NINTH CLASS MODEL PAPER (AP)

SUMMATIVE ASSESSMENT – 1

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 the 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.**
5. **There is an internal choice in Section – III.**
6. **Write answers neatly and legibly.**

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

SECTION – I

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

ii) Each question carries 1 mark.

1. State Remainder theorem.
2. State the abscissa and ordinate of the point (6, –8) and describe the position of it.
3. Factorize $27a^3 + 125b^3$.
4. Represent $\frac{8}{5}$ and $\frac{-8}{5}$ on number line.

SECTION – II

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

ii) Each question carries 2 marks.

5. Show that (x + 4), (x – 3) and (x – 7) are factors of $x^3 - 6x^2 - 19x + 84$.
6. If x = 2 and x = 0 are zeroes of the polynomial $p(x) = 2x^3 - 5x^2 + ax + b$. Find the values of 'a' and 'b'.
7. With the help of the picture answer the following questions.

   i) What is the object in column 3 and row 3?

   ii) What is the object in column 1 and row 2?

   iii) What is the object in column 2 and row 1?

   iv) What is the object in column 4 and row 4?

8. Find the value of $\sqrt{5}$ up to three decimal places.

9. Convert the following decimal number in the form of $\frac{p}{q}$.

i) $0.\overline{745}$ ii) $5.\overline{2}$

SECTION – III

Note: i) Answer All questions. **4 × 4 = 16**

ii) Each question carries 4 marks.

iii) Choose (a) or (b) any one from each question.

10. **a)** If 'a' and 'b' are rational numbers, find the value of 'a' and 'b' if $\frac{\sqrt{5}+\sqrt{3}}{2\sqrt{5}-3\sqrt{3}} = a - b\sqrt{15}$.

(OR)

b) Find the zero of the polynomial in each of the following cases.

i) $f(x) = x - 2022$ ii) $f(x) = 2x + 5$ iii) $f(x) = 2x - 7$ iv) $f(x) = x^2$

11. **a)** Find the remainder when $2x^2 - 3x + 5$ is divided by $2x - 3$. Does it exactly divide the polynomial? State reason.

(OR)

b) State True or False of the following statements.

i) In the cartesian plane the horizontal line is called Y – axis.

ii) The point (2, –3) lies in the third quadrant.

iii) The point (–5, –8) lies in the fourth quadrant.

iv) The point (–x, y) lies in the second quadrant if $x < 0$, $y > 0$.

12. **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) Evaluate the following products without actual multiplication.

i) 101×99 ii) 999×999 iii) 501×501 iv) 30.5×29.5

13. **a)** Visualise 2.665 on the number line, using successive magnification.

(OR)

b) Plot the following points on a graph paper.

i) (3, 4) ii) (–2, 3) iii) (–5, –2) iv) (4, –3)

v) (–4, 0) vi) (3, 0) vii) (0, 5) viii) (0, –7)

Time: 30 Mins. **PART – B** **Marks: 10**

Instructions:

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

ii) **Each question has 4 options. Write the capital letter indicating the answer in the given brackets.**

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

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

SECTION – IV

14. Which of the following statements is true? ( )

A) Product of two irrational numbers is always irrational.

B) Product of a rational and an irrational number is always irrational.

C) Sum of two irrational numbers can never be irrational.

D) Sum of an integer and a rational number can never be an integer.

15. Express $0.4\overline{7}$ in the form of $\frac{p}{q}$. ( )

A) $\frac{43}{90}$ B) $\frac{43}{99}$ C) $\frac{47}{90}$ D) $\frac{47}{99}$

16. An irrational number between 2 and 2.5 is ( )

A) $\sqrt{11}$ B) $\sqrt{5}$ C) $\sqrt{22.5}$ D) $\sqrt{12.5}$

17. The value of $0.\overline{23} + 0.\overline{22}$ = ( )

A) 0.45 B) $0.45\overline{}$ C) $0.\overline{45}$ D) 0.01

18. If $(x - 2)$ is a factor of $x^2 + 3ax - 2a$, then a = ( )

A) 2 B) –2 C) 1 D) –1

19. Assertion: 2 is a zero of the polynomial $p(x) = x^2 - 5x + 6$ ( )

Reason: A real number α is a zero of a polynomial $p(x)$, if $p(\alpha) = 0$

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.

20. If $p(x) = x^3 + 6x + 5$ then find the value of $p(-2)$ = ( )

A) 25 B) –25 C) –15 D) 15

21. Statement 1: $5x^2 - 3$ is a quadratic polynomial. ( )

Statement 2: General form of a quadratic polynomial is $ax^2 + bx + c$, $(a \neq 0)$.

A) Only statement 1 is correct. B) Only statement 2 is correct.

C) Both statements are correct. D) Both statements are wrong.

22. The value of $(64)^{1/3}$ ( )

A) 8 B) 4 C) 2 D) 16

23. If x + 1 is a factor of the polynomial $2x^2 + kx$, then k = ( )

A) –2 B) –3 C) 4 D) 2

24. Degree of the polynomial $7x^3 + 5x^2 + 2x - 6$ is ..... ( )

A) 2 B) 3 C) 5 D) 7

25. $x^2 - y^2$ = ( )

A) $(x + y)^2$ B) $(x - y)^2$ C) (x + y)(x + y) D) (x + y)(x – y)

26. Which of the following is not a polynomial? ( )

A) $\sqrt{3}x^2 + 5y$ B) $4x^2 + 5x - 2$ C) $\frac{1}{x+1}$ D) 5

27. Match the following. ( )

i) $(x + y)^3$ ( ) a) $x^2 + 2xy + y^2$

ii) $(x - y)^3$ ( ) b) $x^3 + 3x^2y + 3xy^2 + y^3$

iii) $(x + y)^2$ ( ) c) $x^3 - 3x^2y + 3xy^2 - y^3$

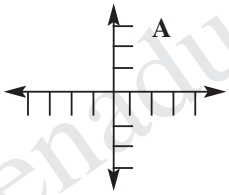
A) i–b, ii–c, iii–a B) i–b, ii–a, iii–c C) i–a, ii–b, iii–c D) i–a, ii–c, iii–b

28. Two points having same abscissa but different ordinates lie on ( )

A) X – axis B) Y – axis

C) a line parallel to Y – axis D) a line parallel to X – axis

29. Write the ordinate of the point A shown in the figure ( )



A) 3 B) 0

C) –2 D) 2

30. The point (–3, 2) lies in ( )

A) Q_1 B) Q_2 C) Q_3 D) Q_4

31. The perpendicular distance of the point P(4, 3) from X – axis is ..... ( )

A) 4 B) 3 C) 1 D) 7

32. The intersection point of both axes is ..... ( )

A) (x, 0) B) (0, x) C) (0, y) D) (0, 0)

33. A point which is on X – axis is ..... ( )

A) (x, 0) B) (0, x) C) (0, y) D) (x, y)

ANSWERS PART – B

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

Writer: Dr. T.S.V.S. Suryanarayana Murty