NINTH CLASS MODEL PAPER (AP)

SUMMATIVE ASSESSMENT – II

MATHEMATICS PAPER – I (English Version)

Time: 2 Hrs. 45 Mins.	**PART - A and B**	**Max.Marks: 40**

Instructions:

1) **15 minutes of time is allotted for reading the question paper.**

2) **Answer All questions.**

3) **Answer for questions under PART - A should be written in a separate answer booklet.**

4) **The question paper consists of 4 sections and 33 questions.**

Time: 2 Hrs.	**PART - A**	**Marks: 30**

SECTION - I

Note: i) Answer All questions. 　　　　　　　　　　　　　　　　　　　**4 × 1 = 4**

　　ii) Each question carries 1 mark.

1. Express $0.12\overline{5}$ in the form of $\dfrac{p}{q}$.

2. Verify whether the value of $x = -\dfrac{1}{2}$ is a zero of the polynomial $p(x) = 2x + 1$ or not?

3. If $(0, a)$ and $(b, 0)$ are the solutions of the linear equation $8x - y = 32$, then find a and b.

4. In a quadrilateral ABCD, $AC = AD$ and AB bisects $\angle A$. Show that $\Delta ABC \cong \Delta ABD$.

SECTION - II

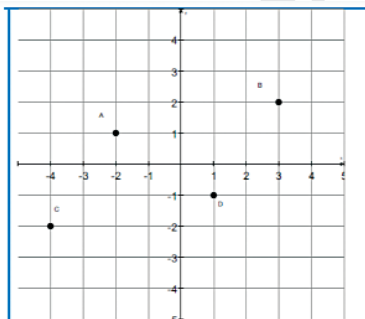**Note: i) Answer All questions.** 　　　　　　　　　　　　　　　　　　　**5 × 2 = 10**

　　ii) Each question carries 2 marks.

5. If a and b are rational numbers, find the value of 'a' and 'b' in the following equation.

$$\dfrac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}} = a + b\sqrt{15}$$

6. Give possible expressions for the length and breadth of the rectangle whose area is given by $25a^2 - 35a + 12$.

7. Write the following based on the graph.

i) The ordinate of A

ii) The abscissa of B

iii) The point denoted by $(-4, -2)$

iv) Position of D

8. Write a linear equation in two variables and find three solutions for it.

9. The four angles of a quadrilateral are in the ratio of 2 : 3 : 4 : 6. Find the measure of each angle of the quadrilateral.

SECTION – III

Note: i) Answer All questions. $4 \times 4 = 16$

   ii) Each question carries 4 marks.

   iii) Each question has an internal choice.

10. **a)** When a polynomial $2x^3 + 3x^2 + ax + b$ is divided by $(x – 2)$ leaves remainder 2 and $(x + 2)$ leaves remainder –2. Find a and b.

(OR)

b) Find the value of $\sqrt{7}$ up to six decimal places by long division method.

11. **a)** Show that $(x + 4)$, $(x – 3)$ and $(x – 7)$ are factors of $x^3 – 6x^2 – 19x + 84$.

(OR)

b) ΔABC is an isosceles triangle in which AB = AC. Side BA is produced to D such that AD = AB. Show that $\angle BCD$ is a right angle.

12. **a)** Write the quadrant in which the following points lie.

   i) (2022, 0)   ii) (2022, –2021)   iii) (–2022, 2021)

   iv) (–2021, –2022)   v) (0, 2022)   vi) (–2022, 0)

   vii) (2021, 2022)   viii) (0, –2022)

(OR)

b) The opposite angles of a parallelogram are $(3x – 2)°$ and $(x + 48)°$. Find the measure of each angle of the parallelogram.

13. **a)** Visualize 6.174 on number line, using successive magnification.

(OR)

b) Draw the graph of the equation $3x + 4y = 12$. Find from the graph the value of y when x = 1.

Time: 30 Minutes   **PART - B**   **Marks: 10**

Instructions:

i) **Answer All the questions.** $20 \times \frac{1}{2} = 10$

ii) **Each question carries $\frac{1}{2}$ mark.**

iii) **From the given four options choose the correct answer and write the corresponding letter (A/B/C/D) in the given brackets.**

iv) **Marks are not awarded for over writing answers.**

SECTION – IV

14. A rational number between 5 and 6 is ....   ( )

   A) $\frac{9}{2}$ B) $\frac{10}{2}$ C) $\frac{11}{2}$ D) $\frac{12}{2}$

15. $(2022 + \sqrt{2})(2022 – \sqrt{2})$ is .... number.   ( )

   A) rational   B) irrational   C) transcendental   D) can't be determined

16. Give an example for transcendental number.

17. Match the following. ( )

Group - A	Group - B

i) $\left(\sqrt{a} + \sqrt{b}\right)\left(\sqrt{a} - \sqrt{b}\right) =$ ( )   a) $a + b - 2\sqrt{ab}$

ii) $\left(\sqrt{a} + b\right)^2 =$ ( )   b) $a - b$

iii) $\left(\sqrt{a} - \sqrt{b}\right)^2 =$ ( )   c) $a + b^2 - 2\sqrt{a}b$

A) i-c, ii-a, iii-b   B) i-b, ii-c, iii-a   C) i-a, ii-b, iii-c   D) i-a, ii-c, iii-b

18. Degree of the polynomial $3x^6y^3 + 6x^3y^2 - 1$ is .... ( )

A) 3   B) 6   C) 5   D) 9

19. The coefficient of x^2 in $(2x - 8)(7 - 3x)$ is .... ( )

A) 2   B) 3   C) 6   D) –6

20. If 2 is a zero of the polynomial $x^2 - kx + 8$, then k = ... ( )

A) 6   B) 3   C) 2   D) 8

21. The distance between (–1, 5) and (x, 5) is 8 units. Then the value of x is .... ( )

A) –9 or 9   B) –7 or 9   C) –9 or 7   D) –7 or –9

22. If the distance of a point from X - axis is 8 units and its distance from Y - axis is 3 units then the point is denoted by ( )

A) (8, 3)   B) (–8, 3)   C) (–3, 8)   D) (3, 8)

23. If $x < 0$, $y > 0$ then the point $(-x, -y)$ lies in .... quadrant. ( )

A) 1st B) 2nd C) 3rd D) 4th

24. If (a, 1) lies on the graph of $3x - 2y + 4 = 0$, then a = ... ( )

A) $-\dfrac{2}{3}$ B) $\dfrac{2}{3}$ C) $\dfrac{3}{2}$ D) $-\dfrac{3}{2}$

25. Which of the following is not a solution of the linear equation $x + 2y = 4$? ( )

A) (2, 0)   B) (0, 2)   C) (1, 1)   D) (–2, 3)

26. Which of the following equation has graph parallel to Y – axis? ( )

A) $y = -2$ B) $x - y = 2$ C) $x = 1$ D) $x + y = 2$

27. Assertion: There are infinite number of lines which passes through (2, 14). ( )

Reason: A linear equation in two variables has infinitely many solutions.

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.

28. In ΔABC, AB = 5 cm, AC = 5 cm and $\angle A = 50°$, then $\angle B =$ ( )

A) 35°   B) 80°   C) 40°   D) 65°

29. Which of the following is not a criterion for congruence of triangles? ( )

A) SSA   B) SAS   C) ASA   D) SSS

30. The angles of a triangle are in the ratio 2 : 1 : 3, then the triangle is a .... triangle.   (   )

   A) equilateral   B) isosceles   C) acute angled   D) right angled

31. A quadrilateral having only one pair of opposite sides parallel is called a ....   (   )

   A) square   B) rhombus   C) trapezium   D) parallelogram

32. The adjacent angles of a parallelogram are in the ratio 2 : 3, then the angles are   (   )

   A) 72°, 108°   B) 90°, 180°   C) 36°, 144°   D) 52°, 144°

33. The length and breadth of a rectangle are in the ratio 4 : 3. If the diagonal measures 25 cm.   (   )

   Then the perimeter of the rectangle is .... cm.

   A) 58   B) 70   C) 60   D) 80

ANSWERS

PART – B

14-C; 15-A; 16-π; 17-B; 18-D; 19-D; 20-A; 21-B; 22-D; 23-D; 24-C; 25-A; 26-C; 27-B; 28-D; 29-A; 30-D; 31-C; 32-A; 33-B.

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