BOARD OF SECONDARY EDUCATION (TELANGANA)

SUMMATIVE ASSESSMENT – II

TENTH CLASS MATHEMATICS MODEL PAPER

PAPER – I (ENGLISH VERSION)

Time: 2 hrs. 45 mins. **PART A & B** **Maximum Marks: 40**

INSTRUCTIONS:

i) In the time duration of 2 hours 45 minutes, 15 minutes of time is alloted to read and understand the question paper.

ii) Answer the questions under PART – A on a separate answer book.

iii) Write the answers to the questions under PART – B on the question paper itself and attach it to the answer book of PART – A.

Time: 2 hrs. **PART A & B** **Marks: 35**

INSTRUCTIONS:

i) PART – A comprises of three Sections I, II, III.

ii) All the questions are compulsory.

iii) There is no overall choice. However there is Internal Choice to the questions under Section – III.

SECTION – I

Note: i) Answer ALL the questions.

ii) Each question carries ONE mark. **7 × 1 = 7**

1. Write irrational number in between a & b (a, b are rational numbers).

2. $A = \{x/x \in$ multiples of $4\}$, $B = \{x/x \in$ factors of $4\}$ then find the value of $A \cap B$.

3. Navya said that (0, 5) is lie on X – axis. Justify your answer.

4. Write the 10^{th} term from last of 2, 8, 14, 20, ..., 80.

5. $\sqrt{5}, -\sqrt{5}$ are the zeroes of quadratic polynomial. Write the polynomial.

6. Solve $2x - y = 5$ and $3x + 2y = 11$ by substituting method.

7. $ax^2 + bx + c = 0$ is quadratic equation. Then what is the nature of roots if $b^2 - 4ac > 0$.

SECTION – II

Note: i) Answer ALL the questions.

ii) Each question carries TWO marks. **6 × 2 = 12**

8. Show that $5 + \sqrt{6}$ is irrational number by using indirect method.

9. If n(A) = 5, n(B) = 6 and A, B are disjoint sets then find the value of $n(A \cup B)$.

10. If $5x + 3y = 11$ and $10x + 6y = 15$ are parallel lines. Justify.

11. Write the formula of sum of 'n' terms in Arithmetic progression. Explain terms.

12. Sides of a Right angled triangle are 5x cm, (3x – 1) cm and Area of that triangle is 60 cm^2 then x = ?

13. Two vertices of a triangle are (–1, 4) and (–1, 5), its centroid is (0, –5) then find the third vertex.

SECTION – III

Note: i) Answer ALL the questions.

ii) Each question carries FOUR marks. **4 × 4 = 16**

iii) Each question have Internal Choice.

14. **a)** Cost of 4 chairs and 3 tables is Rs.2100, Cost of 5 chairs and 2 tables is Rs.1750. Write the pairs of linear equations in two variables and find the value of chairs and tables by using graph method.

(OR)

b) Draw the graph of $p(x) = x^2 - 3x - 10$ and write the zeroes.

15. **a)** Is A(2, –2), B(8, 4), C(5, 7), D(–1, 1) are vertices of rectangle? If vertices of rectangle then find the area.

(OR)

b) 6^{th} term, 13^{th} terms of a Geometric progression are 24, $\frac{3}{16}$ respectively. Then find the G.P. and also find first term and ratio.

16. **a)** Solve $\frac{57}{x+y} + \frac{6}{x-y} = 5$, $\frac{38}{x+y} + \frac{21}{x-y} = 9$.

(OR)

b) Solve $\frac{1}{x+1} + \frac{2}{x+2} = \frac{4}{x+4}$.

17. **a)** If $A = \{x/x \in \text{factors of } 35\}$, $B = \{x/x \in \text{prime numbers, } x < 15\}$ then find $A \cup B$, $A \cap B$, $A - B$ and $B - A$.

(OR)

b) A rectangular plot length is 8 m excess of its breadth. It's area is 308 m^2 then find length, breadth and its perimeter.

Time: 30 Minutes **PART – B** **Marks: 5**

INSTRUCTIONS:

i) Answer ALL the questions.

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

iii) Answers are to be written in question paper only.

iv) Write the CAPITAL LETTER (A, B, C, D) showing the correct answer for the following questions in the brackets provided against them.

v) Marks will not be awarded in any case of over writing, rewriting, erased answers. $10 \times \frac{1}{2} = 5$

SECTION – IV

18. LCM & HCF of 10 & 20 is ( )

A) 20, 10 B) 10, 20 C) 5, 10 D) 10, 5

19. $\log_2 32 + \log_{10} 10$ = ... ( )

A) 5 B) 6 C) 1 D) 0

20. Which of the following is false? ( )

A) A $\subset$ B then A $\cup$ B = B B) A $\subset$ B then A $\cap$ B = A

C) A $\cup$ A = A D) A $\cap$ A = $\varnothing$

21. α, β, γ are the roots of cubic polynomial $3x^3 + 3x^2 - 5x + 6$ then $\alpha + \beta + \gamma$ = ... ( )

A) 1 B) 3 C) –1 D) $\frac{-5}{3}$

22. What is the condition of $a_1x + b_1y + c_1 = 0$ $(a_1^2 + b_1^2 \neq 0)$, $a_2x + b_2y + c_2 = 0$ $(a_2^2 + b_2^2 \neq 0)$ are coincident lines? ( )

A) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ B) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

C) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ D) None

23. x = a and y = b are the solutions of 3x + 2y = 114, 2x + 3y = 4 then a – b = ... ( )

A) –5 B) –7 C) –3 D) 7

24. If the sides of Right angle triangle are x – 1, x, x + 1 then x = ( )

A) 3 B) 5 C) 2 D) 4

25. Which of the following is Arithmetic progression ? ( )

A) 2, 4, 8, 16, ... B) 10, 10^2, 10^3, ... C) 256, –128, 64, –32, ... D) 8, 14, 20, 26,.....

26. The sum of first 20 natural numbers is ( )

A) 210 B) 200 C) 110 D) 100

27. A(5, x), B(4, 7), C(7, –4) are the vertices of traingle ABC, Area of ΔABC = 2 sq. units, then x = ... ( )

A) 3 B) 2 C) 4 D) 0

PART – B ANSWERS

18–A; 19–B; 20–D; 21–C; 22–C; 23–B; 24–D; 25–D; 26–A; 27–B.

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