

# QB365 Question Bank Software Study Materials

## Geometry 50 Important 1 Marks Questions With Answers (Book Back and Creative)

10th Standard

Maths

Total Marks : 50

### Multiple Choice Question

50 x 1 = 50

1) If in triangles ABC and EDF,  $\frac{AB}{DE} = \frac{BC}{FD}$  then they will be similar, when

- (a)  $\angle B = \angle E$  (b)  $\angle A = \angle D$  (c)  $\angle B = \angle D$  (d)  $\angle A = \angle F$

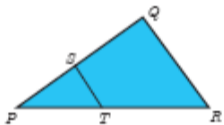
2) In  $\triangle LMN$ ,  $\angle L = 60^\circ$ ,  $\angle M = 50^\circ$ . If  $\triangle LMN \sim \triangle PQR$  then the value of  $\angle R$  is

- (a)  $40^\circ$  (b)  $70^\circ$  (c)  $30^\circ$  (d)  $110^\circ$

3) If  $\triangle ABC$  is an isosceles triangle with  $\angle C = 90^\circ$  and  $AC = 5$  cm, then  $AB$  is

- (a) 2.5 cm (b) 5 cm (c) 10 cm (d)  $5\sqrt{2}$  cm

4) In a given figure  $ST \parallel QR$ ,  $PS = 2$  cm and  $SQ = 3$  cm. Then the ratio of the area of  $\triangle PQR$  to the area  $\triangle PST$  is



- (a)  $25 : 4$  (b)  $25 : 7$  (c)  $25 : 11$  (d)  $25 : 13$

5) The perimeters of two similar triangles  $\triangle ABC$  and  $\triangle PQR$  are 36 cm and 24 cm respectively. If  $PQ = 10$  cm, then the length of  $AB$  is

- (a)  $6\frac{2}{3}$  cm (b)  $\frac{10\sqrt{6}}{3}$  cm (c)  $66\frac{2}{3}$  cm (d) **15 cm**

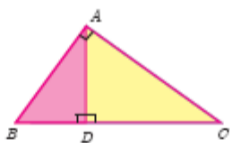
6) If in  $\triangle ABC$ ,  $DE \parallel BC$ ,  $AB = 3.6$  cm,  $AC = 2.4$  cm and  $AD = 2.1$  cm then the length of  $AE$  is

- (a) **1.4 cm** (b) 1.8 cm (c) 1.2 cm (d) 1.05 cm

7) In a  $\triangle ABC$ ,  $AD$  is the bisector  $\angle BAC$ . If  $AB = 8$  cm,  $BD = 6$  cm and  $DC = 3$  cm. The length of the side  $AC$  is

- (a) 6 cm (b) **4 cm** (c) 3 cm (d) 8 cm

8) In the adjacent figure  $\angle BAC = 90^\circ$  and  $AD \perp BC$  then

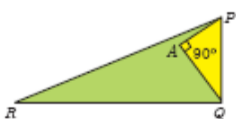


- (a)  $BD \cdot CD = BC^2$  (b)  $AB \cdot AC = BC^2$  (c)  **$BD \cdot CD = AD^2$**  (d)  $AB \cdot AC = AD^2$

9) Two poles of heights 6 m and 11 m stand vertically on a plane ground. If the distance between their feet is 12 m, what is the distance between their tops?

- (a) **13 m** (b) 14 m (c) 15 m (d) 12.8 m

10) In the given figure,  $PR = 26$  cm,  $QR = 24$  cm,  $\angle PAQ = 90^\circ$ ,  $PA = 6$  cm and  $QA = 8$  cm. Find  $\angle PQR$



- (a)  $80^\circ$  (b)  $85^\circ$  (c)  $75^\circ$  (d)  **$90^\circ$**

11) A tangent is perpendicular to the radius at the

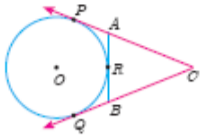
- (a) centre (b) **point of contact** (c) infinity (d) chord

12) How many tangents can be drawn to the circle from an exterior point?

- (a) one (b) **two** (c) infinite (d) zero

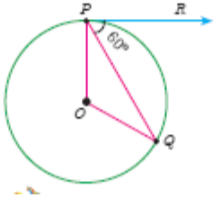
- 13) The two tangents from an external points P to a circle with centre at O are PA and PB. If  $\angle APB = 70^\circ$  then the value of  $\angle AOB$  is  
 (a)  $100^\circ$  (b)  **$110^\circ$**  (c)  $120^\circ$  (d)  $130^\circ$

- 14) In figure CP and CQ are tangents to a circle with centre at O. ARB is another tangent touching the circle at R. If CP = 11 cm and BC = 7 cm, then the length of BR is



- (a) 6 cm (b) 5 cm (c) 8 cm (d) **4 cm**

- 15) In figure if PR is tangent to the circle at P and O is the centre of the circle, then  $\angle PQR$  is



- (a)  **$120^\circ$**  (b)  $100^\circ$  (c)  $110^\circ$  (d)  $90^\circ$

- 16) The first theorem in Mathematics is \_\_\_\_\_

- (a) Thales Theorem (b) Angle bisector Theorem (c) **Pythagoras Theorem** (d) Alternative segment Theorem

- 17) If triangle PQR is similar to triangle LMN such that  $4PQ = LM$  and  $QR = 6$  cm then MN is equal to \_\_\_\_\_

- (a) 12 cm (b) **24 cm** (c) 10 cm (d) 36 cm

- 18) In the given figure  $DE \parallel AC$  which of the following is true.

- (a)  $x = \frac{ay}{b+a}$  (b)  $x = \frac{a+b}{ay}$  (c)  **$x = \frac{ay}{b-a}$**  (d)  $\frac{x}{y} = \frac{a}{b}$

- 19) S and T are points on sides PQ and PR respectively of  $\Delta PQR$ . If  $PS = 3$  cm,  $QS = 6$  cm,  $PT = 5$  cm, and  $TR = 10$  cm and then QR

- (a) 4 ST (b) 5 ST (c) **3 ST** (d) 3 QR

- 20) In the given figure  $DE \parallel BC$ :  $BD = x - 3$ ,  $BA = 2x$ ,  $CE = x - 2$ , and  $AC = 2x + 3$ , Find the value of x.

- (a) **3** (b) 6 (c) 9 (d) 12

- 21) The ratio of the areas of two similar triangles is equal to \_\_\_\_\_

- (a) The ratio of their corresponding sides (b) The cube of the ratio of their corresponding sides  
 (c) The ratio of their corresponding altitudes (d) **The square of the ratio of their corresponding sides**

- 22) If ABC is a triangle and AD bisects A,  $AB = 4$  cm,  $BD = 6$  cm,  $DC = 8$  cm then the value of AC is \_\_\_\_\_

- (a)  **$\frac{16}{3}$  cm** (b)  $\frac{32}{3}$  cm (c)  $\frac{3}{16}$  cm (d)  $\frac{1}{2}$  cm

- 23) In a triangle, the internal bisector of an angle bisects the opposite side. Find the nature of the triangle.

- (a) right angle (b) equilateral (c) scalene (d) **isosceles**

- 24) The height of an equilateral triangle of side a is

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

- 25) The perimeter of a right triangle is 36 cm. Its hypotenuse is 15 cm, then the area of the triangle is \_\_\_\_\_

- (a)  $108$  cm<sup>2</sup> (b)  **$54$  cm<sup>2</sup>** (c)  $27$  cm<sup>2</sup> (d)  $216$  cm<sup>2</sup>

- 26) If the angle between two radii of a circle is  $^\circ$ , the angle between the tangents at the end of the radii is \_\_\_\_\_

- (a)  **$50^\circ$**  (b)  $90^\circ$  (c)  $40^\circ$  (d)  $70^\circ$

- 27) In figure  $\angle OAB = 60^\circ$  and  $OA = 6\text{cm}$  then radius of the circle is \_\_\_\_\_  
 (a)  $\frac{3}{2}\sqrt{3}\text{cm}$  (b) 2 cm (c)  $3\sqrt{3}\text{cm}$  (d)  $2\sqrt{3}\text{cm}$
- 28) Two concentric circles if radii  $a$  and  $b$  where  $a > b$  are given. The length of the chord of the circle which touches the smaller circle is \_\_\_\_\_  
 (a)  $\sqrt{a^2 - b^2}$  (b)  $\sqrt{a^2 - b^2}$  (c)  $\sqrt{a^2 + b^2}$  (d)  $2\sqrt{a^2 + b^2}$
- 29) Three circles are drawn with the vertices of a triangle as centres such that each circle touches the other two if the sides of the triangle are 2cm,3cm and 4 cm. find the diameter of the smallest circle.  
 (a) 1 cm (b) 3 cm (c) 5 cm (d) 4 cm
- 30) Sides of two similar triangle are in the ratio 4 : 9. Areas of these triangles are in the ratio \_\_\_\_\_  
 (a) 2 : 3 (b) 4 : 9 (c) 81 : 16 (d) 16 : 81
- 31) The areas of two similar triangles are respectively  $9\text{ cm}^2$  and  $16\text{ cm}^2$ . The ratio the of their corresponding sides is \_\_\_\_\_  
 (a) 3 : 4 (b) 4 : 3 (c) 2 : 3 (d) 4 : 5
- 32) If  $\triangle ABC$  and  $\triangle DEF$  are similar triangles such that  $\angle A = 47^\circ$  and  $\angle B = 83^\circ$ , then  $\angle F =$   
 (a)  $50^\circ$  (b)  $60^\circ$  (c)  $70^\circ$  (d)  $80^\circ$
- 33) In  $\triangle ABC$ , a line  $XY$  parallel to  $BC$  at  $AB$  at  $X$  and  $AC$  at  $Y$ . If  $BY$  bisects  $\angle XYC$ , then \_\_\_\_\_  
 (a)  $BC = CY$  (b)  $BC = BY$  (c)  $BC \neq CY$  (d)  $BC \neq BY$
- 34) In  $\triangle ABC$ ,  $D$  and  $E$  are points on side  $AB$  and  $AC$  respectively such that  $DE \parallel BC$  and  $AD : DB = 3 : 1$ . If  $EA = 3.3\text{cm}$  then  $AC =$   
 (a) 1.1 cm (b) 4 cm (c) 4.4 cm (d) 5.5 cm
- 35) In  $\triangle ABC$  and  $\angle A = \angle E = 40^\circ$ ,  $AB : ED = AC : EF$  and  $\angle F = 65^\circ$ , then  $\angle B =$  \_\_\_\_\_  
 (a)  $35^\circ$  (b)  $65^\circ$  (c)  $75^\circ$  (d)  $85^\circ$
- 36) Find the value of  $x$  for which  $DE \parallel AB$  is \_\_\_\_\_  
  
 (a) 4 (b) 1 (c) 2 (d) 3
- 37) In an equilateral triangle  $\triangle ABC$ , if  $AD \perp BC$  then  
 (a)  $2AB^2 = 3AD^2$  (b)  $4AB^2 = 3AD^2$  (c)  $3AB^2 = 4AD^2$  (d)  $3AB^2 = 2AD^2$
- 38) The length of the hypotenuse of an isosceles right triangle whose one side is  $4\sqrt{2}\text{ cm}$  is  
 (a) 12 cm (b) 8 cm (c)  $8\sqrt{2}\text{ cm}$  (d)  $12\sqrt{2}\text{ cm}$
- 39)  $PQ$  is a tangent to a circle with center 'O' at the point R if  $\triangle OPQ$  is an isosceles triangle, then  $\angle OQP$  is \_\_\_\_\_  
 (a)  $30^\circ$  (b)  $45^\circ$  (c)  $60^\circ$  (d)  $90^\circ$
- 40) From a point Q, the length of the tangent to a circle is 24 cm and the distance of a Q from, the center is 25 cm. The radius of the circle is \_\_\_\_\_  
 (a) 7 cm (b) 12 cm (c) 15 cm (d) 24.5 cm
- 41) If triangle  $PQR$  is similar to  $LMN$  such that  $4PQ = LM$  and  $QR = 6\text{ cm}$ , then  $MN$  is equal to \_\_\_\_\_  
 (a) 12 cm (b) 24 cm (c) 10 cm (d) 36 cm
- 42) S and T are points on sides  $PQ$  and  $PR$  respectively of  $PQR$ . If  $PS = 3\text{ cm}$ ,  $SQ = 6\text{ cm}$ ,  $PT = 5\text{ cm}$  and  $TR = 10\text{ cm}$ , then  $QR =$  \_\_\_\_\_

(a) 4ST (b) 5ST **(c) 3ST** (d) 3QR

43) The ratio of the areas of two similar triangles is equal to \_\_\_\_\_

- (a) The ratio of their corresponding sides (b) The cube of the ratio of their corresponding sides  
(c) The ratio of their corresponding altitudes **(d) The square of the ratio of their corresponding sides**

44) In a triangle, the internal bisector of an angle bisects the opposite side. Find the nature of the triangle.

- (a) right angle **(b) equilateral** (c) scalene (d) isosceles

45) The height of an equilateral triangle whose side a units is \_\_\_\_\_

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

46) The perimeter of a right triangle is 40 cm. Its hypotenuse is 15 cm, then the area of the triangle is \_\_\_\_\_

- (a) 100 cm<sup>2</sup>** (b) 200 cm<sup>2</sup> (c) 160 cm<sup>2</sup> (d) 225 cm<sup>2</sup>

47) A line which intersects a circle at two distinct points is called \_\_\_\_\_

- (a) point of contact (b) secant **(c) diameter** (d) tangent

48) Two concentric circles of radii a and b where  $a > b$  are given. The length of the chord of the larger circle which touches the smaller circle is \_\_\_\_\_

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

49) \_\_\_\_\_ is a cevian that divides the angle, into two equal halves.

- (a) parallel line** (b) perpendicular line (c) angular bisector (d) perpendicular bisector

50) The perimeter of a triangle formed by the points (0, 0), (1, 0) and (0, 1) is:

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