PRACTICE QUESTIONS
SUBJECT - MATHEMATICS
CLASS – IX

General Instructions :

- All questions are **compulsory**.
- The question paper consists of **31** questions divided into five **sections A, B, C** ,D and **E**. **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. **Section E comprises of two questions of 3 marks each and 1 question of 4 marks from Open Text theme.**
- There is no overall choice.
- Use of calculator is not permitted.
- **Please check that this question paper contains 04 printed pages.**

SECTION-A

Question numbers 1 to 4 carry one mark each.

Q.1 Find the distance of the chord of length 16cm from the center of the circle of radius 10cm.

Q.2 Find the ratio of principal diagonal and diagonal of face of a cube.

Q.3 What is the class mark of the class 40-50 .

Q4. The mean of x_1 and x_2 is 8 and the mean of x_1 x_2 and x_3 is 9.Find x_3

SECTION-B

Question numbers 5 to 10 carry two marks each.

Q.5 Find the value of 'm', if (-m, 3) is a solution of equation $4x + 9y - 3 = 0$

Q.6 ABCD is a rhombus with∠ABC = 50^0 .Determine ∠ACD.

Q.7 In the fig, chord AB of a circle with center O, is produced to C such that BC=OB.CO is joined and produced to meet the circle in D. if ∠ACD = y and ∠AOD = x show that x=3y.
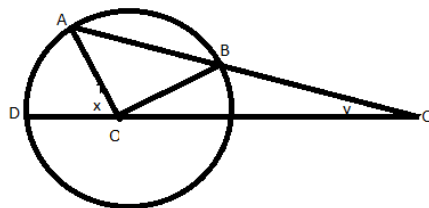
Q.8 Find the length of longest pole that can be put in a room of dimensions 10m x10m x5m.

Q.9 A bag has 3red and 7 black balls. one ball is taken out of the bag. Find the probability that it is a (i) Red ball (ii) Black ball.

Q.10 Diagonal AC and BD of a quadrilateral ABCD intersect each other at P. Show that

$$ar(\Delta APB) \times ar(\Delta CPD) = ar(\Delta APD) \times ar(\Delta BPC)$$

SECTION-C

Question numbers 11 to 18 carry three marks each.

Q.11 If x is the number of hours a labor is on work and y in his wages in rupees. then y=4x+3 . Draw the work wages graph of this equation. From the graph, find the wages of a labor who puts in 4 hours of work.

Q.12 The mean of following distribution is 7, find the value of p.

x_i	5	6	7	8	9
f_i	4	6	12	p	8

Q.13 PQ and RS are two equal parallel line segments. Any point M not lying on PQ and RS is joined to Q and S and lines through P parallel to QM and through R parallel to SM meet at N. Prove that the line segments MN and PQ are equal and parallel to each other.

Q.14 The percentage of marks obtained by a student in the monthly unit test are given below :

Unit test	I	II	III	IV	V
% of marks	58	62	77	63	85

(i) at least 60% marks (ii) 75% or above (iii) less than 65% marks.

Q.15 XY is a line parallel to side BC of a ΔABC if BE $\parallel$ AC and CF $\parallel$ AB meet XY at E and F respectively, show that ar(ΔABE) = ar(ΔACF)

Q.16 Construct a triangle ABC in which BC = 4.7 cm. AB + AC = 8.2 cm and $\angle C = 60^0$

Q.17 How many meters of 5cm wide cloth will be required to make a conical tent , the radius of

of whose base is 3.5 m and height is 12m ?

Q.18 A random survey of the number of children of various age groups playing in a park was found as follows:

Age (in years)	1-2	2-3	3-5	5-7	7-10	10-15	15-17
Number of children	5	3	6	12	9	10	4

Draw a histogram to represent the above data.

SECTION-D
Question numbers 19 to 28 carry four marks each

Q.19 Shade the triangle formed by the graph of 2x – y = 4 x+y = 2 and the y-axis.
Write the co-ordinates of vertices of the triangle.

Q.20 Yamini and Fatima, two students of class IX of a school, together contributed Rs 100 towards the Prime minister s relief fund to help the earth quake victims. Write a linear equation which satisfies this data. Taking their contributions as Rs x and Rs y, draw the graph of the same. Which value is shown by Yamini and Fatima?

Q.21 ABCD is a rectangle and P, Q, R and S are the midpoints of sides AB , BC, CD and DA respectively. Show that the quadrilateral PQRS is a rhombus.

Q.22   Prove that the angle subtended by an arc at the centre of the circle is double the angle subtended by it at any point on the remaining part of the circle.

Q.23 Construct a Δ PQR in which QR = 6 cm, $\angle Q = 60^0$ and PR $-$ PQ = 2 cm.

Q.24 The TSA of a sphere and a cube is same. Show that the ratio of the volume of the cube to that of sphere is $\sqrt{\pi} : \sqrt{6}$.

Q.25 The height of a conical tent is 7 m and radius of its base is 24 m. What length of cloth of width 100 m is needed to make the tent?

Q.26 Adie is tossed 216 times. The results were as followed:

Outcome	1	2	3	4	5	6
Frequency	40	35	25	35	36	45

Find the probability of each outcome. Also verify that the sum of all probabilities is 1.

Q.27 The marks obtained by 40 students of a class in Science (out of 100) are as follows:

50,42,48,78,83,9,70,52,43,38,5,16,20.65,41,18,24,37,60,25,18,23,47,95,17,93,3,94,6,74,66,29,13,19,27,94,80,35,48,62

Form a frequency table and a cumulative frequency table with equal intervals, one of them being (0 – 10) for the data.

Q.28 Show that the diagonals of a square are equal and bisect each other at right angle.