

LESSON BASED ASSESSMENT [LBA] BASED SA-01 EXAM

GOVT HIGH SCHOOL _____ TQ: _____ DIST: _____

SA-01 MODEL QUESTION PAPER 2025

Subject : Mathematics

Class : 9th

Time : 3:15

M.Marks : 80

I. Four alternatives are given for each of the following questions/incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. (Each question carries One-mark)

8 x 1 = 8

1. A number 1.101001000..... is an example for

- A) Natural number B) Whole number C) Rational number D) Irrational number

2. Every rational number is a

- A) Natural number B) Real number C) Whole number D) Irrational number

3. A polynomial of degree 1 is called

- A) Linear polynomial B) Quadratic polynomial
C) Monomial D) Binomial

4. A polynomial with degree 2 is called

- A) Linear polynomial B) Quadratic polynomial
C) Monomial D) Binomial

5. The coordinates of the origin is

- A) (0, 1) B) (1, 0) C) (0, 0) D) (1, 1)

6. A point both of whose coordinates are negative will lie in

- A) I quadrant B) II quadrant C) III quadrant D) IV quadrant

7. Standard form of linear equation in two variables x and y is

- A) $ax + by = 0$ B) $ax + by + c = 0$ C) $ax - by - c = 0$ D) $ax + by = 0$

8. The number of solutions for the linear equation in two variables is

- A) 1 B) 4 C) 2 D) Infinite

II. Answer the following questions: (One-mark questions)**8 x 1 = 8**

9. Define rational number.
10. Define irrational number.
11. Define Binomial. Give an example.
12. Define linear polynomial. Give an example.
13. Write the coordinates of a point lying on the x-axis at a distance of 4 units to the left of the origin.
14. What are the coordinates of a point which lies on both x -axis and y- axis?
15. Find a solution for the equation $x + y = 5$.
16. The graph of a linear equation passes through the origin. Write its equation.

III. Answer the following questions: (Two-marks questions)**8 x 2 = 16**

17. Add: $2\sqrt{2} + 5\sqrt{3}$ and $\sqrt{2} - \sqrt{3}$
18. Multiply: $6\sqrt{5}$ by $2\sqrt{5}$
19. Give one example each of a binomial of degree 35, and of a monomial of degree 100.
20. Examine whether $x + 2$ is a factor of $x^3 + 3x^2 + 5x + 6$.
21. Name the following with respect to graph: a) Horizontal line b) Vertical line c) The point of intersection of two axes d) Each part of the plane divided by two axes
22. Write the quadrant or the axis on which do each of the points lie: $(-3, 5)$, $(2, -2)$, $(-3, 0)$, $(-4, -6)$.
23. Express $2x - 8 = 6y$ in standard form and write the values of a, b and c.
24. Find the value of k, if $x = 3$ and $y = 2$ is a solution of the equation $3x + 4y = k$.

IV. Answer the following questions: (Three-marks questions)**9 x 3 = 27**

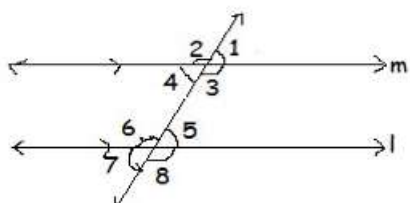
25. Find 4 rational numbers between 1 and 2.
26. Express $0.333333\ldots$ in the form of p/q .
27. Classify the following as linear, quadratic and cubic polynomials:

(i) $x^2 + x$ (ii) $x^3 - x$ (iii) $y + y^2 + 4$ (iv) $1 + x$ (v) $3t$ (vi) t^2 (vii) $7x^3$

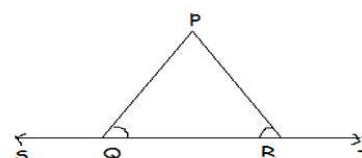
28. If $x + y + z = 0$ then prove that $x^3 + y^3 + z^3 = 3xyz$.
29. Plot the following points on the graph: $P(0, 2)$, $Q(2, 4)$, $R(-2, 0)$, $S(3, 5)$.
30. Verify which of the following are solutions of the equation $x + 2y = 6$:

a) $(1, 2)$ b) $(2, 2)$ c) $(0, 3)$

31. Differentiate between axioms and postulates.
32. In the figure, $\angle 2 = 130^\circ$ and $\angle 5 = 50^\circ$, find whether $m \parallel n$ and give reason for your answer.



33. In the figure, $\angle PQR = \angle PRQ$ then, Prove that $\angle PQS = \angle PRT$



V. Answer the following questions: (Four-marks questions)

4 x 4 = 16

34. State whether the following statements are 'true' or 'false'. Give reasons for your answers:

- (i) Every natural number is a whole number.
- (ii) Every integer is a whole number.
- (iii) Every irrational number is a natural number.
- (iv) The square roots of all positive integers are irrational number.

35. Factorise: $x^3 - 23x^2 + 142x - 120$.

36. The coordinates of the three vertices of a square KLMN are K(-4, 2), L(3, 2), M(3, -5). Plot the points K, L, M on a graph. Complete the square and write the coordinates of N.

37. Write any four solutions for the linear equation $3x + y - 12 = 0$.

VI. Answer the following questions: (Five-marks questions)

1 x 5 = 5

38. In the figure PQ and RS are two mirrors placed parallel to each other and incident ray AB strikes the mirror PQ at B, the reflected ray moves along the path AB and strikes the mirror RS at C and again reflects back along CD. Prove that $AB \parallel CD$.

