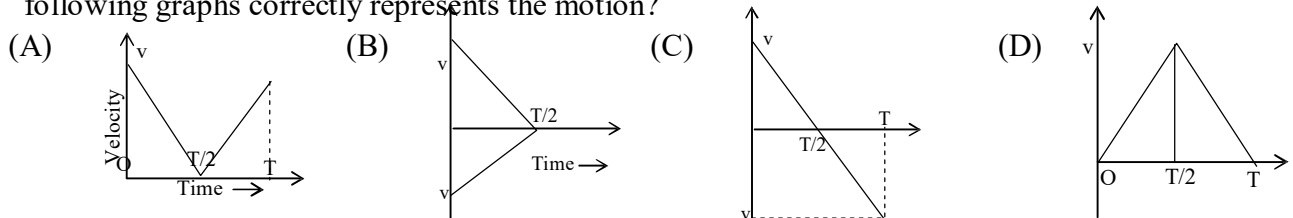
10. If there is no friction between the block(m) and wedge (M) the minimum force required to keep the block stationary with respect to the wedge:
    (A) Mg
    (B) $m\ M\ g\sin T$
    (C) $m\ M\ g\cos T$
    (D) $m\ M\ g\tan T$
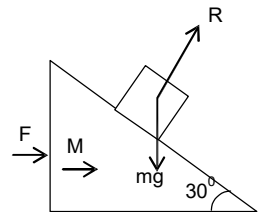
11. Two bodies A and B of mass 100g and 200g respectively are dropped neat the earth's surface. Let the acceleration of A and B be a_1 and a_2 respectively.

    (A) a_1 a_2 (B) a_1 a_2 (C) a_1 ! a_2 (D) a_1 z a_2

12. The orbital velocity of satellite very near to the surface of earth is v. What will be its orbital velocity at an altitude 7 times the radius of the earth?

    (A) $v / \sqrt{2}$ (B) $v / 2$ (C) $v / 2\sqrt{2}$ (D) $v / 4$

13. The two planets have radii r_1 and r_2 and their densities U_1 and U_2 respectively. The ratio of acceleration due to gravity on them will be

    (A) $r_1 U_1 : r_2 U_2$ (B) $r_1 U_1^2 : r_2 U_2^2$ (C) $r_1^2 U_1$ $r_2^2 U_2$ (D) $r_1 U_2 : r_2 U_1$

14. A person is sitting in a moving train facing the direction in which train is running. Inside the compartment he throws a ball vertically upwards. The ball falls behind him. He concludes that the train is moving forward with a:
    (A) finite acceleration
    (B) finite retardation
    (C) uniform speed
    (D) the train is moving on a curved track with uniform speed

15. A stone is dropped from the top of a tower and travels 24.5 m in last second of its journey. The height of the tower is

    (A) 44.1 m   (B) 49 m   (C) 78.4 m   (D) 72 m.

16. A cyclist moving on a circular track of radius 40m completes half a revolution in 40 sec. Its average velocity is nearly

    (A) zero   (B) 4S m/s   (C) 2 m/s   (D) 8S m/s

CHEMISTRY

17. The mass of one Avogadro's number of N atoms is equal to

    (A) 14 amu   (B) 14 g   (C) 28 g   (D) 14 mg

18. Which of the following will show "Tyndall effect"?
    (A) Salt solution   (B) Milk
    (C) Copper sulphate solution   (D) Starch solution

19. Which one of the following is an example of a heterogeneous mixture?
    (A) Alum and water   (B) Lime and water
    (C) Sodium chloride and water   (D) Sand and sugar

20. A compound is formed by the combination of atom of at least of at least _____ elements.
    (A) Three   (B) Four   (C) Two   (D) Five

21. Which of the following is a compound?
    (A) The black solid residue left when sugar is charred.
    (B) N_2 gas
    (C) Air
    (D) CO_2

22. Mixture of NaCl and NH_4Cl can be separated by:
    (A) Filteration   (B) Sublimation   (C) Cooling   (D) Boiling

23. A catalyst when added to a chemical reaction changes the:
    (A) Colour of the reactants   (B) Course of reaction
    (C) Speed of the reaction   (D) Physical state of products
24. When a burning splinter is brought near the gas jar containing hydrogen gas a poping sound is observed. It is due to
    (A) exothermic   (B) endothermic
    (C) exothermic & endothermic   (D) None of these

BIOLOGY

25. Match Column S with Colulmn T and select the correct answer using the codes given below the column.

Column – S	Column – T
G. Nucleus	P. Tiny structures inside the cell
H. Organelles	Q. Green pigment present
I. Chloroplast	R. Boss of the cell
J. Mitochondria	S. Energy bank

	P	Q	R	S
A	G	H	I	J
B	I	J	H	G
C	I	J	G	H
D	H	I	G	J

26. The primary reason for cell division to take place is
    (A) To increase the number of cells.
    (B) To produce spores.
    (C) To have a larger surface area to volume ratio.
    (D) To bring recombinations in cells.
27. The best stage to count the number of chromosomes in a cell during cell division is
    (A) Prophase   (B) Metaphase   (C) Anaphase   (D) Telophase
28. Bases of nodes and internodes have
    (A) Lateral meristem (B) Apical meristem   (C) Intercalary meristem   (D) Differentiated cells
29. Blood is a/an
    (A) Epithelial tissue   (B) Connective tissue (C) Nervous tissue   (D) All
30. Which of the following structure is not found in a prokaryotic cell?
    (A) Plasma membrane (B) Nuclear envelope (C) Ribosome   (D) Cell wall
31. Which of the following cellular organelle extracts energy from carbohydrates and forms ATP molecules?
    (A) Lysosome   (B) Chloroplast   (C) Mitochondrion   (D) Chromoplast
32. Mitochondria are found
    (A) in all cells   (B) only in plant cells
    (C) only in animal cells   (D) in all eukaryotic cells

MATHEMATICS

33. If $x = \dfrac{1}{2-\sqrt{3}}$, the value of x^2-4x-4 is

    (A) 1   (B) 2   (C) 3   (D) 4

34. If $x^4 + \dfrac{1}{x^4} = 119$, then the value of $x^3 - \dfrac{1}{x^3}$ is

    (A) 36   (B) 27   (C) 18   (D) 9

35. The polynomials $ax^3 + 3x^2 - 13$ and $2x^3 - 5x + a$ are divided by x + 2. If remainder in each case is the same, then value of a is

    (A) 5/9   (B) 4/9   (C) 9/5   (D) 9/4

36. Œ sides of a trapezium are 60cm & 77cm, other sides are 25cm & 26cm. Find its area.

    (A) 1644 cm^2 (B) 1466 cm^2 (C) 1066 cm^2 (D) 1044 cm^2

37. Simplify $\dfrac{x \cdot x^2 \cdot x^3 \cdot x^4 \cdot x^5 \cdot x^6 \cdot x^7}{x^{-3} \cdot x^{-4} \cdot x^{-5} \cdot x^{-6} \cdot x^{-7} \cdot x^{-8} \cdot x^{-9}}$

    (A) x^5 (B) x^{10} (C) x^{-5} (D) x^{-10}

38. The area of an equilateral triangle whose side is 9 cm is

    (A) $\dfrac{81\sqrt{3}}{4}\, cm^2$ (B) $27\sqrt{3}\, cm^2$ (C) $\dfrac{81}{4}\, cm^2$ (D) none of these

39. Which of the following is equal to $\sqrt{2}\, u\sqrt{3-\sqrt{2}-\sqrt{3}-\sqrt{6}}-1-\sqrt{2}-\sqrt{3}$

    (A) $\sqrt{2}$ (B) $\sqrt{3}$ (C) $\sqrt{6}$ (D) 0

40. Given that $1^2 - 2^2 - 3^2 - ... - 10^2 - 385$, find the value of $2^2 - 4^2 - 6^2 - ... - 20^2$?

    (A) 1,740   (B) 1,540   (C) 770   (D) 1,200