

Model Question Paper

Geometry - Part IV

10th Standard

Maths

Reg.No. :

I. Answer all the questions.

II. Use blue pen only.

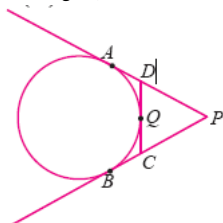
Time : 01:00:00 Hrs

Total Marks : 40

5 x 1 = 5

Part-A

- 1) If the tangents PA and PB from an external point P to circle with centre O are inclined to each other at an angle of 40° , then $\angle POA =$
(a) 70° (b) 80° (c) 50° (d) 60°
- 2) In the figure, PA and PB are tangents to the circle drawn from an external point P. Also CD is a tangent to the circle at Q. If PA = 8 cm and CQ = 3 cm, then PC is equal to

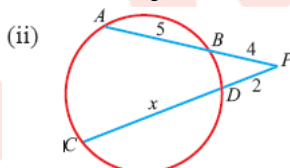


- (a) 11 cm (b) 5 cm (c) 24 cm (d) 38 cm
- 3) $\triangle ABC$ a right angled triangle where $\angle B = 90^\circ$ and $BD \perp AC$. If $BD = 8$ cm, $AD = 4$ cm, then CD is
(a) 24 cm (b) 16 cm (c) 32 cm (d) 8 cm
- 4) The areas of two similar triangles are 16cm^2 and 32cm^2 respectively. If the altitude of the first triangle is 3 cm, then the corresponding altitude of the other triangle is
(a) 6.5 cm (b) 6 cm (c) 4 cm (d) 4.5 cm
- 5) The perimeter of two similar triangles $\triangle ABC$ and $\triangle DEF$ are 36 cm and 24 cm respectively. If $DE = 10$ cm, then AB is
(a) 12 cm (b) 20 cm (c) 15 cm (d) 18 cm

Part-B

5 x 2 = 10

- 6) In a $\triangle ABC$, AD is the internal bisector of $\angle A$ meeting BC at D . If $AB = x$, $AC = x-2$, $BD = x+2$ and $DC = x-1$ find the value of x .
- 7) Check whether AD is the bisector of $\angle A$ of $\triangle ABC$ in each of the following. $AB = 6$ cm, $AC = 8$ cm, $BD = 1.5$ cm and $CD = 3$ cm.
- 8)



Find the value of x in each of the following diagrams.

Fig. 6.35

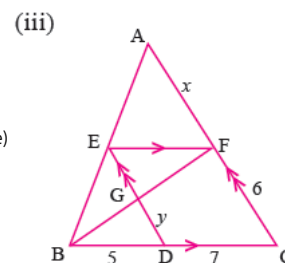
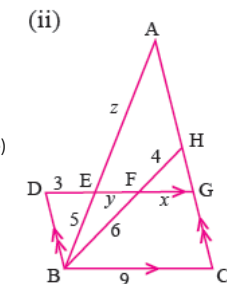
- 9) AB and CD are two chords of a circle which intersect each other internally at P . If $AP = 12$ cm, $AB = 15$ cm, $CP = PD$, then find CD
- 10) AB and CD are two chords of a circle which intersect each other externally at P . If $BP = 3$ cm, $CP = 6$ cm and $CD = 2$ cm, then find AB

Part-C

5 x 5 = 25

- 11) A lotus is 20 cm above the water surface in a pond and its stem is partly below the water surface. As the wind blew, the stem is pushed aside so that the lotus touched the water 40 cm away from the original position of the stem. How much of the stem was below the water surface originally?
- 12) A point O in the interior of a rectangle $ABCD$ is joined to each of the vertices A, B, C and D . Prove that $OA^2 + OC^2 = OB^2 + OD^2$
- 13) In a $\triangle ABC$, D and E are points on the sides AB and AC respectively such that $DE \parallel BC$. If $AD = 4x-3$, $BD = 3x-1$, $AE = 8x-7$ and $EC = 5x-3$, then find the value of x .
- 14)

Find the unknown values in each of the following figures. All lengths are given in centimeters. (All measures are not in scale)



15)

Find the unknown values in each of the following figures. All lengths are given in centimeters. (All measures are not in scale)

