

PM SHRI KENDRIYA VIDYALAYA SITAPUR SHIFT-1

Periodic Test-1 (2024-25)

Class-IXth

Subject- Mathematics

Time allowed- 1 ½ hours

Max. Marks- 40

GENERAL INSTRUCTIONS :

- i) All the questions are compulsory. There are four sections A , B and C.
- ii) There are 10 questions in Section A . Each question carries 1 mark..
- iii) There are 6 questions in Section B . Questions no 11 and 12 carries 2 marks each, Questions no 13 and 14 carries 3 marks each, Questions no 15 and 16 carries 5 marks each .
- iv) There are 2 CCT questions in Section C . Each question carries 4 marks.

SECTION – A (10 X 1 Mark = 10Marks)

Multiple Choice Questions (Q 1 to Q 8) Question 9 and 10 are Assertion Reason

1. Which of the following numbers has the terminating decimal representation?
(a) $\frac{1}{7}$ (b) $\frac{1}{3}$ (c) $\frac{3}{5}$ (d) $\frac{17}{3}$
2. If $(a + \frac{1}{a}) = 9$ then $a^3 + \frac{1}{a^3}$ equals
(a) $\frac{10\sqrt{3}}{3}$ (b) $3\sqrt{3}$ (c) 18 (d) $7\sqrt{7}$
3. Which of the following statement is not true?
(a) Between two integers, there exist infinite number of rational numbers.
(b) Between two rational numbers, there exist infinite number of integers
(c) Between two rational numbers, there exist infinite number of rational numbers.
(d) Between two real numbers, there exists infinite number of real numbers.
4. The value of x , when $(2)^{x+4} \times (3)^{x+1} = 288$ is
(a) 1 (b) -1 (c) 0 (d) 2
5. Point (0, 2) lies
(a) on the x -axis (b) in the second quadrant (c) on the y -axis (d) in the third quadrant
6. If p (a,b) lies in II quadrant then which of the following is true about a and b?
(a) $a > 0, b > 0$ (b) $a > 0, b < 0$ (c) $a < 0, b > 0$ (d) $a < 0, b < 0$
7. The solution of equation $x - 2y = 4$ is
(a) (0,2) (b) (2,0) (c) (4,0) (d) (1,1)
8. The zero of the polynomial $p(x) = 2x + 1$
(a) 0 (b) 2 (c) $-\frac{1}{2}$ (d) $\frac{1}{2}$
9. Which of the following is an irrational number?
(a) 0.090909.... (b) $\frac{22}{7}$ (c) 0.25 (d) $\sqrt{4}$
10. The value of $64^{\frac{1}{6}}$ is
(a) 8 (b) 4 (c) 16 (d) 2

DIRECTION : In each of the following questions, a statement of Assertion is given followed by a corresponding statement of Reason just below it. Of the statements, mark the correct answer as:

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
- (c) Assertion is true but reason is false.
- (d) Assertion is false but reason is true.

11. **Assertion :** The points (-3, 5) and (5, -3) are at different positions in the coordinate plane.

Reason : If $x \neq y$ then $(x,y) \neq (y,x)$

12. **Assertion :** Every integer is a rational number.

Reason : Every integer 'm' can be expressed in the form $\frac{m}{1}$.

SECTION – B

13. If $p(x) = x^2 - 2\sqrt{2}x + 1$, find the value of $p(\sqrt{2})$. (2 Marks)
14. Show that $0.2353535... = 0.\overline{235}$ can be expressed in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$. (2Marks)
15. Factorise $6x^2 - 5x - 6$ (3 Marks)

16. Without actually calculating the cubes, Find the value of $(18)^3 + (-11)^3 + (-7)^3$. (3 Marks)
17. Draw $\sqrt{7.6}$ on number line. (5 Marks)
18. Verify that $x^3 + y^3 + z^3 - 3xyz = \frac{1}{2}(x+y+z)[(x-y)^2 + (y-z)^2 + (z-x)^2]$ (5 Marks)

SECTION – C (2 X 4 Mark = 8Marks)

CCT Questions

19. On one day, principal of a particular school visited the classroom. Class teacher was teaching the concept of polynomial to students. He was very much impressed by her way of teaching. To check, whether the students also understand the concept taught by her or not, he asked various questions to students. Some of them are given below. Answer them.

(i) Which one of the following is not a polynomial? (1 Marks)

- (a) $\sqrt{4x^2 - x + 1}$ (b) $\frac{x^{\frac{3}{2}} + x^{\frac{1}{2}}}{x^{\frac{1}{2}}}$ (c) $x^{-3} - 1$ (d) $y^2 + 5y + 1$

(ii) The polynomial of the type $ax^2 + bx + c$, $a = 0$ is called (1 Marks)

- (a) Linear polynomial (b) Quadratic polynomial
(c) Cubic polynomial (d) Biquadratic polynomial

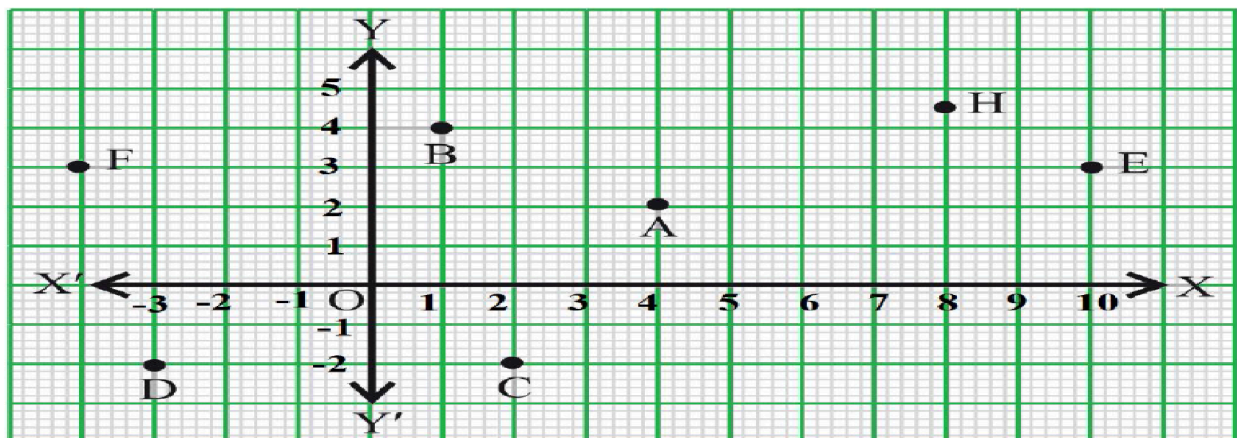
(iii) What is degree of zero polynomial (1 Marks)

- (a) 1 (b) No degree (c) 0 (d) Not defined

(iv) Zero of a constant polynomial is (1 Marks)

- (a) Any number (b) Not defined (c) 0 (d) No zero

20. Students of class IX are on visit of Sansad Bhawan. Teacher assign them the activity to observe and take some pictures to analyses the seating arrangement between various MP and speaker based on coordinate geometry. The staff tour guide explained various facts related to Math's of Sansad Bhawan to the students, students were surprised when teacher ask them you need to apply coordinate geometry on the seating arrangement of MP's and speaker.



Calculate the following refer to the below image and graph. Answer the following questions:

- (i) What are the coordinates of position 'F'? (1 Marks)
- (ii) What are the coordinates of position 'D'? (1 Marks)
- (iii) In which quadrant, the point 'C' lie? (1 Marks)
- (iv) Find the perpendicular distance of the point E from the y-axis. (1 Marks)