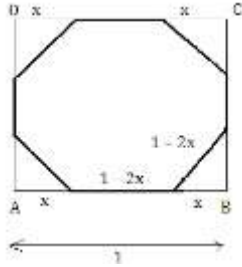


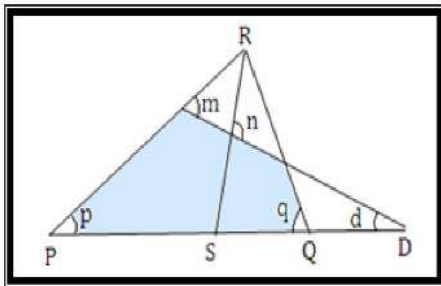
CBSE
Class IX Mathematics
Term 2
Sample Paper – 2

- Q1. Let D represent a repeating decimal. If P denotes the r figures of D which do not repeat themselves, and Q denotes the s figures which do repeat themselves, then the incorrect expression is :
- (a) $D = .PQQQ..$
 - (b) $10^r D = P.QQQ...$
 - (c) $10^{r+s} D = PQ.QQQ...$
 - (d) $10^r(10^s-1) D = Q(P-1)$
- Q2. Which of the following correctly shows 185367249 according to International place value chart?
- (a) 1, 853, 672, 49
 - (b) 18, 536, 724, 9
 - (c) 185, 367, 249
 - (d) None of these
- Q3. If $x - k$ divides $x^3 - 6x^2 + 11x - 6 = 0$, then K can't be equal to
- (a) 1
 - (b) 2
 - (c) 3
 - (d) 4
- Q4. $\sqrt{6 + 2\sqrt{2} + 2\sqrt{3} + 2\sqrt{6}} - \frac{1}{\sqrt{5-2\sqrt{6}}}$ is Equal to
- (a) 1
 - (b) $\sqrt{2}$
 - (c) $6\sqrt{2}$
 - (d) $2\sqrt{6}$

- Q5. A regular octagon is to be formed by cutting equal isosceles right triangles from the corners of a square. If the square has sides of one unit, the leg of each of the triangle has length;

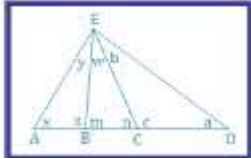


- (a) $\frac{2+\sqrt{2}}{3}$
 (b) $\frac{2-\sqrt{2}}{2}$
 (c) $\frac{1-\sqrt{2}}{2}$
 (d) $\frac{1+\sqrt{2}}{3}$
- Q6. Given triangle PQR with RS bisecting angle R, PQ extended to D and angle 'n' a right angle, then:



- (a) $\angle m = \frac{1}{2} (\angle p - \angle q)$
 (b) $\angle m = \frac{1}{2} (\angle p + \angle q)$
 (c) $\angle d = \frac{1}{2} (\angle q + \angle p)$
 (d) $\angle d = \frac{1}{2} \angle m$

- Q7. In a general triangle ADE (as shown) lines EB and EC are drawn. Which of the following angle relations is true?

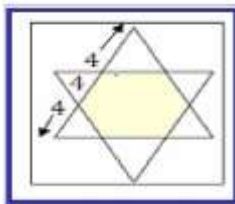


- (a) $x + z = a + b$
 (b) $y + z = a + b$
 (c) $m + x = w + n$
 (d) $x + y + n = a + b + m$
- Q8. Solve for 'x' $4 \left(x - \frac{1}{x}\right)^2 + 8 \left(x + \frac{1}{x}\right) = 29$
- (a) 1
 (b) 2
 (c) 0
 (d) None of these
- Q9. If P, Q, R, S are the sides of a quadrilateral. Find the minimum value of $\frac{p^2+q^2+r^2}{s^2}$
- (a) $\frac{1}{2}$
 (b) $\frac{1}{3}$
 (c) $\frac{2}{3}$
 (d) $\frac{3}{2}$
- Q10. The parallel sides of a trapezoid are 3 cm and 9 cm . The non- parallel side are 4 cm and 6 cm. A line parallel to the base divides the trapezoid into two trapezoids of equal perimeters. Find the ratio into which each of the non- parallel sides is divided.
- (a) 1 : 5
 (b) 1 : 4
 (c) 1 : 3
 (d) None of these

- Q11. Two circles C_1 and C_2 intersect at two distinct points P and Q in a plane. Let a line passing through P meet the circles C_1 and C_2 in A and B respectively. Let Y be the middle point of AB , let QY meet the circles C_1 and C_2 in X and Z respectively. Then which of the following is correct?
- (a) Y is mid – point XZ
 - (b) Z is mid – point QX
 - (c) P is mid – point AB
 - (d) None of these

- Q12. A square is inscribed in an equilateral triangle. Find the ratio of area of the square to that of the triangle.
- (a) $4\sqrt{3} : 7 + 3\sqrt{3}$
 - (b) $2\sqrt{3} : 7 + 4\sqrt{3}$
 - (c) $4\sqrt{3} : 7 + 4\sqrt{3}$
 - (d) None of these

- Q13. Two equilateral triangle measures 12 cm on each side. They are positioned to form a regular six-pointed star. What is the area of the overlapping figure?

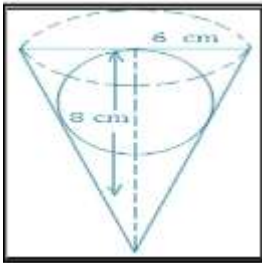


- (a) $48\sqrt{3} \text{ cm}^2$
 - (b) $24\sqrt{3} \text{ cm}^2$
 - (c) $36\sqrt{3} \text{ cm}^2$
 - (d) $12\sqrt{3} \text{ cm}^2$
- Q14. Volume of a cube is 5832 m^3 . Find the cost of painting its total surface area at the rate of Rs. 3.50 per m^2
- (a) 6804
 - (b) 6805
 - (c) 6809
 - (d) None of these

Q15. The base of a pyramid is an equilateral triangle of side length 6 cm. The other edges of the pyramid are each of length $\sqrt{15}$ cm. Find the volume of the pyramid.

- (a) 6 cm^2
- (b) 9 cm^2
- (c) 8 cm^2
- (d) None of these

Q16. A conical vessel of radius 6 cm and height 8 cm is completely filled with water. A sphere is lowered into the water and its size is such that when it touches the sides, it is just immersed. What fraction of the water



- (a) $\frac{2}{5}$
- (b) $\frac{3}{8}$
- (c) $\frac{3}{5}$
- (d) $\frac{3}{4}$

Q17. The mean of the following distribution is 50.

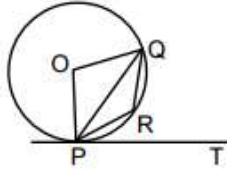
- (a) 2
- (b) 3
- (c) 4
- (d) 5

- Q18. A total of 28 handshakes were exchanged at the conclusion of a party. Assuming that each participant was equally polite toward all the other, the number of people present was
- (a) 14
 - (b) 28
 - (c) 56
 - (d) 8
- Q19. Two dice are thrown simultaneously. What is the probability of getting two numbers whose product is even?
- (a) $\frac{1}{2}$
 - (b) $\frac{3}{4}$
 - (c) $\frac{3}{8}$
 - (d) $\frac{5}{16}$
- Q20. If only downward motion along lines is allowed, what is the total number of paths from point P to point Q in the figure below?

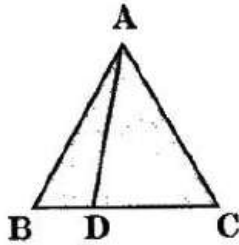


- (a) 20
- (b) 10
- (c) 30
- (d) None of these

- Q21. In the figure, PQ is a chord of a circle with centre O and PT is the tangent at P such that $\angle QPT = 70^\circ$. Then the measure of $\angle PRQ$ is equal to



- (a) 135°
(b) 250°
(c) 120°
(d) 110°
- Q22. In the figure given, D divides the side BC of $\triangle ABC$ in the ratio 3 : 5. What is the area of $\triangle ABD$?



- (a) $\frac{2}{5} \times ar(\triangle ABC)$
(b) $\frac{3}{5} \times ar(\triangle ABC)$
(c) $\frac{5}{8} \times ar(\triangle ABC)$
(d) $\frac{3}{5} \times ar(\triangle ABC)$
- Q22. The base of a conical tent is of area 616 sq. cm. A 48 cm long vertical pole is placed at its centre so that it touches the roof of the tent. How much canvas is needed to make the tent if the base is also covered with canvas?
- (a) 2816 cm^2
(b) 2861 cm^2
(c) 2618 cm^2
(d) 2681 cm^2

- Q23. The mean of 100 observations is 50. If one of the observations, 50 is replaced by 150, what is the resulting mean?
- (a) 50.5
 - (b) 51
 - (c) 51.5
 - (d) 52
- Q24. E and F are the midpoints of the sides AB and AC respectively of ΔABC ; G and H are the midpoints of sides AE and AF respectively of the $\Delta AEDF$. If $GH = 1.8$ cm. Find BC.
- (a) 0.9 cm
 - (b) 3.6 cm
 - (c) 7.2 cm
 - (d) 5.4 cm
- Q25. Which of the following statement is true?
- (a) The ordinate is positive to the right of the origin
 - (b) The ordinate is negative to the left of the origin.
 - (c) The ordinate is negative below x – axis
 - (d) The ordinate is negative above x – axis
- Q26. If the product of $x^2 - 6x + 5$ and $2x^2 - 7x + 3$ is 0, which of the following is not a value of 'x'?
- (a) 3
 - (b) 2
 - (c) 1/2
 - (d) 1
- Q28. A cube of edge 'k' is divided into 'n' equal cubes. What is the edge of the new cube?
- (a) $\sqrt[3]{nk}$
 - (b) $\frac{k}{\sqrt[3]{n}}$
 - (c) $\sqrt[3]{nK}$
 - (d) $\frac{\sqrt[3]{n}}{k}$

- Q29. If $y = 3^x$ and 'x' and 'y' are both integers, which of the following is equivalent to $3^{2x} + 3^x \times 3$?
- (a) $y(y + 3)$
 - (b) $y^2 + 3$
 - (c) $3y + 3$
 - (d) $3(y + 3)$
- Q30. How many positive numbers from 1 to 200 both inclusive are equal to the cube of an integer?
- (a) 6
 - (b) 5
 - (c) 4
 - (d) 0
- Q31. If 'a' and 'b' are real numbers, for what values does the equations $3x - 5 + a = bx + 1$ have a unique solution 'x'?
- (a) For all 'a' and 'b'
 - (b) For no 'a' and 'b'
 - (c) For $a \neq 6$.
 - (d) For $b \neq 3$.