

Chapter 10 Circles

UNIT TEST

Duration: 1 hour

Marks: 25

SECTION A

Each carry 1 mark

1. How many tangents can a circle have from a point lying inside the circle?

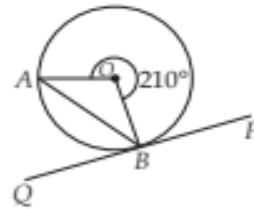
- a) 2 b) infinitely many c) 1 d) none of these

2. Two concentric circles of radii a and b where $a > b$, are given, the length of a chord of the larger circle which touches the other circle is

- a) $\sqrt{a^2 - b^2}$ b) $2\sqrt{a^2 - b^2}$ c) $\sqrt{a^2 + b^2}$ d) $2\sqrt{a^2 + b^2}$

3. If AB is chord of a circle with centre O & PQ is a tangent to the circle at B with reflex $\angle AOB = 210^\circ$, then $\angle ABQ =$

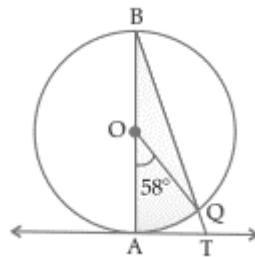
- a) 105° b) 150°
c) 210° d) 75°



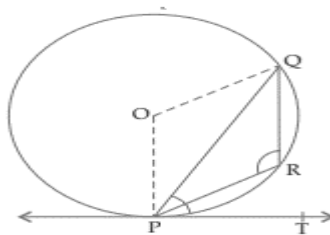
SECTION B

Each carry 2 marks

4. In given figure, AB is the diameter of a circle with center O and AT is a tangent. If $\angle AOQ = 58^\circ$, find $\angle ATQ$.



5. In figure, PQ is a chord of a circle centre O and PT is a tangent. If $\angle QPT = 60^\circ$, find $\angle PRQ$.



6. A circle touches all the four sides of a quadrilateral $ABCD$. Prove that $AB + CD = BC + DA$.

SECTION C

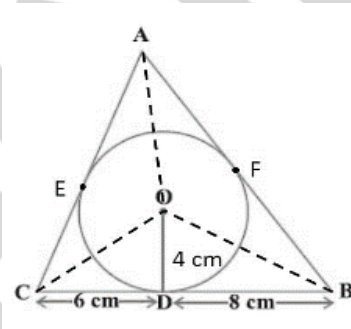
Each carry 3 marks

7. Prove that the lengths of two tangents drawn from an external point to a circle are equal.
8. Two tangents PQ and PR are drawn from an external point to a circle with centre O. Prove that QORP is a cyclic quadrilateral.

SECTION D

Each carry 5 marks

9. A $\triangle ABC$ is drawn to circumscribe a circle of radius 4 cm such that segments BD and DC into which BC is divided are of lengths 8 cm and 6 cm respectively. Find the sides AB and AC.



10. Two tangents making an angle of 120° with each other are drawn to a circle of radius 6 cm. Find the length of each tangent.

UNIT TEST

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|---------------------------|------------------------------|
| 1. d) none of these | 7. Proof |
| 2. b) $2\sqrt{a^2 - b^2}$ | 8. Proof |
| 3. d) 75° | 9. $\angle AOB = 90^\circ$. |
| 4. 61° | 10. $2\sqrt{3}\text{cm}$ |
| 5. 120° | |
| 6. $AB + CD = BC + DA$. | |