

BOARD OF SECONDARY EDUCATION (TELANGANA)
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) Answers the questions under PART – A in 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: 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 an internal choice to the questions under Section – III.

SECTION – I

INSTRUCTIONS:

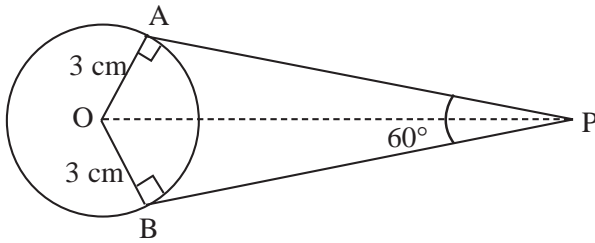
- i) Answer ALL the questions.
- ii) Each question carries ONE mark. $7 \times 1 = 7$
1. In a triangle ABC; X, Y, Z are the mid points of AB, BC & AC. Then find the ratio of areas ΔABC & ΔXYZ .
2. Find the median of first 10 prime numbers.
3. A circle with radius 5 cm. Find the distance between two parallel tangents.
4. How many total possibilities, if we throw two dice at a time?
5. Show $\tan A$ value in terms of $\sin A$.
6. Write the formula of total surface area of a cylinder. Explain.
7. Niharika said that, height & shadow of a tree are same, then the angle between them is 60° . Do you agree with her? Explain.

SECTION – II

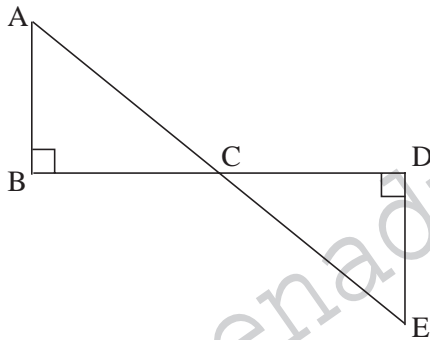
INSTRUCTIONS:

- i) Answer ALL the questions.
- ii) Each question carries TWO marks. $6 \times 2 = 12$
8. Find the value of $(1 + \cot 24^\circ \cdot \cot 66^\circ)(1 - \cot 18^\circ \cdot \cot 72^\circ)$.

9. Three coins are tossed simultaneously, what is the probability that get atleast two heads?
10. If two cylinder heights are same, if radius of one cylinder is twice the another, then find the ratio of volumes of two cylinders.
11. In the figure, $OA = 3$ cm, $\angle APB = 60^\circ$, find OP .



12.



AB & DE are the perpendicular lines of \overline{BD} . $AC = 5$ cm, $CE = 10$ cm & Area of $\triangle ABC = 75$ cm² then find area of $\triangle CDE$.

13. Find the mean & mode of the given data.
5, 4, 3, 2, 5, 4, 3, 5

SECTION - III

INSTRUCTIONS:

- i) Answer ALL the questions.
ii) Each question carries FOUR marks.
iii) Each question has Internal Choice.

$$4 \times 4 = 16$$

14. a) Find the mean of the following table, using Step-deviation method.

CI	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30
f	2	8	12	24	38	16

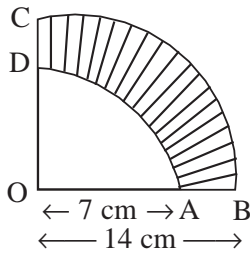
(OR)

b) Show that $\frac{\cos x}{1 - \tan x} + \frac{\sin x}{1 - \cot x} = \cos x + \sin x$

15. a) Number of pages in a mathematics book is 400. If we turn a page
- (i) What is the probability that multiple of 5?
- (ii) What is the probability that is even number?

(OR)

b) From figure find the area of ABCD.



16. a) Draw a circle of radius 4 cm. From a point 8.5 cm away from its centre, construct the pair of tangents.

(OR)

b) Draw the less than cumulative frequency curve of the following table.

CI	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
f	5	10	22	47	5	7	4

17. a) On the same side of a tower, two objects are located. When observed from the top of the tower, their angles of depression are 45° & 60° . If the height of the tower is 100 m, find the distance between the objects.

(OR)

b) A spherical ball of radius 21 cm is melted and recast into cones whose radius is 3 cm & height is 7 cm. Find the number of cones made by them.

INSTRUCTIONS:

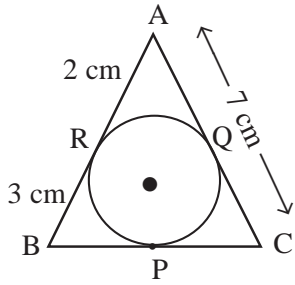
- i) Answer ALL the questions.
 ii) Each question carries $\frac{1}{2}$ Mark.
 iii) Answers are to be written in question paper only.
 iv) Marks will not be awarded in any case of any over writing and rewriting or erased answers.
 v) Write the CAPITAL LETTER (A, B, C, D) showing the correct answer for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

$$10 \times \frac{1}{2} = 5$$

18. If $\operatorname{cosec} \theta + \cot \theta = 25$ then $\operatorname{cosec} \theta - \cot \theta =$ ()
 A) $\frac{1}{5}$ B) 5 C) $\frac{1}{25}$ D) 0
19. In $\triangle ABC$, $\angle B = 90^\circ$, $\angle C = 30^\circ$ & $AC = 50$ m, then $AB =$ ()
 A) 25 m B) $25\sqrt{3}$ m C) $\frac{25}{\sqrt{3}}$ m D) $\frac{25\sqrt{3}}{3}$ m
20. Which of the following statement is false? ()
 A) $\sin 60^\circ + \cos 60^\circ = 1$
 B) $\sin 30^\circ \cdot \operatorname{cosec} 30^\circ = 1$
 C) $\sin \theta = \cos \theta \Rightarrow \theta = 45^\circ$
 D) $\operatorname{cosec}^2 60^\circ - \cot^2 60^\circ = 1$
21. If $P(E) + P(\bar{E}) = 1$ then E & (\bar{E}) are ()
 A) Equally likely events
 B) Impossible events
 C) Complementary events
 D) None of these
22. Diameter of a cylinder is 14 cm, height is 10 cm, then volume = ()
 A) 1616 cm^3 B) 220 cm^3 C) 440 cm^3 D) 1540 cm^3
23. Mean of 10 items is 15, if we write 32 instead of 23, then correct mean is ()
 A) 14 B) 14.1 C) 15.1 D) 15.8
24. Which of the following is false? ()
 A) Volume of cube = a^3
 B) Lateral surface area of cylinder = $2 \Pi rh$
 C) Curved surface area of cone = Πrl
 D) Volume of sphere = $\frac{2}{3} \Pi r^3$.
25. A circle is inscribed in square whose side is 10 cm then area of circle is ()
 A) $40 \Pi \text{ cm}^2$ B) $30 \Pi \text{ cm}^2$ C) $100 \Pi \text{ cm}^2$ D) $25 \Pi \text{ cm}^2$

26.

()



- A) 7 cm B) 8 cm C) 6 cm D) 9 cm

27. Which of the following shows probability?

()

- A) 115% B) $\frac{3}{6}$ C) $\frac{6}{3}$ D) -1.7

PART B – ANSWERS

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