

059989

Total Score : 50

Time : 2 hours

Instructions :

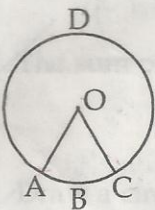
- (1) Read and understand the instructions related to each question before answering.
- (2) Logical explanation should be written wherever necessary.
- (3) Answer all questions.
- (4) The score is given against each question.

1. If $3 \sin^2 A = 2 \frac{1}{4}$ and A is an acute angle, then what is $\cos A$?

Score

1

2. In the figure, O is the centre of the circle. If $\angle AOC = 70^\circ$,



(a) What is the central angle of arc ABC ?

1/2

(b) What is the central angle of arc ADC ?

1/2

3. A long pole leans against a short wall making an angle of 45° with the level ground. The foot of the pole is 3 metres away along the ground from the bottom of the wall. What is the height of the wall if the top of the pole touches the top of the wall ?

1

4. The nth term of an Arithmetic Progression is $2 - 5n$.

(a) What is its common difference ?

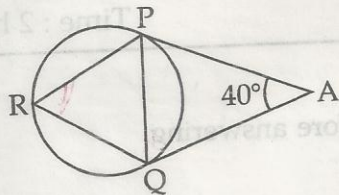
1/2

(b) What is its first term ?

1/2

[PTO]

5. In the figure, tangents at P and Q of a circle meet at A. $\angle A = 40^\circ$ and $AP = 5$ cm.

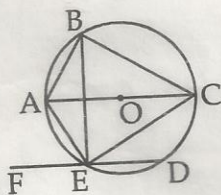


(a) Find $\angle AQP$

(b) Find AQ

(c) Find $\angle R$

6. In the figure chord ED is parallel to AC. O is the centre of the circle. $\angle CBE = 65^\circ$. Give reasons for each of the following statements.



(a) $\angle ABE = 25^\circ$ ()

(b) $\angle ACE = 25^\circ$ ()

(c) $\angle AEF = 65^\circ$ ()

7. $\sqrt{1 - \sin^2 A} = \frac{\sqrt{3}}{2}$, what is the value of :

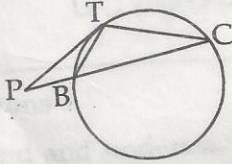
(a) $\sin A$?

(b) $\tan A$?

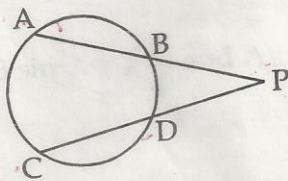
(c) $1 + \tan^2 A$?

~~So~~ So

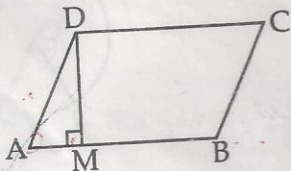
8. In the figure, $PB = BT$ and PT is a tangent to the circle. Prove that $PB \cdot PC = TC^2$.



9. In the figure, chords AB and CD produced intersect at P . If $AB = 6$ cm, $PB = 8$ cm, $PD = 7$ cm find the length of CD .



10. In the figure, $AB = 5$ cm, $\angle A = 30^\circ$, $AD = 3$ cm.

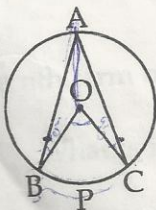


- (i) What is the length of DM ?
- (ii) What is the area of parallelogram $ABCD$?

1/2

1 1/2

11. In the figure, O is the centre of the circle. If $\angle B = 10^\circ$, $\angle C = 15^\circ$, find the central angle of arc BPC .



2

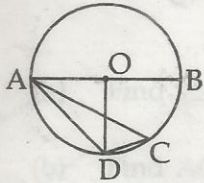
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Score

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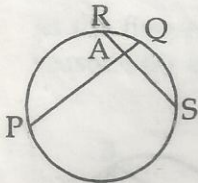
12. The length of the tangent from a point 15 cm away from the centre of a circle is 12 cm. What is the radius of the circle? 2

13. O is the centre of the circle and OD is perpendicular to AB. If C is any point on arc BD, find $\angle BAD$ and $\angle ACD$ 2



Class	Frequency
20 - 24	8
28 - 32	15
32 - 36	12
36 - 40	8
40 - 44	4
Total	50

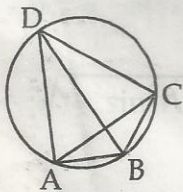
14. In the figure, chords PQ and RS intersect at A. Prove that $RA \cdot AS = QA \cdot AP$. 2



15. The mean of 10 scores is 12. What is the mean after removing one number 3 and then adding a number 8 to them? 2

16. Find the value of $3 \sin^2 30^\circ - 4 \cos^2 60^\circ + \sin^2 45^\circ$. 2

17. In the figure, $\angle BAC = 40^\circ$, $\angle ADB = 35^\circ$, find $\angle ABC$. 2



18. If the sum of three consecutive terms of an Arithmetic Progression is 12 and the product of these terms is 60, find the three terms. 3

[PTO]

Score

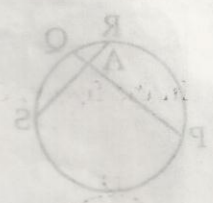
19. Calculate the mean :

Class	Frequency
20 - 24	8
24 - 28	3
28 - 32	15
32 - 36	12
36 - 40	8
40 - 44	4
Total	50

AEV Vhd.

20. A tower is 70 metres high. From the top of it, the angles of depression of the top and the bottom of a tree are found to be 45° and 60° respectively.

- (a) Find the distance of the tree from the tower.
- (b) What is the height of the tree ?



21. The sum of the first 13 terms of an Arithmetic Progression is 416. Calculate its 7th term.

22. Draw a circle of radius 3 cm and mark a point P which is 7 cm away from the centre. Draw the tangents from P to the circle and measure them.

23. Pupils in a school are arranged to stand in 20 rows in the school ground for a function. In each row, there are 5 pupils more than the number in the immediate front row. If the front row consists of 30 pupils, find the total number of pupils.

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