Q.P. SET CODE
A

MT - W

Seat No. | | | | | | | |

2017 ___ ___ 1100 - MT - W - GENERAL MATHEMATICS (71)GEOMETRY- SET - A (E)

Time : 2 Hours **(Pages 4)** **Max. Marks : 40**

Note :

(i) All questions are compulsory.

(ii) Use of calculator is not allowed.

Q.1. Solve ANY FIVE of the following : **5**

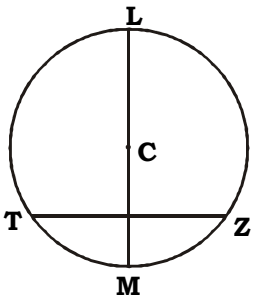
(i) If $\Delta ABC \sim \Delta MNP$ and BC : NP = 1 : 2, then find A (ΔABC) : A (ΔMNP).

(ii) If $\sin A = \frac{2}{7}$ then find cosec A.

(iii) Radius of a circle is 4 cm. Find the length of the largest chord of the circle.

(iv) Find the class mark(mid point) of the class 21-25.

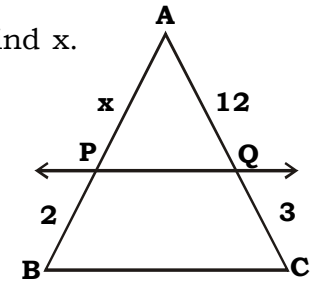
(v) In the adjoining figure,
Point 'C' is the centre of the circle.
Classify the following segments into radius, diameter and chord.
(a) seg TZ (b) seg LM



(vi) When a die is thrown once, write the sample space.

Q.2. Solve ANY FOUR of the following : **8**

(i) In aABC, line PQ || side BC. find x.



(ii) Two circles with the radii 7 cm and 9 cm touch externally. Find the distance between their centres.

(iii) The base of a right-angled triangle is 12 cm and its height is 5 cm then find the length of the hypotenuse.

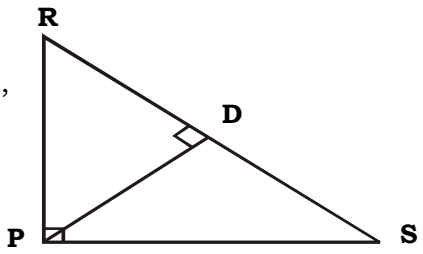
(iv) If the ratio of volumes of two spheres is 27:64, find the ratio of their radii.

(v) Convert the following classes into exclusive form :
11-15, 16-20, 21-25, 26-30.

(vi) Find the volume of a cuboid having its length, breadth and height 4 cm, 3 cm and 6 cm respectively.

Q.3. Solve ANY THREE of the following : **9**

(i) In a right-angled aRPS, ĎP = 90°, seg PD { RS. If RD = 4 and DS = 9, then find PD.



(ii) If tan A = $\frac{7}{24}$, find sin A + cos A.

(iii) Construct a incircle of an equilateral aPQR having side 5 cm.

(iv) The capacity of a cylindrical pickle jar is 1 litre and the area of its base is 100 cm². Find its height.

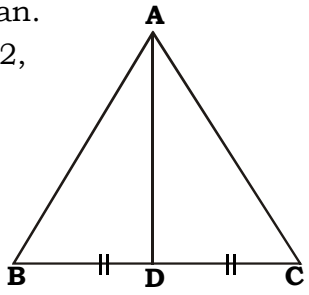
(v) The maximum bowling speed (kms/hour) of 33 players at a cricket coaching centre is given below :

Bowling speed (kms/hr)	85 - 99	100 - 114	115 - 129	130 - 144
No. of players	9	11	8	5

Find the modal bowling speed of the players.

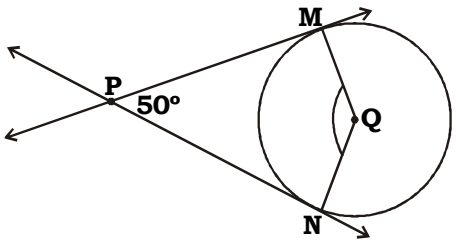
Q.4. Solve ANY TWO of the following : **8**

(i) In aABC, seg AD is a median. If AB = 11, AC = 17, BC = 12, then find value of AD.



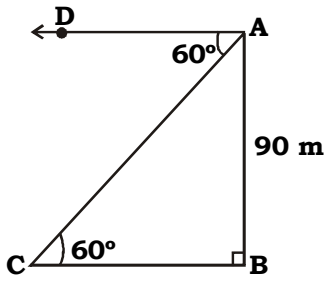
(ii) Draw a regular hexagon with side 5 cm and draw three concentric circles in it with centre as a centre point of the hexagon and of different radii.

(iii) Q is the centre of the circle and seg PN and seg PM are tangent segments to the circle at points N and M respectively. If ĎMPN = 50°, find ĎMQN.



Q.5. Solve ANY TWO of the following : **10**

(i) In the adjoining figure,
an observer at point A looking at a ship at point C from the top of a light house makes an angle of depression 60°. If the height of the light house is 90 meters, then find how far is that ship from the light house?



(ii) If the curved surface area of a cylinder is 1760 cm² and radius of its base is 14 cm, find its volume. (® = $\frac{22}{7}$)

(iii) Two dice are thrown. Find the probability that,
(a) A = the sum of numbers on the dice is at least 11.
(b) B = the sum of numbers on the dice is divisible by 9.
(c) C = the number on the upper face of the first die is greater than the number on the uppper face of the second die.
(d) D = the sum of the numbers on their upper faces is a perfect square.

Best Of Luck 👍