CBSE Class 9 Maths Sample Paper Set 11

SUBJECT: MATHEMATICS **MAX. MARKS : 90**
CLASS : IX **DURATION : 3 HRS**

General Instruction:

(i) **All** questions are compulsory.

(ii) This question paper contains **28** questions divided into four Sections A, B, C and D.

(iii) **Section A** comprises of 4 questions of **1 mark** each. **Section B** comprises of 6 questions of **2 marks** each. **Section C** comprises of 8 questions of **3 marks** each and **Section D** comprises of 10 questions of **4 marks** each.

(iv) There is no overall choice.

(v) Use of Calculators is not permitted

SECTION – A

Questions 1 to 4 carry 1 mark each.

1. A family contains father, mother, 2 male children and 1 female child. One of them is selected for trip to Goa. what is the probability that a male child is selected ?

2. Find the total surface area of a right circular cylinder with radius 3 cm and height 11 cm.

3. If the mean of the observations :
x, $x + 3$. $x + 5$, $x + 7$ and $x + 10$ is 9, then find the mean of the last three observations.

4. If the radius of the sphere is doubled, find the ratio of volume of the new sphere to the original sphere.

SECTION – B

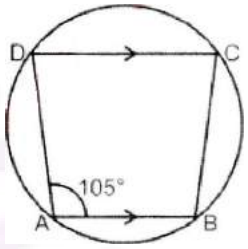
Questions 5 to 10 carry 2 marks each.

5. Curved surface area of a right circular cylinder is 8.8 m^2 . If the radius of the base of the cylinder is 0.7 m, find its height.

6. If the given figure. ABCD is a cyclic quadrilateral in which AB || DC. If $\angle B\,AD = 105^\circ$, find

(i) $\angle B\,CD$

(ii) $\angle ABC$



7. The mean of 100 observations is 50. If one of the observations which was 50 is replaced by 150, then find the resulting mean.

8. If the curved surface area of a solid hemisphere is 2772 cm^2 then find its total surface area.

9. If the curved surface area of a cylinder is 94.2 cm^2 and its height is 5 cm, find the volume of the cylinder. (use $\pi = 3.14$)

10. Find the median of following data 17, 23, 57, 46, 33 29, 28. 30, 34. If observation 23 is removed from data, then find new mean.

SECTION – C

Questions 11 to 18 carry 3 marks each.

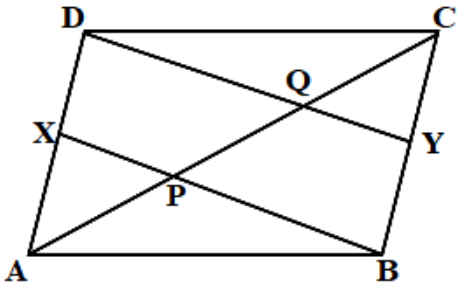
11. An investigative report by local newspaper concluded spread of dengue through mosquitoes which breed in stagnant water affected 200 persons of different age group in a city.

Age (in years)	0 – 18	19 – 38	39 – 49	50 – 59	60 and above
No. of Persons	38	27	86	46	3

An affected person is selected at random, find the probability that person is:

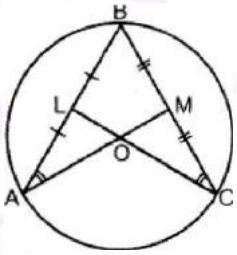
(i) 39 years or above
(ii) under 39 years
(iii) under 60 years but over 38 years

12. In the given figure, X and Y are respectively the mid-points of the opposite sides AD and BC of a parallelogram ABCD. Also BX and DY intersect AC at P and Q respectively. Show that AP = PQ = QC.



13. In a hot water heating system, there is a cylindrical pipe of length 28 m and diameter 5 cm. Find the total radiating surface in the system. [Assume π = 22/7]

14. In the given figure, 0 is the centre of the circle and L and M are the mid-points of AB and CB respectively if $\angle OAB = \angle$OCB, prove that BL = BM.



15. Draw a histogram for the following data:

Weight: (in kg)	No. of Students
40-44	2
45-49	8
50-54	12
55 – 59	10
60-64	6
65-69	4

16. ABCD is a parallelogram whose diagonals AC and BD equal to each other. Prove that ABCD is a rectangle.

17. Draw lines ***l*** and ***m*** intersected by a transversal ***t.*** Construct angle bisectors of the interior angles on same side of the transversal.

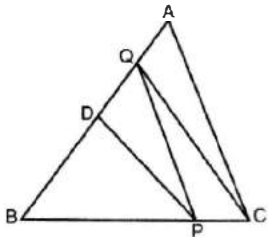
18. The curved surface area of a cone is 12320 sq.cm. If the radius of its base 56 cm, find its height.

SECTION – D

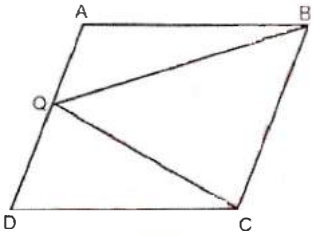
Questions 19 to 28 carry 4 marks each.

19. In the given figure, D is the mid-point of side AB of △ ABC and P is any point on BC and CQ parallel to PD is drawn meeting AB in Q.

Prove that : ar (△ BPQ) = 1/2 ar (△ ABC)



20. ABCD is a parallelogram and Q is any point on side AD. If ar (△QBC) = 10 cm^2, find ar (△QAB) + ar (△QDC).



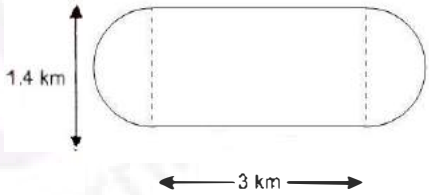
21. State and prove mid-point theorem.

22. If two circles intersect at two points prove that their centres lie on the perpendicular bisector of the common chord.

23. Construct 6PQR, if PQ = 7.5 cm, LQ =90° and PR- RQ = 4 cm.

24. If bisectors of opposite angles of a cyclic quadrilateral ABCD intersect the circle, circumscribing it at points P and Q, prove that PQ is a diameter of the circle.

25. A colony decides to take care of their common park by cutting their grasses and fencing the whole area. The park is in the shape of rectangle adjoint with the semicircle on the both width sides.



(a) Find the cost of cutting the grass at rate of Rs. 100 per 50 m^2.

(b) How much length of wire is used to fence the whole area if it is rounded 3 times?

(c) Which value is depicted by colony?

26. A spherical solid of iron having radius of 12 cm is melted and recasted into three small solid spherical spheres of different sizes. If the radii of two spheres are 6 cm and 8 cm, find the radius of the third sphere.

27. The marks obtained (out of 100} by a class of 80 students are given below :

Marks	Number of Students
10 – 20	6
20 – 30	17
30 – 50	15
50 – 70	16
70 – 100	26

Construct a histogram to represent the above data.

28. Two dice are thrown simultaneously 525 times. Each time the sum of two numbers appearing on their tops is noted and recorded as given in the following table

Sum	2	3	4	5	6	7	8	9	10	11	12	Total
Frequency	24	25	62	45	42	70	70	63	46	28	50	525

If the dice are thrown once more, what is the probability of getting a sum

(i) of 9

(ii) less than or equal to 6

(iii) which is a multiple of 4

{iv) which is a perfect square