

Class : IX<sup>TH</sup>

Date :

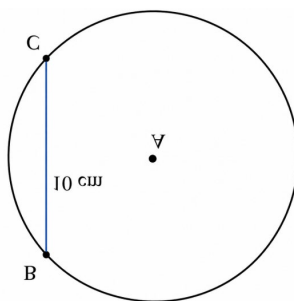
Subject : MATHS

DPP No. : 1

## I'M UP & DOWN, & ROUND & ROUND

### Multiple Choice Questions

- Q 1. The longest chord of a circle is called:  
(a) tangent (b) diameter  
(c) radius (d) arc
- Q 2. The line joining the centre of a circle to the mid-point of a chord is always  
(a) parallel to the chord (b) perpendicular to the chord  
(c) equal to the chord (d) tangent to the chord
- Q 3. Which of the following statements is not correct?  
(a) Infinitely many circles can pass through the points  $A$ ,  $B$  and  $C$ .  
(b) Infinitely many circles can pass through the points  $A$  and  $B$ .  
(c) Infinitely many circles can pass through the point  $A$ .  
(d) Infinitely many circles can pass through the points  $B$  and  $C$ .
- Q 4. How many circle(s) can be constructed that pass through all 3 vertices of  $\triangle PQR$  ?  
(a) 4 (b) 3  
(c) Infinitely many (d) 1
- Q5. A circle with centre  $A$  and chord  $BC$  is given in the figure. If radius of the circle is 13 cm , what is distance of the chord from the centre?

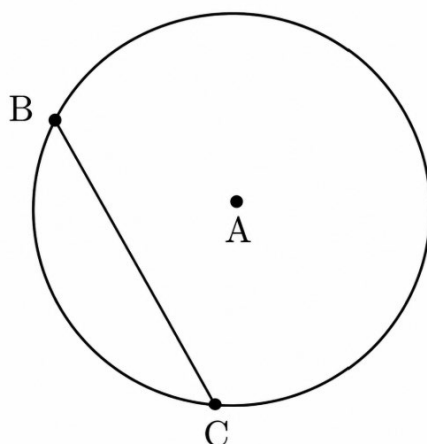


- (a) 10 cm  
(c) 12 cm

- (b) 13 cm  
(d) 5 cm



- Q 6. A circle is given with centre  $A$  and radius 10 cm . What is the length of  $BC$  if it is 8 cm away from the centre?



- (a) 6 cm  
(b) 12 cm  
(c) 5 cm  
(d) 4 cm

#### Assertion-Reason Based Questions

The following questions are Assertion and Reason based questions. Two statements are given, one labelled as Assertion ( $A$ ) and the other is labelled as Reason ( $R$ ). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.

- (a) Both  $A$  and  $R$  are true, and  $R$  is the correct explanation of  $A$  .  
(b) Both  $A$  and  $R$  are true, but  $R$  is not the correct explanation of  $A$  .  
(c)  $A$  is true, but  $R$  is false.  
(d)  $A$  is false, but  $R$  is true.
- Q7. Assertion ( $A$ ) : If two chords  $AB$  and  $CD$  of a circle are each at a distance of 4 cm from the centre, then  $AB = CD$ .  
Reason ( $R$ ) : Two chords equidistant from the centre of a circle are equal in length.
- Q8. Assertion ( $A$ ) : Distance of a chord of length 16 cm in a circle of radius 10 cm , from the centre, is 6 cm .  
Reason ( $R$ ) : Perpendicular from centre of the circle to chord bisects the chord.
- Q9. Assertion ( $A$ ) :  $A$ ,  $B$  and  $C$  are three non-collinear points in a plane, then two different circles can pass through these three non-collinear points.  
Reason ( $R$ ) : One and only one circle can pass through three non-collinear points.



### Short Answer Questions

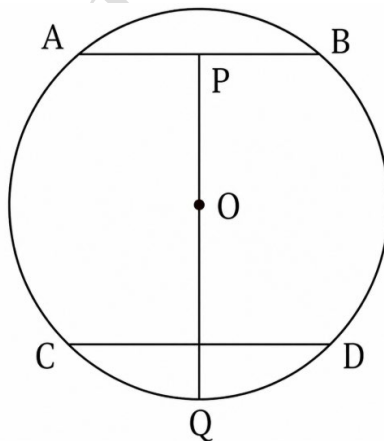
Q 10. State whether the following statements are true or false:

- (i) If two congruent circles with centres  $O$  and  $O'$  intersect at two points  $A$  and  $B$ , then  $\angle AOB = \angle AO'B$ .
- (ii) A circle of radius 4 cm can be drawn through two points  $A$  and  $B$  such that
- (iii) If two chords  $AB$  and  $CD$  of a circle are each at a distance of 7.5 cm from the centre, then  $AB = CD$ .
- (iv) Two chords of a circle of length 10 cm and 8 cm are at the distances  $x$  cm and  $y$  cm respectively from the centre, where  $x > y$ .
- (v) If two chords  $AB$  and  $AC$  of a circle with centre  $O$  are on opposite side of  $OA$ , then  $\angle OAB = \angle OAC$ .

Q11. If arcs  $AXB$  and arcs  $CYD$  of a circle are congruent, then find the ratio of  $AB$  and  $CD$ .

Q 12. Find the length of a chord which is at a distance of 5 cm from the centre of a circle of radius 13 cm.

Q 13. In the given figure, radius of the circle is 5 cm,  $AB = 6$  cm and  $CD = 8$  cm. If  $AB \parallel CD$ , then determine  $PQ$ .

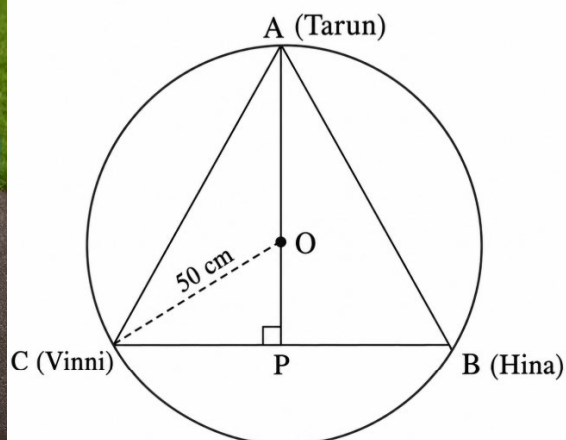


Q 14.  $AB$  and  $CD$  are two chords of a circle with centre  $O$  at distances of 6 cm and 8 cm respectively. If the radius of the circle is 10 cm, find the lengths of the chords.



## CASE STUDY BASED QUESTIONS

Q 15. Tarun, Hina and Vinni are best friends. They usually go to the park in the evening to play. One day in the evening, they were sitting on a Merry-go-round at  $A, B$  and  $C$  respectively (say) and passing a ball to each other. The seats on it was at equal distances and radius of its base circle is 50 cm .



Based on the above information, answer the following questions:

- (i) Which type of the triangle is formed by them?
- (ii) If distance between Vinni and Hina is  $2x$  cm, then find the value of  $CP$ .
- (iii) Find distance between  $A$  and  $P$  in terms of  $x$ .
- (iv) Find the value of  $x$ .
- (v) If the distances between any two of them is  $m\sqrt{3}$  cm, then find  $m$ .

### ANSWER KEY

- |     |         |           |           |                                   |          |     |
|-----|---------|-----------|-----------|-----------------------------------|----------|-----|
| 1.b | 2.b     | 3.a       | 4.d       | 5.c                               | 6.b      | 7.a |
| 8.a | 9.d     |           |           |                                   |          |     |
| 10. | i) True | ii) True  | iii) True | iv) False                         | v) False |     |
| 11. | 1:1     | 12. 24 cm | 13. 7 cm. | 14. $AB = 16$ cm and $CD = 12$ cm |          |     |

15. (i) Equilateral triangle  
 (ii)  $x$  cm  
 (iii)  $\sqrt{3}x$  cm  
 (iv)  $x = 25\sqrt{3}$   
 (v)  $m = 50$



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