

**Q1.** If the chord of 6 cm in length of a circle makes an angle of  $45^\circ$  with tangent drawn at it's vertex then what will be the radius of that circle ?

- (a)  $6\sqrt{2}$  cm (b) 5 cm  
(c)  $3\sqrt{2}$  cm (d) 6 cm

**Q2.** The radius of a circle is 13 cm and the distance of its chord XY from centre is 12 cm. Then length of that chord is ?

- (a) 15 cm (b) 12 cm  
(c) 10 cm (d) 20 cm

**Q3.** Suppose in  $\triangle ABD$ , angle  $ADB = 20^\circ$  and C is a point on BD such as  $AB = AC$  and  $CD = CA$ . Then what will be the measure of angle ABC ?

- (a)  $40^\circ$  (b)  $45^\circ$   
(c)  $60^\circ$  (d)  $30^\circ$

**Q4.** If G is the centroid and AD is a median of a triangle ABC, if AD is 12 cm then AG is?

- (a) 10 cm (b) 6 cm  
(c) 4 cm (d) 8 cm

**Q5.**  $\triangle ABC$  is a right angled triangle. AD is a perpendicular to hypotenuse BC. If  $AC = 2 AB$ , then value of BD is equal to?

- (a)  $\frac{BC}{4}$  (b)  $\frac{BC}{5}$   
(c)  $\frac{BC}{2}$  (d)  $\frac{BC}{3}$

**Q6.** In a right angled triangle ABC,  $AB = 2.5$  cm,  $\cos B = 0.5$ ,  $\angle ACB = 90^\circ$ . Length of side AC in cm is equals to ?

- (a)  $\frac{5}{4}\sqrt{3}$  (b)  $\frac{5}{16}\sqrt{3}$   
(c)  $5\sqrt{3}$  (d)  $\frac{5}{2}\sqrt{3}$

**Q7.** Two circles of radii 4 cm and 9 cm respectively touch externally at a point and a common tangent touches them at points P and Q respectively. Then what will be the area of the square with side PQ ?

- (a)  $97 \text{ cm}^2$  (b)  $194 \text{ cm}^2$   
(c)  $72 \text{ cm}^2$  (d)  $144 \text{ cm}^2$

**Q8.** Two tangents are drawn from point P to a circle at points A and B. O is the centre of circle. Then if angle  $AOP = 60^\circ$ , then angle  $APB = ?$

- (a)  $120^\circ$  (b)  $90^\circ$   
(c)  $60^\circ$  (d)  $30^\circ$

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**Q9.** AB is the diameter of a circle with centre O. CD is a chord which is equal to radius in length. AC and BD are produced to meet at P. Then angle APB will be of?

- (a)  $30^\circ$  (b)  $60^\circ$   
(c)  $90^\circ$  (d)  $120^\circ$

**Q10.** If G be the centroid of  $\triangle ABC$  and if  $AG = BC$  then what will be the measure of angle BGC?

- (a)  $45^\circ$  (b)  $90^\circ$   
(c)  $63^\circ$  (d)  $75^\circ$

**Q11.** PQ is a straight common tangent to two circles touching each other at A. If  $r_1$  and  $r_2$  are radii of circles then  $PQ^2$  is?

- (a)  $r_1 r_2$  (b)  $2r_1 r_2$   
(c)  $3r_1 r_2$  (d)  $4r_1 r_2$

**Q12.** Two circles each of radii r cut each other and passes through others centre. Then length of common chord is?

- (a) r (b)  $\sqrt{3}r$   
(c)  $\frac{\sqrt{3}}{2}r$  (d)  $\sqrt{5}r$

**Q13.** Tangents drawn at two points P and Q lying on circumference of a circle cut each other at A if angle PAQ =  $68^\circ$ , then angle APQ is ?

- (a)  $56^\circ$  (b)  $68^\circ$   
(c)  $28^\circ$  (d)  $34^\circ$

**Q14.** In  $\triangle ABC$  internal angle bisector of angle C cuts AB at point D. In this  $AB \neq AC$  and E is a point on CD such that  $AE = AD$ . If angle ABC =  $50^\circ$  then angle CAE is equal to ?

- (a)  $40^\circ$  (b)  $50^\circ$   
(c)  $30^\circ$  (d)  $25^\circ$

**Q15.** If  $\sin \theta + \operatorname{cosec} \theta = 2$ , then the value of  $\sin^7 \theta + \operatorname{cosec}^7 \theta$  is ?

- (a) 2 (b) 0  
(c) 1 (d)  $1/2$

**Q16.** ABC is a triangle and P is any point on AB such that angle ACP = angle ABC, if AC = 9 cm, CP = 12 cm and BC = 15 cm, then AP is equal to?

- (a) 4.5 cm (b) 7.2 cm  
(c) 9.7 cm (d) 10.1 cm

**Q17.** The lengths of perpendiculars drawn from any point in the interior of an equilateral triangle to the respective sides are 6cm, 8cm, and 10cm. The length of each side of the triangle is?

- (a) 20 cm (b) 21 cm  
(c)  $16\sqrt{3}$  cm (d) 20 cm

Q18. In a right angled  $\triangle ABC$ , angle  $ABC = 90^\circ$ ;  $BN \perp AC$ ,  $AB = 6$  cm,  $AC = 10$  cm. Then  $AN : NC$  is?

- (a) 9 : 16  
(b) 6 : 13  
(c) 14 : 19  
(d) 20 : 21

Q19. In a  $\triangle ABC$  a line  $DE$  is drawn parallel to  $BC$ . If  $\frac{AD}{DB} = \frac{2}{3}$  then find the ratio of area of  $\triangle ADE$  & Area of  $DECB$ ?

- (a) 4 : 21  
(b) 21 : 3  
(c) 21 : 25  
(d) 4 : 19

Q20. In a  $\triangle ABC$ ,  $D$  is the midpoint of line  $BC$  and  $E$  is the mid point of  $AD$ . Then find the ratio of area of  $\triangle BEA$  and  $\triangle ABC$ ?

- (a) 7 : 1  
(b) 6 : 1  
(c) 5 : 1  
(d) 1 : 4

Q21. In a  $\triangle ABC$ ,  $BD$  and  $CE$  are two medians which intersects each other at 'O'.  $AO$  intersect the line  $ED$  at  $M$ . Find the ratio of  $AM : MO$ ?

- (a) 3 : 1  
(b) 1 : 5  
(c) 3 : 8  
(d) 5 : 8

Q22.  $I$  is the incentre of a triangle  $ABC$ . If angle  $ACB = 55^\circ$ , angle  $ABC = 65^\circ$  then the value of angle  $BIC$  is?

- (a) 130  
(b) 150  
(c) 120  
(d) 110

Q23. In  $\triangle ABC$ , angle  $B = 60^\circ$  and angle  $C = 40^\circ$ . If  $AD$  and  $AE$  be respectively the internal bisector of angle  $A$  and perpendicular on  $BC$ , then the measure of angle  $DAE$  is?

- (a) 50  
(b) 10  
(c) 30  
(d) 40

Q24. The angle between the external bisectors of two angles of a triangle is  $60^\circ$ . Then the third angle of the triangle is?

- (a) 60  
(b) 70  
(c) 80  
(d) 90

Q25.  $AD$  is the median of a triangle  $ABC$  and  $O$  is the centroid such that  $AO = 10$  cm. The length of  $OD$  (in cm) is?

- (a) 9 cm  
(b) 6 cm  
(c) 2 cm  
(d) 5 cm

Q26. In a  $\triangle ABC$ ,  $BD$  &  $CE$  are the two medians which intersect each other at right angle.  $AB = 22$ ,  $AC = 19$ , find  $BC = ?$

- (a) 11 cm  
(b) 12 cm  
(c) 14 cm  
(d) 13 cm

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**Q27. In  $\triangle ABC$ , AD, BE and CF are the altitudes in the ratio 1 : 2 : 3 respectively, then the ratio of AB : BC : CA is?**

- (a) 3 : 2 : 1 (b) 1 : 2 : 3  
(c) 1 : 4 : 9 (d) 2 : 6 : 3

**Q28. In  $\triangle ABC$ , draw  $BE \perp AC$  and  $CF \perp AB$  and the perpendicular BE and CF intersect at the point O. If angle BAC =  $70^\circ$ , then the value of angle BOC is?**

- (a) 115 (b) 110  
(c) 120 (d) 135

**Q29. Let ABC be an equilateral triangle and AX, BY, CZ be the altitudes. Then the right statement out of the four given responses is?**

- (a)  $AX = BY = CZ$  (b)  $AX \neq BY \neq CZ$   
(c)  $AX = BY \neq CZ$  (d) None of these

**Q30. In the given figure, AD is the Internal bisector of  $\angle A$ , If  $BD = 4$  cm,  $DC = 3$  cm and  $AB = 6$  cm, find AC?**

- (a) 4.5 cm (b) 6.5 cm  
(c) 7.5 cm (d) 8.5 cm

