Sample Question Paper 2021-22
MATHS
Class IX

Time: 2 hours 30 mins **Total marks: 80**

General Instructions:

1. The question paper contains 30 questions divided into four sections A, B, C and D.
2. All questions are compulsory.
3. Section A comprises 6 questions of 1 mark each.
4. Section B comprises 6 questions of 2 marks each.
5. Section C comprises 10 questions of 3 marks each.
6. Section D comprises 8 questions of 4 marks each.

Section A (1x6)

1. Solve for x; $((32/34)x^2 + 32)/ 34x = 2x - 12x^2$

2. Solve for a; $32a + 16/12a = 4$

3. Solve for m; $8 \times 2^m = 4^m$

4. How many tiles of 10m x 10m will be needed to cover a room of 1000 m^2?

5. Find the class mark of the class interval 25 - 75

6. If coordinates of 2 points are A (9,0) and B (0,9). Find (ordinate of A) + (ordinate of B)

Section B (2x6)

7. Convert 0.5555 into a fraction.

8. If the perimeter of a circle is 64π. Find the diameter of the circle.

9. The three angles of a triangle are in the ratio of 5:6:7. Find the largest angle of the triangle.

10. Find the mean/average of the first 11 natural numbers.

11. If the concurrent side of an isosceles triangle is 8m and the base is 4m. Find the area of the triangle?

12. If $(x + c)^2 = 576$, $c = 4$, find the value of x.

Section C (3x10)

13. If the three sides of a triangle are 15, 12 and 14, find the area of the triangle.

14. Find N/2 + 1; from the following table:

Class	Frequency
2	12

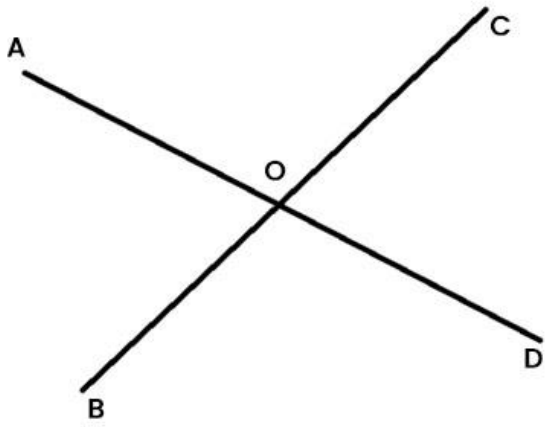
5	5
8	6
11	8
14	12

15. A box contains 50 balls, each numbered 1 to 50 in a distinct way. Find the probability of picking up a ball of a prime number.

16. Solve $\sqrt{(36\sqrt{2(32)} + 12)}$

17. Solve for $x+(1/x)$; $x^4+ (1/x^4) = 98$.

18. Find the value of the angle AOC, if angle BOD and angle COB are in ratio 12:6



19. Find the altitude and the area of the equilateral triangle whose sides are 12m each.

20. Construct a circle of area 100π cm^2.

21. Find the volume of a truncated cone of height 12 cm, the upper radius of 10cm and the lower radius of 12 cm.

Section D (4x10)

22. Find the mean:

Class	5	10	15	20	25	30
Frequency	5	8	12	10	3	11

23. Find the remainder of P(x) / Q(x), if P(x) = $2x^2+3x^3+5x+12$ and Q(x) = 12x-2.

24. Find the volume, lateral surface area and total surface area of the cylinder of radius 14m and height of 10m.

25. A box contains 30 balls of red and 150 balls of orange colour. On observing the box, it was found that one-third of the balls lost their colour. If one ball is chosen randomly, find the probability that it is a ball without any colour.

26. If a point x is 25 cm away from the centre of the circle, a tangent LX of length 20cm is drawn. Draw the diagram and find the radius of the circle.

27. If the ratio of two parallel sides of a trapezium is in ratio 10:12 with a height of 10cm and area of 220cm, find the two parallel sides.

28. If $a + b + c = 16$ and $a^2 + b^2 + c^2 = 10$, then find the value of $a^3 + b^3 + c^3 - 3abc$

29. Find the volume, surface area and circumference of a sphere of radius 10m.

30. Find the sum of the area of triangle ABC and triangle DEF. The three sides of triangle ABC are 12cm, 10cm and 16cm. The three sides of triangle DEF are 15cm, 18cm and 12cm.