

TVM

Tiruvallur District
Third Mid Term Test, March - 2024

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Time: 1.30 Hours

Standard 9
MATHS
PART - A

Marks: 50

1237

I. Choose the correct Answer.

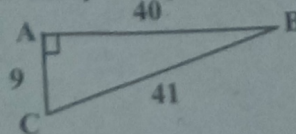
- If $\tan \theta = \cot \theta 37^\circ$, then the value of θ is
(a) 37° (b) 53° (c) 90° (d) 1°
- The value of $\frac{1 - \tan^2 45^\circ}{1 + \tan^2 45^\circ}$ is
(a) 2 (b) 1 (c) 2 (d) 3
- The semi-perimeter of a triangle having sides 15 cm, 20 cm and 25 cm is
(a) 60 cm (b) 45 cm (c) 30 cm (d) 15 cm
- If the ratio of the sides of two cubes are 2:3, then ratio of their surface areas will be
(a) 4:6 (b) 4:9 (c) 6:9 (d) 16:36
- The capacity of a water tank of dimensions 10m x 5m x 1.5m is
(a) 75 litres (b) 750 litres (c) 7500 litres (d) 75000 litres
- The mean of a set of seven numbers is 81. If one of the numbers is discarded, the mean of the remaining numbers is 78. The value of discarded number is
(a) 101 (b) 100 (c) 99 (d) 987
- The mean of the square of first 11 natural number is
(a) 26 (b) 46 (c) 48 (d) 52

PART - B

II. Answer any 5 Questions. Q.No. 14 is compulsory.

5x2=10

- From the given figure, find all the trigonometric ratios of angle B.



- Evaluate: $\sin 30^\circ + \cos 30^\circ$.
- If $\operatorname{cosec} A = \sec 34^\circ$, then find A.
- Find the Total Surface Area and Lateral Surface Area of the cube, whose side is 5cm.
- The dimensions of a match box are 6cm x 3.5 cm x 2.5 cm. Find the volume of a packet containing 12 such match boxes.
- In a class test in mathematics, 10 students scored 75 marks, 12 students scored 60 marks, 8 students scored 40 marks and 3 students scored 30 marks. Find the mean of their score.
- Find the area of an equilateral triangle whose perimeter is 180 cm.

PART - C

III. Answer any 5 questions. (Q.No.21 is compulsory)

5x5=25

- If $3 \cot A = 2$, then find the value of $\frac{4 \sin A - 3 \cos A}{2 \sin A + 3 \cos A}$
- Find the value of $\tan 15^\circ \tan 30^\circ \tan 45^\circ \tan 60^\circ \tan 75^\circ$.

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17. Three identical cubes of side 4 cm are joined end to end. Find the total surface area and lateral surface area of the new resulting cuboid.
18. A cubical tank can hold 64,000 litres of water. Find the length of its side in metres.
19. The average mark of 25 students was found to be 78.4. Later on, it was found that score of 96 was misread as 69. Find the correct mean of the marks.
20. Calculate the mean of the following distribution using Assumed Mean Method.

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	5	7	15	28	8

21. The lengths of sides of a triangular field are 28m, 15m and 41m. Calculate the area of the field. Find the cost of levelling the field at the rate of ₹20 per m².

PART - D**IV. Answer Any One.****1x8=8**

22. (a) Construct the circumcentre of the $\triangle ABC$ with $AB = 5\text{cm}$, $\angle A = 60^\circ$ and $\angle B = 80^\circ$. Also draw the circumcircle and find the circumradius of the $\triangle ABC$.

(OR)

- (b) Construct an isosceles triangle PQR where $PQ = PR$ and $\angle Q = 50^\circ$, $QR = 7\text{cm}$. Also draw its circumcircle.
