INFINITY THINK BEYOND.....

AN EDUCATIONAL INSTITUTE

IX TERM 2

Final Term Maths **MIND CURVE** Practice Paper Series 2024-25

PRACTICE PAPER 03

By Deepika Bhati Teaching Mathematics Passionately since 2009

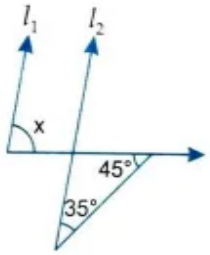
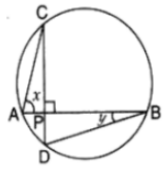
S no	Syllabus Covered	Marking Scheme
1.	Unit 1 Number system	10
2.	Unit 2 Algebra	20
3.	Unit 3 Coordinate Geometry	04
4.	Unit 4 Geometry	27
5.	Unit – 5 Mensuration	13
6.	Unit – 6 Statistics & Probability	06

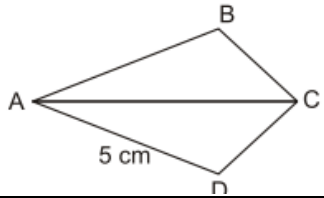
Note: Students/Teachers can refer to this Sample Paper for practice purpose. However, students may find or experience different exam pattern as syllabus or marking scheme may vary school to school.

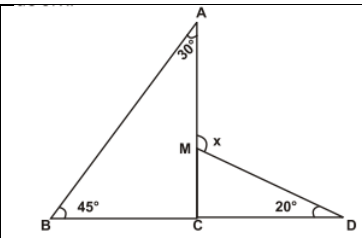
MM:80 | **GENERAL INSTRUCTIONS** | **TIME:3Hr**

READ CAREFULLY ALL INSTRUCTIONS

1. **This Question Paper has 5 Sections A, B, C, D and E.**
2. **Section A has 20 MCQs carrying 1 mark each**
3. **Section B has 5 questions carrying 02 marks each.**
4. **Section C has 6 questions carrying 03 marks each.**
5. **Section D has 4 questions carrying 05 marks each.**
6. **Section E has 3 case based integrated units of assessment (04 marks each) with sub parts of the values of 1, 1 and 2 marks each respectively.**
7. **All Questions are compulsory. However, an internal choice in 2 Qs of 5 marks, 2 Qs of 3 marks and 2 Questions of 2 marks has been provided. An internal choice has been provided in the 2marks questions of Section E**
8. **Draw neat figures wherever required. Take π =22/7 wherever required if not stated.**
9. **This paper consists of 38 questions.**
    a. **Write your answers neatly and legibly.**
    b. **Ensure you have not left any question unanswered**

	Section A Consists of 20 questions of 1 mark each.	
1	Can we write 0 in the form of p/q? (a) yes (b) no (c) cannot be explained (d) none of these	**1**
2	The length of each side of an equilateral triangle of area $4\sqrt{3}$ sq.cm is (a) 4cm (b) $\frac{4}{\sqrt{3}}$ cm (c) $\frac{\sqrt{3}}{4}$ (d) 3cm	**1**
3	The coefficient of x^2 in $4x^2 + 3x + 1$ is : (a) 1 (b) 3 (c) 4 (d) 0	**1**
4	Zero of the zero polynomial is : (a) 0 (b) 1 (c) any real number (d) do not defined	**1**
5	Point (3, 4) lies on the graph of the equation 3y = kx + 7. The value of k is: (a) $\frac{4}{3}$ (b) $\frac{5}{3}$ (c) 3 (d) $\frac{7}{3}$	**1**
6	In figure $l_1 \parallel l_2$, the value of x is :  (a) 80° (b) 100° (c) 110° (d) 70°	**1**
7	Which of the following is a polynomial? (a) $\frac{1}{x}$ (b) $\frac{1}{x^2}$ (c) $\frac{x^{\frac{3}{2}}}{\sqrt{x}}$ (d) none of these	**1**
8	The measure of an angle is 5 times its complement. The angle measures : (a) 25° (b) 35° (c) 65° (d) 75°	**1**
9	The mid – value of a class interval is 42. If the class size is 10, Then the upper and the lower limits of the class interval are : (a) 37 and 47 (b) 47 and 37 (c) 37.5 and 47.5 (d) 47.5 and 37.5	**1**
10	The sides of a triangle are 122 m, 22 m and 120 m respectively. The area of the triangle is: (a) 1320 sq.m (b) 1300 sq.m (c) 1400 sq.m (d) 1420 sq.m	**1**
11	In a triangle if the measure of an angle is equal to sum of the measures of the remaining two angles, then the triangle is : (a) right angled triangle (b) acute angled triangle (c) obtuse angled triangle (d) equilateral triangle	**1**
12	Congruent arc of the circle subtend : (a) Different angle at the centre (b) Same angle at the centre (c) Both a and b (d) None of these	**1**
13	In the given figure ,if chords AB and CD of the circle intersect each other at right angles .  (a) 75^0 (b) 90^0 (c) 45^0 (d) 60^0	**1**

14	The chords which are equidistant from the centre are : (a) parallel chords (b) perpendicular chords (c) equal chords (d) different chords	**1**
15	The total surface area of the cube of side 2 cm is : (a) $24cm^2$ (b) $0.0024\ m^2$ (c) Both a and b (d) none of these	**1**
16	Quadrilateral becomes square if (a) Diagonals bisect at 90 degrees (b) Diagonals are equal (c) Equal diagonal bisect at 90 degrees (d) Adjacent sides are equal	**1**
17	If in a object there are 15 cubes and side of the each cube is 3 cm then the volume of the whole object is **:** (a) $27cm^3$ (b) $405cm^3$ (c) $40.5cm^3$ (d) none of these	**1**
18	Any point on line x = y is of the form: (a) (k, -k) (b) (0, k) (c) (k, 0) (d) (k, k)	**1**
19	**Assertion (A)** : The sides of a triangle are in the ratio of 25 :14 :12 and its perimeter is 510 m. Then the greatest side is 250 cm. **Reason(R) :** Perimeter of a triangle = a + b + c , where a,b,c are sides of a triangle. (a) Both assertion and reason are true and reason is the correct explanation of assertion (b) Both assertion and reason are true but reason is not the correct explanation of assertion (c) Assertion is true but reason is false**.** (d) Assertion is false but reason is true.	**1**
20	**Assertion(A)** : the Decimal fraction of $\frac{\frac{12}{12}}{125}$ is 0.096 **Reason(R)** : the Decimal fraction of $\frac{1}{9}$ is 0.111. (a) Both assertion and reason are true and reason is the correct explanation of assertion (b) Both assertion and reason are true but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Assertion is false but reason is true.	**1**
	Section B **Consists of 5 questions of 2 marks each**	
21	State Euclid,s fifth postulate .	**2**
22	Show that p – 1 is a factor of $p^{10} + p^8 + p^6 – p^4 – p^2 – 1$ Or Find the value of a : $\frac{6}{3\sqrt{2}-2\sqrt{3}} = 3\sqrt{2} - a\sqrt{3}$.	**2**
23	In the given figure , AC bisects ∠A and ∠C . If AD = 5cm find AB. 	**2**
24	Find the value of x .	**2**



25 The height of a conical vessel is 3.5 cm.If its capacity is 3.3 lites of milk .Find the diameter of its base . **2**

or

The radius and slant height of a cone are in the ratio 4:7 .If its curved surface ara is 792 cm^2,find its radius.(use $\pi = \frac{22}{7}$)

Section C

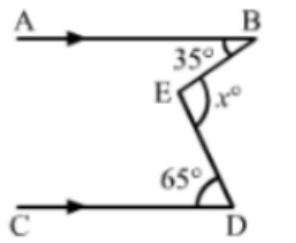
Consists of 5 questions of 3 marks each.

26 The perimeter of an isosceles triangle is 32 cm .The ratio of the equal side to its base is 3:2.Find the area of the triangle. **3**

or

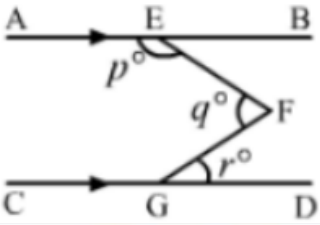
The perimeter of a triangle is 480 meters and its sides are in the ratio of 1:2:3.Find the area of the triangle ?

27 In each of the figures given below ,AB II CD .Find the value of x^0 in each case. **3**



Or

In the given figure ,AB II CD .Prove that p + q – r = 180.



28 If (m – 2 , 2m +1) lies on equation 2x +3y – 10 = 0, find m. **3**

29 Find the values of a and b if $\frac{3+\sqrt{7}}{3-\sqrt{7}} = a + b\sqrt{7}$. **3**

30 A die thrown 1000 times with this following frequencies for the outcomes 1,2,3,4,5 and as given below .Draw the bar graph of the following data . **3**

Outcomes	1	2	3	4	5	6
Frequency	175	125	250	150	100	200

31 Factorise : $y^3 + y^2 - 4y - 4$. **3**

Section D

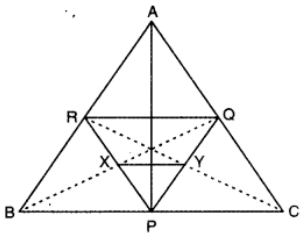
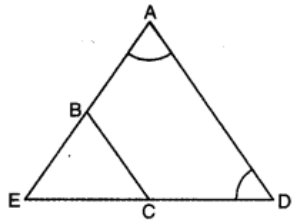
Consists of 4 questions of 5 marks each.

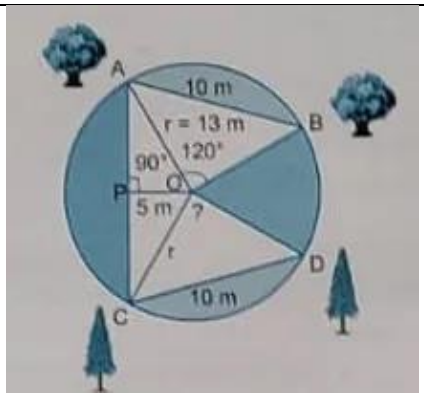
32 If $x = \frac{(\sqrt{2}+1)}{(\sqrt{2}-1)}$ and $y = \frac{(\sqrt{2}-1)}{(\sqrt{2}+1)}$, find the value of $x^2 + y^2 + xy$. **5**

Or

Simplify : $\frac{7\sqrt{3}}{\sqrt{10}+\sqrt{3}} - \frac{2\sqrt{5}}{\sqrt{6}+\sqrt{5}} - \frac{3\sqrt{2}}{\sqrt{15}+3\sqrt{2}}$.

33 Express the following in the form p/q where p and q are integers and q ≠ 0 : $0.\overline{4} + 0.1\overline{8}$. **5**

34	In the figure, P, Q and R are the mid-points of the sides BC, AC and AB of ΔABC. If BQ and PR intersect at X and CR and PQ intersect at Y, then show that XY = 1 / 4 BC.  or In the given figure, AE = DE and BC || AD. Prove that the points A, B, C and D are concyclic. Also, prove that the diagonals of the quadrilateral ABCD are equal.  	**5**
35	Arihant builds a room measuring roof 22 m by 20 m. He also builds a cylindrical tank having diameter of base 2 m and height 3.5 m adjoining the room to collect the rainwater of roof for harvesting. If the tank is just filled with rainwater, find the rainfall in cm.	**5**
	Section E **CASE BASE STUDY** **Consists of 3 questions of 4 marks each.**	
36	A Mathematics teacher asks students to collect the marks of Mathematics in Half yearly exam. She instructed to all the students to prepare frequency distribution table using the data collected. Ram collected the following marks (out of 50) obtained in Mathematics by 60 students of Class IX 21, 10, 30, 2237, 12, 25, 42, 15, 39, 26, 32, 18, 27, 28, 19, 29, 35, 31, 24, 36, 18, 20, 38, 22, 44, 16, 24, 10, 27, 39, 28, 49, 29, 32, 23, 31, 21, 34, 22, 23, 36, 24, 36, 33, 47, 48, 50, 39, 20, 7, 16, 36, 45, 47, 30, 22, 17., 33, 5.  Answer the following questions based on above information (i)How many students scored more than 20 but less than 30? (ii)How many students scored less than 20 marks? (iii)What is the frequency of the class interval 40 – 50? or What is the frequency of the class interval 30 – 40?	**1** **1** **2**
37	A farmer has circular garden as shown in the picture below. He has a different type of trees, plants and flower plants in his garden. In the garden, there are two mango trees A and B at a distance of 10 m. Similarly, he has two Ashoka trees at a distance of 10 m as shown at C and D.AB subtends ∠AOB = 120° at the centre O. The perpendicular distance of AC from centre is 5 m. The radius of the circle is 13 m.	



Answer the following questions based on above information:

(i)What is the measure of ∠COD? **1**

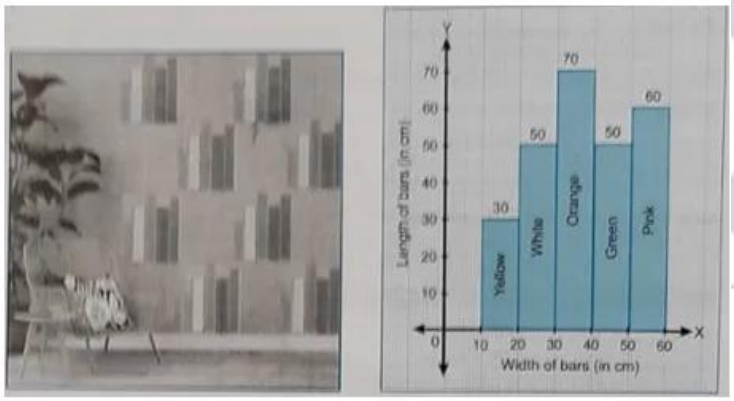
(ii) What is the distance between mango tree A and Ashoka tree C? **1**

(iii) How much distance is covered by the farmer if he goes to water all the trees starting from Tree B to Tree A then to Tree C and then to Tree D. **2**

or

Find the ratio of the Area of circle to triangle AOC.

38 Jay decorated one of his bed room wall as shown in the picture. He was having rectangular wooden pieces of different colours to fix on the wall.



Answer the following questions based on above information:

(i)What is the class size of class interval in above histogram? **1**

(ii)What is sum of class mark of class interval 30-40 and 40-50? **1**

(iii)Draw the frequency Polygon for above histogram. **2**

or

Write the formula for adjusted frequency when class size of given intervals vary.