**GEOMETRY**

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|  | **EQUILATERAL TRIANGLES** |
| 1. | **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) 4 (b) 5 (c) 6 (d) 8 |
| 2. | **ABC is an equilateral triangle. P and Q are two points on  and  respectively such that . If  = 5 cm the area of ΔAPQ is:**  (a)  sq. cm (b)  sq. cm  (c)  sq. cm (d)  sq. cm |
| 3. | **If the orthocenter and the centroid of a triangle are the same, then the triangle is:**  (a) Scalene (b) Right angled  (c) Equilateral (d) Obtuse angled |
| 4. | **If area of an equilateral triangle is a and height b, then value of  is:**  (a) 3 (b)  (c)  (d) |

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| **Q** | **ISOSCELES TRIANGLES** |
| 1. | **ABC is an isosceles triangle such that AB = AC and  = 35°. AD is the median to the base BC. Then  is**:  (a) 70° (b) 35° (c) 110° (d) 55° |
| 2. | **ABC is an isosceles triangle with AB = AC. A circle through B touching AC at the middle point intersects AB at P. Then AP : AB is:**  (a) 4 : 1 (b) 2 : 3 (c) 3 : 5 (d) 1 : 4 |
| 3. | **Δ ABC is an isosceles triangle and  =  = 2a unit  = a unit. Draw , and find the length of .**  (a)  a unit (b)  a unit  (c)  a unit (d)  a unit C =  PB |
| 4. | **An isosceles triangle ABC is right-angled at B.D is a point inside the triangle ABC. P and Q are the feet of the perpendiculars drawn from D on the sides AB and AC respectively of Δ ABC. If AP = a cm, AQ = b cm and  = 15°, sin 75° =**  (a)  (b)  (c)  (d) |
| 5. | **ABC is an isosceles triangle with AB = AC. The side BA is produced to D such that AB = AD. If  = 30°, then  is equal to**  (a) 45° (b) 90° (c) 30° (d) 60° |
| 6. | **In a triangle ABC, AB = AC,  = 40° Then the extent angle at B is:**  (a) 90° (b) 70° (c) 110° (d) 80° |

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| **Q** | **SCALENE TRIANGLES AND OBTUSE ANGLE TRIANGLES** |
| 1. | **The sides of a triangle are in the ratio 3 : 4 : 6. The triangle is:**  (a) acute-angled (b) right-angled  (c) obtuse-angled  (d) either acute-angled or right-angled |
| 2. | **O and C are respectively the orthocenter and circumcentre of an acute-angled triangle PQR. The points P and O are joined and produced to meet the side QR at S. If  = 60° and  = 130°, then  =**  (a) 30° (b) 35° (c) 100° (d) 60° |
| 3. | **If the circumcentre of a triangle lies outside it, then the triangle is**  (a) Equilateral (b) Acute angled  (c) Right angled (d) Obtuse angled |
| 4. | **Taking any three of the line segments out of segments of length number of triangles that can be formed is:**  (a) 3 (b) 2 (c) 1 (d) 4 |
| 5. | **ABC is a triangle. The bisectors of the internal angle  and external angle  intersect at D. If  = 50°, then  is**  (a) 100° (b) 90° (c) 120° (d) 60° |
| 6. | **The sum of three altitudes of a triangle is**  (a) equal to the sum of three sides  (b) less than the sum of sides  (c) greater than the sum of sides  (d) twice the sum of sides |

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| **Q** | **RIGHT ANGLE TRIANGLES** |
| 1. | **Two medians AD and BE of ΔABC intersect at G at right angles. If AD = 9 cm and BE = 6 cm, then the length of BD, in cm, is**  (a) 10 (b) 6 (c) 5 (d) 3 |
| 2. | **If the lengths of the three sides of a triangle are 6 cm, 8 cm and 10 cm, then the length of the median to its greatest side is:-**  (a) 8 cm (b) 6 cm (c) 5 cm (d) 4.8 cm |
| 3. | **Suppose ΔABC be a right-angled triangle where  = 90° and AD  BC. If Δ ABC = 40 cm2, ΔACD = 10 cm2 and  = 9 cm, then the length of BC is**  (a) 12 cm (b) 18 cm (c) 4 cm (d) 6 cm |
| 4. | **If a triangle ABC, BAC = 90° and AD is perpendicular to BC. If AD = 6 cm and BD = 4 cm, then the length of BC is**  (a) 8 cm (b) 10 cm (c) 9 cm (d) 13 cm |
| 5. | **In a right angle ,  = 90°; BN is perpendicular to AC, AB = 6 cm, AC = 10 cm. Then AN : NC is**  (a) 3 : 4 (b) 9 : 16  (c) 3 : 16 (d) 1 : 4 |
| 6. | **ABC is a right angled triangle, right angled at C and p is the length of the perpendicular from C on AB. If a, b and c are the lengths of the sides BC, CA and AB respectively, then**  (a)  (b)  (c)  (d) |
| 7. | **If the median drawn on the base of a triangle is half its base, the triangle will be**:  (a) right-angled (b) acute-angled  (c) obtuse-angled (d) equilateral |
| 8. | **In a right-angled triangle, the product of two sides is equal to half of the square of the third side i.e., hypotenuse. One of the acute angles must be**  (a) 60° (b) 30° (c) 45° (d) 15° |
| 9. | **A point D is taken from the side BC of a right-angled triangle ABC, where AB is hypotenuse. Then**  (a) AB2 + CD2 = BC2 + AD2  (b) CD2 + BD2 = 2 AD2  (c) AB2 + AC2 = 2 AD2  (d) AB2 = AD2 + BD2 |
| 10. | **BL and CM are medians of ΔABC right-angled at A and BC = 5 cm. If BL =  cm, then the length of CM is**  (a)  cm (b)  cm  (c)  cm (d)  cm |

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| **Q** | **SIMILAR TRIANGLES** |
| 1. | **Two triangles ABC and DEF are similar to each other in which AB = 10 cm, DE = 8 cm. Then the ratio of the areas of triangles ABC and DEF is**  (a) 4 : 5 (b) 25 : 16  (c) 64 : 125 (d) 4 : 7 |
| 2. | **If ΔABC is similar to ΔDEF such that BC = 3 cm, EF = 4 cm and area of ΔABC = 54 cm2, then the area of ΔDEF is:**  (a) 66 cm2 (b) 78 cm2  (c) 96 cm2 (d) 54 cm2 |
| 3. | **The areas of two similar triangles ABC and DEF are 20 cm2 and 45 cm2 respectively. If AB = 5 cm, then DE is equal to:**  (a) 6.5 cm (b) 7.5 cm  (c) 8.5 cm (d) 5.5 cm |
| 1. | **In Δ ABC and Δ DEF, AB = DE and BC = EF. Then one can infer that Δ ABC  Δ DEF, when**  (a)  (b)  (c)  (d) |
| **Q** | **MISCELLANEOUS QUESTIONS** |
| 1. | **The perpendiculars, drawn from the vertices to the opposite sides of a triangle, meet at the point whose name is**  (a) incentre (b) circumcentre  (c) centroid (d) orthocenter |
| 2. | **The exterior angles obtained on producing the base BC of a triangle ABC in both ways are 120° and 105°, then the vertical  of the triangle is of measure**  (a) 36° (b) 40° (c) 45° (d) 55° |
| 3. | **If AD, BE and CF are medians of ΔABC, then which one of the following statements is correct?**  (a) (AD + BE + CE) < AB + BC + CA  (b) AD + BE + CF > AB + BC + CA  (c) AD + BE + CF = AB + BC + CA  (d) AD + BE + CF =  (AB + BC + CA) |

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| **Q** | **QUADRILATERAL RECTANGLE** |
| 1. | **Q is a point in the interior of a rectangle ABCD. If QA = 3 cm, QB = 4 cm and QC = 5 cm, then the length of QD in centimeter is**  (a)  (b)  (c)  (d) |
| 2. | **ABCD is rectangle where the ratio of the lengths of AB and BC is 3 : 2. If P is the mid-point of AB, then the value of sin  is**  (a)  (b)  (c)  (d) |
| 3. | **A man standing in one corner of a square football field observes that the angle subtended by a pole in the corner just diagonally opposite to this corner just diagonally opposite to this corner is 60°. When he retires 80 m from the corner, along the same straight line, he finds the angle to be 30°. The length of the field, in m, is:**  (a) 40 (b)  (c) 20 (d) |

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| **Q** | **POLYGONS** |
| 1. | **Each interior angle of a regular polygon is three times its exterior angle, then the number of sides of the regular polygon is :**  (a) 9 (b) 8 (c) 10 (d) 7 |
| 2. | **In a regular polygon, the exterior and interior angles are in the ratio 1 : 4. The number of sides of the polygon is**  (a) 10 (b) 12 (c) 15 (d) 16 |
| 3. | **The difference between the exterior and interior angles at a vertex of a regular polygon is 150°. The number of sides of the polygon is**  (a) 10 (b) 15 (c) 24 (d) 30 |
| 4. | **Each edge of a regular tetrahedron is 3 cm, then its volume is**  (a)  c.c. (b)  c.c.  (c)  c.c. (d)  c.c. |
| 5. | **Each interior angle of a regular polygon is 144°. The number of sides of the polygon is**  (a) 8 (b) 9 (c) 10 (d) 11 |
| 6. | **If the sum of the interior angles of a regular polygon be 1080°, the number of sides of the polygon is**  (a) 6 (b) 8 (c) 10 (d) 12 |
| 7. | **The number of sides in two regular polygons are in the ratio 5: 4 and the difference between each interior angle of the polygons is 6°. Then the number of sides are**  (a) 15, 12 (b) 5, 4  (c) 10, 8 (d) 20, 16 |
| 8. | **Each internal angle of regular polygon is two times its**  **external angle. Then the number of sides of the polygon is:**  (a) 8 (b) 6 (c) 5 (d) 7 |
| 9. | **Ratio of the number of sides of two regular polygons is 5 : 6 and the ratio of their each interior angle is 24 : 25. Then the number of sides of these two polygons are**  (a) 20, 24 (b) 15, 18  (c) 10, 12 (d) 5, 6 |
| 10. | **Measure of each interior angle of a regular polygon can never be**:  (a) 150° (b) 105° (c) 108° (d) 144° |
| 11. | **The sum of all interior angles of a regular polygon is twice the sum of all its exterior angles. The number of sides of the polygon is**  (a) 10 (b) 8 (c) 12 (d) 6 |
| 12. | **The ratio between the number of sides of two regular polygon their interior angles is 2 : 3. The number of sides of these polygons is respectively**  (a) 6, 12 (b) 5, 10  (c) 4, 8 (d) 7, 14 |
| 13. | **There are two regular polygons with number of sides equal to (n – 1) and (n + 2). Their exterior angles differ by 6°. The value of n is**  (a) 14 (b) 12 (c) 13 (d) 11 |
| 14. | **If the interior angle of a regular polygon is double the measure of exterior angle, then the number of sides of the polygon is**  (a) 6 (b) 8 (c) 10 (d) 12 |
| 15. | **If each interior angle of a regular polygon is 150°, the number of sides of the polygon is**  (a) 8 (b) 10  (c) 15 (d) None of these |
| 16. | **The sum of interior angles of a regular polygon is 1440°. The number of sides of the polygon is**  (a) 10 (b) 12 (c) 6 (d) 8 |

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| **Q** | **PARALLELOGRAM** |
| 1. | **The length of the diagonal BD of parallelogram ABCD is 18 cm. If P and Q are the centroid of the Δ ABC and Δ ADC respectively then the length of the line segment PQ is**  (a) 4 cm (b) 6 cm  (c) 9 cm (d) 12 cm |
| 2. | **ABCD is a parallelogram. BC is produced to Q such that BC = CQ. Then**  (a) area (Δ BCP) = area (Δ DPQ)  (b) area (Δ BCP) > area (Δ DPQ)  (c) area (Δ BCP) < area (Δ DPQ)  (d) area (Δ BCP) + area (Δ DPQ) = area (ΔBCD) |

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| **Q** | **CYCLIC QUADRILATERAL** |
| 1. | **If an exterior angle of a cyclic quadrilateral be 50°, then the interior opposite angle is:**  (a) 130° (b) 40°  (c) 50° (d) 90° |
| 2. | **ABCD is a cyclic quadrilateral and O is the centre of the circle. If  = 140° and  = 40°, then the value of  is equal to**  (a) 70° (b) 90°  (c) 60° (d) 80° |
| 3. | **ABCD is a cyclic trapezium with AB || DC and AB = diameter of the circle. If  = 30°, then  is**  (a) 60° (b) 120°  (c) 150° (d) 30° |
| 4. | **A cyclic quadrilateral ABCD is such that AB = BC, AD = DC, AC  BD,  = 0. Then the angle  =**  (a) θ (b)  (c) 20 (d) 30 |
| 5. | **The diagonals AC and BD of a cyclic quadrilateral ABCD intersect each other at the point P. Then, it is always true that**  (a) BP . AB = CD . CP  (b) AP . CP = BP . DP  (c) AP . BP = CP . DP  (d) AP . CD = AB . CP |
| 6. | **A quadrilateral ABCD circumscribes a circle and AB = 6 cm, CD = 5 cm and AD = 7 cm. The length of side BC is**  (a) 4 cm (b) 5 cm (c) 3 cm (d) 6 cm |

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| **Q** | **TRAPEZIUM/RHOMBUS** |
| 1. | **ABCD is a rhombus. A straight line through C cuts AD produced at P and AB produced at Q. If DP =  AB, then the ratio of the lengths of BQ and AB is**  (a) 2 : 1 (b) 1 : 2  (c) 1 : 1 (d) 3 : 1 |
| 2. | **In a quadrilateral ABCD, with unequal sides if the diagonals AC and BD intersect at right angles, then**  (a) AB2 + BC2 = CD2 + DA2  (b) AB2 + CD2 = BC2 + DA2  (c) AB2 + AD2 = BC2 + CD2  (d) AB2 + BC2 = 2(CD2 + DA2) |
| 3. | **ABCD is a rhombus whose side AB = 4 cm and  = 120°, then the length of diagonal BD is equal to:**  (a) 1 cm (b) 2 cm  (c) 3 cm (d) 4 cm |

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| **Q** | **SIMPLE CIRCLE** |
| 1. | **Two equal circles of radius 4 cm intersect each other such that each passes through the centre of the other. The length of the common chord is:**  (a)  cm (b)  cm  (c)  cm (d)  cm |
| 2. | **One chord of a circle is known to be 10.1 cm. The radius of this circle must be:**  (a) 5 cm (b) greater than 5 cm  (c) greater than or equal to 5 cm  (d) less than 5 cm |
| 3. | **The length of a chord of a circle is equal to the radius of the circle. The angle which this chord subtends in the major segment of the circle is equal to**  (a) 30° (b) 45°  (c) 60° (d) 90° |
| 4. | **AB = 8 cm and CD = 6 cm are two parallel chords on the same side of the centre of a circle. The distance between them is 1 cm. The radius of the circle is**  (a) 5 cm (b) 4 cm  (c) 3 cm (d) 2 cm |
| 5. | **The length of the common chord of two intersecting circles is 24 cm. If the diameters of the circles are 30 cm and 26 cm, then the distance between the centres in cm is**  (a) 13 (b) 14 (c) 15 (d) 16 |
| 6. | **Two parallel chords are drawn in a circle of diameter 30 cm. The length of one chord is 24 cm and the distance between the two chords is 21 cm. The length of the other chords is**  (a) 10 cm (b) 18 cm  (c) 12 cm (d) 16 cm |
| 7. | **A circle (with centre at O) is touching two intersecting lines AX and BY. The two points of contact A and B subtend an angle of 65° at any point C on the circumference of the circle. If P is the point of intersection of the two lines, then the measure of  is**  (a) 25° (b) 65°  (c) 90° (d) 40° |
| 8. | **A chord of a circle is equal to its radius. The angle subtended by this chord at a point on the circumference in the major segment is**  (a) 60° (b) 120°  (c) 90° (d) 30° |
| 9. | **AB and CD are two parallel chords on the opposite sides of the centre of the circle. If  = 10 cm,  = 24 cm and the radius of the circle is 13 cm, the distance between the chords is**  (a) 17 cm (b) 15 cm  (c) 16 cm (d) 18 cm |
| 10. | **AB and CD are two parallel chords of a circle such that AB = 10 cm and CD = 24 cm. If the chords are on the opposite sides of the centre and distance between them is 17 cm, then the radius of the circle is:**  (a) 11 cm (b) 12 cm  (c) 13 cm (d) 10 cm |
| 11. | **A chord AB of a circle C1 of radius  cm touches a circle C2 which is concentric to C1. If the radius of C2 is  cm, the length of AB is**  (a)  cm (b)  cm  (c)  cm (d)  cm |
| 12. | **The length of the common chord of two circles of radii 30 cm and 40 cm whose centres are 50 cm apart, is (in cm)**  (a) 12 (b) 24 (c) 36 (d) 48 |
| 13. | **Chords AB and CD of a circle intersect at E and are perpendicular to each other. Segments AE, EB and ED are of lengths 2 cm, 6 cm and 3 cm respectively. Then the length of the diameter of the circle in cm is**  (a)  (b)  (c) 65 (d) |
| 14. | **Two circles with centre P and Q intersect at B and C, A, D are points on the circles with centres P and Q respectively such that A, C, D are collinear. If  = 130°, and  = x°, then the value of x is**  (a) 65 (b) 130  (c) 195 (d) 135 |
| 15. | **Two circles of same radius 5 cm, intersect each other at A and B. If AB = 8 cm, then the distance between the centres is:**  (a) 6 cm (b) 8 cm  (c) 10 cm (d) 4 cm |
| 16. | **AB is the chord of a circle with centre O and DOC is a line segment originating from a point D on the circle and intersecting AB produced at C such that BC = OD. IF  = 20°, then  = ?**  (a) 20° (b) 30°  (c) 40° (d) 60° |
| 17. | **A square ABCD is inscribed in a circle of unit radius. Semicircles are described on each side as a diameter. The area of the region bounded by the four semicircles and the circle is**  (a) 1 sq. unit (b) 2 sq. unit  (c) 1.5 sq. unit (d) 2.5 sq. unit |
| 18. | **Two circles touch each other internally. Their radii are 2 cm and 3 cm. The biggest chord of the greater circle which is outside the inner circle is of length**  (a)  cm (b)  cm  (c)  cm (d)  cm |
| 19. | **Two circles touch each other externally. The distance between their centres is 7 cm. If the radius of one circle is 4 cm, then the radius of the other circle is**  (a) 3.5 cm (b) 3 cm  (c) 4 cm (d) 2 cm |
| 20. | **A, B and C are the three points on a circle such that the angles subtended by the chords AB and AC at the centre. O are 90° and 110° respectively.  is equal to**  (a) 70° (b) 80°  (c) 90° (d) 100° |
| 21. | **A, B, C, D are four points on a circle. AC and BD intersect at a point E such that  = 130° and  = 20°.  is**  (a) 120° (b) 90°  (c) 100° (d) 110° |
| 22. | **It two concentric circles are of radii 5 cm and 3 cm, then the length of the chord of the larger circle which touches the smaller circle is**  (a) 6 cm (b) 7 cm  (c) 10 cm (d) 8 cm |

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| **Q** | **TANGENTS TO CIRCLE** |
| 1. | **The radius of two concentric circles are 9 cm and 15 cm. If the chord of the greater circle be a tangent to the smaller circle, then the length of that chord is**  (a) 24 cm (b) 12 cm  (c) 30 cm (d) 18 cm |
| 2. | **If a chord of a circle of radius 5 cm is a tangent to a circle of radius 3 cm, both the circles being concentric, then the length of the chord is**  (a) 10 cm (b) 12.5 cm  (c) 8 cm (d) 7 cm |
| 3. | **The tangents are drawn at the extremities of a diameter AB of a circle with centre. P. If a tangent to the circle at the point C intersects the other two tangents at Q and R, then the measure of  is**  (a) 45° (b) 60°  (c) 90° (d) 180° |
| 4. | **The tangents at two points A and B on the circle with centre O intersect at P; if in quadrilateral PAOB,  = 5 : 1, then measure of <APB is:**  (a) 30° (b) 60°  (c) 45° (d) 15° |
| 5. | **PR is tangent to a circle, with centre O and radius 4 cm, at point Q. If  = 90°, OR = 5 cm and OP =  cm, then, in cm, the length of PR is:**  (a) 3 (b)  (c)  (d) |
| 6. | **If the radii of two circles be 6 cm and 3 cm and the length of the transverse common tangent be 8 cm, then the distance between the two centres is**  (a)  cm (b)  cm  (c)  cm (d)  cm |
| 7. | **P and Q are two points on a circle with centre at O. R is a point on the minor arc of the circle, between the points P and Q. The tangents to the circle at the points P and Q meet each other at the point S. If  = 20°,  = ?**  (a) 80° (b) 200°  (c) 160° (d) 100° |
| 8. | **C1 and C2 are two concentric circles with centres at O. Their radii are 12 cm. and 3 cm. respectively. B and C are points of contact of two tangents drawn to C2 from a point A lying on the circle C1. Then the area of the quadrilateral ABOC is**  (a)  sq. cm. (b)  sq. cm.  (c)  sq. cm. (d)  sq. cm. |
| 9. | **Two circles intersect at A and B. P is a point on produced BA. PT and PQ are tangents to the circles. The relation of PT and PQ is**  (a) PT = 2PQ (b) PT < PQ  (c) PT > PQ (d) PT = PQ |
| 10. | **From a point P, two tangents PA and PB are drawn to a circle with centre O. If OP is equal to diameter of the circle, then  is**  (a) 45° (b) 90°  (c) 30° (d) 60° |
| 11. | **The radii of two concentric circles are 13 cm and 8 cm. AB is a diameter of the bigger circle and BD is a tangent to the smaller circle touching it at D and the bigger circle at E. Point A is joined to D. The length of Ad is joined to D. The length of AD is**  (a) 20 cm (b) 19 cm  (c) 18 cm (d) 17 cm |
| 12. | **From a point P which is at a distance of 13 cm from centre O of a circle of radius 5 cm, in the same plane, a pair of** **tangents PQ and PR are drawn to the circle. Area of quadrilateral PQOR is**  (a) 65 cm2 (b) 60 cm2  (c) 30 cm2 (d) 90 cm2 |

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| **Q** | **INCENTRE/CIRCUM CENTRE AND INCIRCLE/CIRCUMCIRCLE** |
| 1. | **The circumcentre of a triangle ABC is O. If  = 85° and  = 75°, then the value of  is**  (a) 40° (b) 60°  (c) 70° (d) 90° |
| 2. | **O is the incentre of ΔABC and  = 30°, then  is**  (a) 100° (b) 105°  (c) 110° (d) 90° |
| 3. | **Let O be the in-centre of a triangle ABC and D be a point on the side BC of ΔABC, such that OD  BC. If  = 15°, then  =**  (a) 75° (b) 45°  (c) 150° (d) 90° |
| 4. | **I is the incentre of Δ ABC,  = 60° and  = 50°. Then  is:**  (a) 55° (b) 125°  (c) 70° (d) 65° |
| 5. | **In the incentre of an equilateral triangle lies inside the triangle and its radius is 3 cm, then the side of the equilateral triangle is**  (a)  cm (b)  cm  (c)  cm (d) 6 cm |
| 6. | **I is the incentre of a triangle ABC. If  = 65° and  = 55°, then the value of  is**  (a) 130° (b) 120°  (c) 140° (d) 110° |
| 7. | **The equidistant point from the vertices of a triangle is called its:**  (a) Centroid (b) Incentre  (c) Circumcentre (d) Orthocentre |
| 8. | **If in a triangle, the circumcentre, incentre, centroid and orthocentre coincide, then the triangle is**  (a) Acute angled (b) Isosceles  (c) Right angled (d) Equilateral |
| 9. | **The length of the two sides forming the right angle of a right angled triangle are 6 cm and 8 cm. the length of its circum-radius is:**  (a) 5 cm (b) 7 cm  (c) 6 cm (d) 10 cm |
| 10. | **The radius of the circumcircle of a right angled triangle is 15 cm and the radius of its inscribed circle is 6 cm. Find the sides of the triangle.**  (a) 30, 40, 41 (b) 18, 24, 30  (c) 30, 24, 25 (d) 24, 36, 20 |

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| **Q.No.** | **QUESTIONS BASED ON MEASUREMENTS OF ANGLES AND LINE SEGMENTS** |
| 1. | **Ashok has drawn an angle of measure 45°27′ when he was asked to draw an angle of 45°. The percentage error in his drawing is**  (a) 0.5 (b) 1.0  (c) 1.5 (d) 2.0 |
| 2. | **Two chords AB and CD of circle whose centre is O, meet at the point P and  = 50°,  = 40°. Then the value of  is**  (a) 60° (b) 40°  (c) 45° (d) 75° |
| 3. | **A straight line parallel to BC of ΔABC intersects AB and AC at points P and Q respectively. AP = QC, PB = 4 units and AQ = 9 units, then the length of AP is:**  (a) 25 units (b) 3 units  (c) 6 units (d) 6.5 units |
| 4. | **If Δ ABC,  = 30°,  = 60°, Find  in circular measure.**  (a)  (b)  (c)  (d) |
| 5. | **In ΔABC, , then  is:**  (a) 30° (b) 45°  (c) 60° (d) 90° |
| 6. | **In circular measure, the value of the angle 11°15′ is**  (a)  (b)  (c)  (d) |
| 7. | **In triangle PQR, points A, B and C are taken on PQ, PR and QR respectively such that QC = AC and CR = CB. If  = 40°, then  is equal to:**  (a) 140° (b) 40°  (c) 70° (d) 100° |
| 8. | **If the internal bisectors of the  and = ΔABC meet at O and also  = 80°, then  is equal to**  (a) 50° (b) 160°  (c) 40° (d) 130° |
| 9. | **Two chord AB, CD of a circle with centre O intersect each other at P.  = 23° and  = 70°, then the  is**  (a) 45° (b) 47°  (c) 57° (d) 67° |
| 10. | **In triangle ABC,  = 75°,  = 45°.  is produced to D. If  = x°, then % of 60° is**  (a) 30° (b) 48°  (c) 15° (d) 24° |
| 11. | **In a Δ ABC, AB = AC and BA is produced to D such that AC = AD. Then the  is**  (a) 100° (b) 60°  (c) 80° (d) 90° |
| 12. | **If O be the circumcentre of a triangle PQR and  = 110°,  = 25°, then the measure of  is**  (a) 65° (b) 50° (c) 55° (d) 60° |
| 13. | **In the following figure. AB be diameter of a circle whose centre is O. If  = 150°,  = 51° then the measure of  is:**    (a) 115° (b) 110°  (c) 105° (d) 120° |
| 14. | **All sides of a quadrilateral ABCD touch a circle. If AB = 6 cm, BC = 7.5 cm, CD = 3 cm, then DA is**  (a) 3.5 cm (b) 4.5 cm  (c) 2.5 cm (d) 1.5 cm |
| 15. | **D is a point on the side BC of a triangle ABC such that AD  BC. E is a point on AD for which AE : ED = 5 : 1. If  = 30° and tan () = 6 tan (), then  =**  (a) 30° (b) 45° (c) 60° (d) 15° |

**QUESTIONS BASED ON THE BASIC THEOREM OF TRIANGLES,  
QUADRILATERALS AND CIRCLES**

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| **Q.No.** | **Question** |
| 1. | **The side AB of a parallelogram ABCD is produced to E in such way that BE = AB. DE intersects BC at Q. The point Q divides BC in the ratio**  (a) 1 : 2 (b) 1 : 1 (c) 2 : 3 (d) 2 : 1 |
| 2. | **D is any point on side AC of ΔABC. If P, Q, X, Y are the midpoints of AB, BC, AD and DC respectively, then the ratio of PX and QY is**  (a) 1 : 2 (b) 1 : 1 (c) 2 : 1 (d) 2 : 3 |
| 3. | **In ΔABC, D and E are points on AB and AC respectively such that DE | | BC and DE divides the ΔABC into two parts of equal areas. Then ratio of AD and BD is**  (a) 1 : 1 (b) 1 :  – 1  (c) 1 :  (d) 1 :  + 1 |
| 4. | **X and Y are centres of circles of radii 9 cm and 2 cm respectively, XY = 17 cm. Z is the centre of a circle of radius r cm which touches the above circles externally. Given that  = 90°, the value of r is**  (a) 13 cm (b) 6 cm  (c) 9 cm (d) 8 cm |
| 5. | **Three circles of radii 4 cm, 6 cm and 8 cm touch each other pair-wise externally. The area of the triangle formed, by the line-segments joining-the centres of the three circles is**  (a) 144  sq. cm (b) 12  sq. cm  (c) 6  sq. cm (d) 24  sq. cm |
| 6. | **In triangle PQR, points A, B and C are taken on PQ, PR and QR respectively such that QC = AC and CR = CB If  = 40° then  is equal to:**  (a) 140° (b) 40°  (c) 70° (d) 100° |
| 7. | **Two circles with centres A and B and radius 2 units touch each other externally at ‘C’. A third circle with centre ‘C’ and radius ‘2’ units meets other two at D and E. Then the area of the quadrilateral ABDE is**  (a)  sq. unit (b)  sq. unit  (c)  sq. unit (d)  sq. unit |
| 8. | **AB and CD are two parallel chords on the opposite sides of the centre of the circle. If  = 10 cm,  = 24 cm and the radius of the circle is 13 cm, the distance between the chords is**  (a) 17 cm (b) 15 cm  (c) 16 cm (d) 18 cm |