LORVEN PUBLIC SCHOOL

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Annual Exam – 2020

Class: IX

MATHEMATICS

Time: 3 hrs **Total Marks: 90**

I. Choose the correct answer **9x1=9**

1. Which of the following are whole numbers?

   a) 1, 2, 3 … b) -2, -1, 0, 1, 2 … c) 0, 1, 2, 3 …

2. Every natural number is a whole number

   a) True b) False c) None of these

3. Decimal expansion of 7/8 is

   a) 0.785 b) 0.875 c) 0.587

4. The value of 2^2 is

   a) 4 b) 2 c) none of these

5. A polynomial of degree one is called

   a) monomial b) binomial c) trinomial

6. How many diagonals a quadrilateral has?

   a) one b) two c) three

7. $11^{1/2}/11^{1/4}$ value is

   a) 11 b)$11^{1/4}$ c)$11^{1/8}$

8. The Sum of three angles of a triangle is ___ degrees.

   a) 360 b) 90 c) 180

9. Maximum probability event is equal to

   a) 1 b) 0 c) 0.01

II. Solve the following **9x2=18**

1. Construct an angle of 120°
2. What is the degree of the polynomial $4x^2 + 3y^4$?
3. State 10/3 is terminating or non-termination decimal.
4. What is the degree of the polynomial $8x^3 - y^4 - 4z + 6a^5$?
5. Find mode of the data: 2, 3, 4, 5, 0, 1, 3, 3, 4, 3
6. Find the value of the polynomial $5x - 4x^2 + 3$ at $x = 0$.
7. Give definition of Ray and line segment with examples.

OR

Write formula of surface area of a cube?

8. Define the SAS postulate

9. Solve $7^{1/2} \times 8^{1/2}$

III. Solve (any 8) **9×3=27**

1. The sum of angles of a triangle is 180°prove it.

2. Examine whether x+2 is a factor of x^3+3x^2+5x+6.

3. In a cricket match, batsman hits a boundary 6 times out of 30 balls he plays. Find the probability that he didn't hit a boundary.

4. Find the volume of sphere of the radius of the sphere is 2.

5. Find 6 rational numbers between 3 and 4.

6. Write any three Axioms of Euclid's Geometry and give examples.

7. Write properties of quadrilateral?

8. Construct 15° and 90°.

9. The angles of quadrilateral are in the ratio of 3:5:9:13. Find all the angles of the quadrilateral.

IV. Solve **4x4=16**

1. Factorize

   i) $P(x) = x^3 - 4x^2 + x + 6$, $g(x) = x - 3$

   ii) $P(x) = 2x^3 + x^2 - 2x - 1$, $g(x) = x + 1$

2. Prove if two lines intersect each other, then the vertically opposite angles are equal.

   OR

   Give definition of adjacent angles and vertically opposite angles with examples.

3. Factorize

   i) $6x^2 + 5x - 6$

   ii) $3x^2 – x - 4$

   OR

   Locate 2, 3 and 4 on a number line and Draw graph of $3 = 2x + y$

4. Plot the following points and locate the Quadrants in the graph.

   i. A(5, 3), B(-3, 2), C(-4, 7), D(3, -5)

V. Solve **2×5=10**

1. A cylindrical pillar is 50 cm in a diameter, height is 3.5 m. Find the cost of painting the curved surface of the pillar at the rate of rupees 12.50 per cm.

2. Plot a straight line for the following linear equation.

   i. $y = 3 - x$ ii. $y = 2$