

BOARD OF SECONDARY EDUCATION (AP)
SUMMATIVE ASSESSMENT – II
TENTH CLASS MATHEMATICS MODEL PAPER
PAPER – II (ENGLISH VERSION)

Time: 2 hrs. 45 mins.

PART – A & B

Maximum Marks: 40

INSTRUCTIONS:

- i) In the time duration of 2 hrs. 45 mins., 15 minutes of time is allotted to read and understand the question paper.
- ii) Answer the questions under PART – A in 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

Marks: 30

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 an Internal Choice to the questions under Section – III.

SECTION – I

INSTRUCTIONS:

- i) Answer ALL the questions.
- ii) Each question carries ONE mark. $4 \times 1 = 4$
1. Express 'tan θ ' in terms of sin θ .
2. Find the area of triangle whose vertices are (0, 4) & (3, 0) with origin.
3. How many tangents are drawn from a point outside the circle? Draw a figure.
4. A box contains 10 Red balls, 15 Blue balls. One ball is taken out of the box at random. What is the probability that the ball taken out will be not blue?

SECTION – II

INSTRUCTIONS:

- i) Answer ALL the questions.
- ii) Each question carries TWO marks. $5 \times 2 = 10$
5. Find the ratio in which the x – axis divides the line segment joining the points (4, –1), (–2, –3).
6. Shodhana said that, $\frac{\sin \theta}{1 - \cos \theta} = 1$ solution is $\theta = 90^\circ$. Justify your answer.
7. $\Delta ABC \sim \Delta PQR$, BC = 5 cm, QR = 4 cm, ΔABC area is 125 sq.cm. Then find the area of ΔPQR ?

8. A box contains 25 discs which are numbered from 1 to 25. One disc is drawn at random from the box. Find the probability that it bears (i) prime number ii) multiples of 3.
9. Write the Median formula and explain the terms.

SECTION – III

INSTRUCTIONS:

- i) Answer ALL the questions.
- ii) Each question carries FOUR marks.
- iii) Each question has Internal Choice. **4 × 4 = 16**
10. a) The angle of elevation of the top of the building from the foot of the tower is 45° , and the angle of elevation of the top of the tower from the foot of the building is 60° . If the tower is 50 m high, find the height of the building.

(OR)

- b) A Student noted the number of cars passing through a spot on a road for 100 periods, each of 3 minutes, and summarised this in the table given below.

No. of Cars	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
frequency	7	14	13	12	20	11	15	8

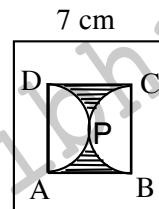
Find the mode of the data.

11. a) If $\operatorname{cosec} \theta + \cot \theta = K$ then show that $(K^2 + 1) \cos \theta = K^2 - 1$.

(OR)

- b) Find the area of the shaded region in figure, if ABCD is a square of side 7 cm and APD and BPC are semicircles.

(use $\pi = \frac{22}{7}$).



12. a) If the coordinates P (3, -5), Q (5, -1), R (2, 1), S (1, 2) shows straight line or not? why?

(OR)

- b) Five cards – the ten, Jack, Queen, King and Ace of diamonds are well shuffled with their face downwards. One card is then picked up at random.

i) What is the probability that the card is queen?

ii) If the queen is drawn and put a side, what is the probability that the second card picked up is (a) an ace? (b) a queen?

13. a) Draw a circle of radius 4 cm. from a point 9 cm away from its centre. Construct the pair of tangents to the circle and measure their lengths.

(OR)

b)

CI	0 -10	10 -20	20 -30	30 -40	40 -50	50 -60	60 -70
f	3	8	10	12	6	3	1

Draw it's less than type cumulative frequency curve.

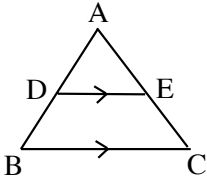
INSTRUCTIONS:

- i) Answer ALL the questions.
- ii) Each question carries $\frac{1}{2}$ Mark.
- iii) Answers are to be written in question paper only.
- iv) Marks will not be awarded in any case of over writing and rewriting or erased answers.
- v) Write the CAPITAL LETTER (A, B, C, D) showing the correct answer for the following questions in the brackets provided against them.

$$20 \times \frac{1}{2} = 10$$

SECTION – IV

14. Slope of (3, 5) & (4, 2) is ()
 A) 3 B) $\frac{-1}{3}$ C) -3 D) $\frac{1}{3}$
15. From the below which coordinate in X – axis ()
 A) (3, 0) B) (0, 3) C) (0, -5) D) (0, 1)
16. Median of $x, \frac{x}{2}, \frac{x}{3}, \frac{x}{4}, \frac{x}{5}$ is 5 then x = ()
 A) 5 B) 15 C) 3 D) 25
17. Which of the following is not the value of probability ()
 A) $\frac{2}{3}$ B) $\frac{5}{2}$ C) 0.5 D) 0.56
18. If $\tan A = \sqrt{3}$, $\tan B = \frac{1}{\sqrt{3}}$ then A, B are ()
 A) $30^\circ, 60^\circ$ B) $45^\circ, 60^\circ$ C) $60^\circ, 45^\circ$ D) $60^\circ, 30^\circ$
19. In triangle ABC, $BC^2 = AB^2 + AC^2$ then $\angle A =$ ()
 A) 45° B) 60° C) 90° D) 0°
20. If $\sin A = \cos B$ then $A + B =$ ()
 A) 30° B) 45° C) 60° D) 90°
21. Area of regular hexagon with side 'a' is ()
 A) $\frac{\sqrt{3}}{4} a^2$ B) $\sqrt{3} a^2$ C) $6\sqrt{3} a^2$ D) $6\frac{\sqrt{3}}{4} a^2$
22. $\cos^2 \theta - 1 =$ ()
 A) $\sin^2 \theta$ B) $\cot^2 \theta$ C) $-\sin^2 \theta$ D) 0
23. A person is observing a building of 10m height, its top at the angle of elevation 45° . The distance between person and building is ()
 A) 10 m B) 100 m C) 15 m D) 1 m
24. Mid value of 40 – 55 is ()
 A) 47 B) 47.5 C) 50 D) 45

25. If a die thrown, getting a number 7 is ()
 A) Exhaustive event B) Sure event
 C) Impossible event D) None
26. The ratio of the areas of two similar triangles is equal to the ratio of the of their corresponding sides ()
 A) Cubes B) Squares C) Equal D) None
27. Distance between the points (7, 8), (-2, 3) is ()
 A) 5 B) 15 C) 20 D) $\sqrt{106}$
28. Slope of X - axis is ()
 A) 1 B) 0 C) Not defined D) X
29.  In ΔABC , $DE \parallel BC$ then $\frac{AD}{AB} =$ ()
 A) $\frac{AE}{EC}$ B) $\frac{AC}{AE}$ C) $\frac{AE}{AC}$ D) $\frac{EC}{AC}$
30. Area of a sector, whose radius is 7cm with an angle is 60° is ()
 A) $\frac{70}{3}$ sq.cm B) $\frac{77}{3}$ sq.cm C) $\frac{11}{3}$ sq.cm D) $\frac{7}{3}$ sq.cm
31. Value of $1 + 2(\tan^2 60^\circ)^2$ is ()
 A) 7 B) 8 C) $1 + 2\sqrt{3}$ D) $\sqrt{3}$
32. A pole is 15 mts height. It's shadow length also 15 m. Then angle of elevation of the sun rays with the ground is ()
 A) 60° B) 30° C) 45° D) 90°
33. Median of first 10 odd numbers is ()
 A) 10 B) 11 C) 13 D) 9

PART - B: ANSWERS

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