



विद्या सर्वार्थ साधिका

ANANDALAYA  
PERIODIC TEST – 1  
Class: IX

Subject: Mathematics  
Date : 20-07-2024

M.M: 40  
Time: 1 Hour 30 min

**General Instructions:**

1. The question paper consists of 22 questions divided into 3 sections A, B and C
2. All questions are compulsory.
3. Section A comprises of 10 questions of 1 mark each.
4. Section B comprises of 6 questions of 2 marks each. Internal choice has been provided in two questions.
5. Section C comprises of 6 questions of 3 marks each. Internal choice has been provided in two questions.

**SECTION- A**

1. Which rational number is equivalent to  $\frac{3}{7}$ ? (1)  
(A)  $\frac{15}{40}$  (B)  $\frac{12}{21}$  (C)  $\frac{15}{21}$  (D)  $\frac{15}{35}$
2. The number 1.221221221221..... is \_\_\_\_\_? (1)  
(A) a natural number (B) a whole number  
(C) a rational number (D) an irrational number
3. What is the ordinate of the point (4, -5)? (1)  
(A) 4 (B) -5 (C) 5 (D) -4
4. The equation  $x(x + 4) - x^2 + 3y + 7 = 0$  is \_\_\_\_\_. (1)  
(A) linear equation in 2 variables. (B) quadratic equation in 2 variables  
(C) quadratic equation in 1 variable. (D) linear equation in 1 variable
5. Find the value of the polynomial  $x^2 - 5x + 7$  at  $x = 0$ . (1)  
(A) 1 (B) -5 (C) 3 (D) 7
6. What is the value of  $m$ , if equation  $3x + 2y = 18$  written in the form  $y = mx + c$ . (1)  
(A)  $3/2$  (B) 9 (C) -9 (D)  $-3/2$
7. If the perpendicular distance of a point from x-axis is 7 units and foot of the perpendicular lies on the negative direction of x – axis, then the point has \_\_\_\_\_. (1)  
(A) x – coordinate = -7 (B) y – coordinate = -7 only  
(C) y – coordinate = 7 only (D) y – coordinate = -7 or 7.
8. What is the degree of the polynomial  $3y^3 - 2y^2 - 12$ . (1)  
(A) 1 (B) 2 (C) 3 (D) 12
9. Which of these equations has (1, 4) as one of the solutions? (1)  
(A)  $5x + 2y = 13$  (B)  $2x + 5y = 13$  (C)  $2x + 2y = 11$  (D)  $15x + 10y = 70$

In the following question number 10, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- (A) Both A and R are true and R is the correct explanation of A.  
(B) Both A and R are true but R is not the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.
10. Assertion: The point P (3,0) lies on x-axis. (1)  
Reason: Every point on Y-axis is of the form (x,0)

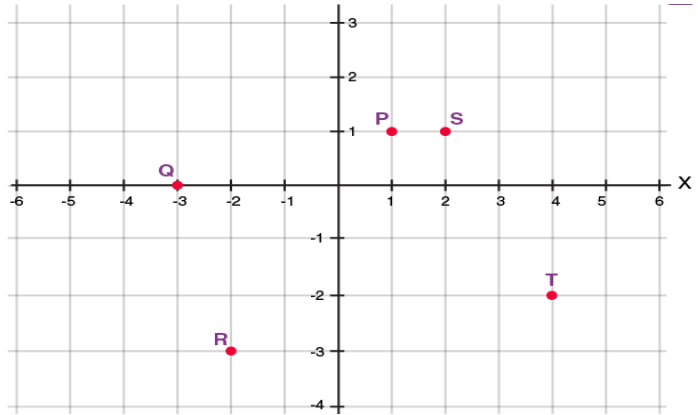
**SECTION- B**

11. Find the zeros of the polynomial  $p(x) = (x - 2)^2 - (x + 2)^2$ . (2)
12. Find the value of a and b, if  $\frac{\sqrt{3}-1}{\sqrt{3}+1} = a + b\sqrt{3}$ . (2)

**OR**

Evaluate:  $\left[\frac{32}{243}\right]^{-\frac{4}{5}}$ .

13. If the coordinates of two points are A (- 2, 3) and B (- 3, 5), then find the value of (abscissa of A) – (Abscissa of B). (2)
14. Write the coordinates of each of the points P, Q, R, S and T from the figure. (2)



15. If the line  $x + y - 7 = 0$  cuts the axes at the point A and B, write the coordinate of A and B. (2)

**OR**

If  $(m, 2m + 1)$  is the solution of the equation  $5x + 7y = 45$ , find the value of  $m$ .

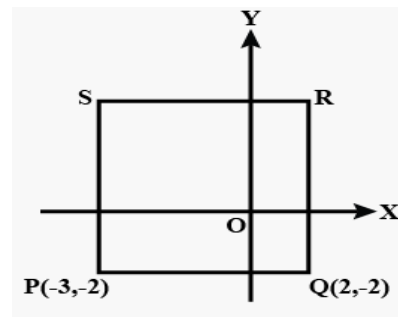
16. Prove that  $\frac{2^{30} + 2^{29} + 2^{28}}{2^{31} + 2^{30} - 2^{29}} = \frac{7}{10}$ . (2)

**SECTION- C**

17. Represent  $2\sqrt{3}$  on number line. (3)
18. It is given that  $3a + 2b = 5c$ , then find the value of  $27a^3 + 8b^3 - 125c^3$ , if  $abc = 0$ . (3)
- OR**
- If  $2x + 3y = 12$  and  $xy = 6$ , find the value of  $8x^3 + 27y^3$ .
19. Find the distance of the following points from the Y-axis: (3)  
 A (3,0), B (0, -3), C (22, -5), D (-3, -1), E (0,0) and F (1, -2).

**OR**

In the given figure PQRS is a square. Find the (i) sides of a square and (ii) coordinates of point S and R.



20. For what value of p;  $x = 2$  and  $y = 3$  is a solution of  $(p + 1)x - (2p + 3)y - 1 = 0$ ? (3)  
 (i) Write the equation in standard form and the value of a, b, and c.  
 (ii) Is this line passes through the point (1, 1)? Justify your answer.
21. Simplify:  $3\sqrt{45} - \sqrt{125} + \sqrt{200} - \sqrt{50}$ . (3)
22. (i) Factorise:  $6x^2 + 5x - 6$ . (3)  
 (ii) Factorise:  $x^3 - 2x^2 - x + 2$ .