



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

PRACTICE PAPER 01

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.

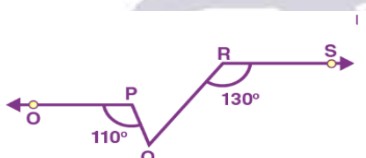
MM:80

GENERAL INSTRUCTIONS

TIME:3Hr

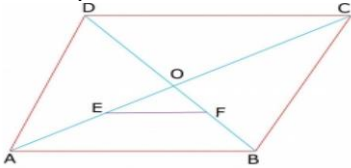
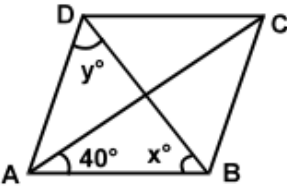
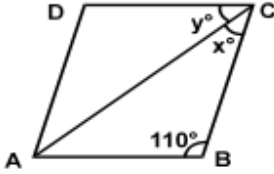
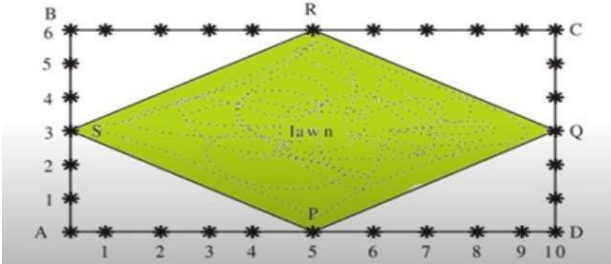
READ CAREFULLY ALL INSTRUCTIONS

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 $\pi = 22/7$ 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	$4\sqrt{5} + 5\sqrt{5}$ is equal to: (a) $9\sqrt{5}$ (b) $9\sqrt{10}$ (c) $5\sqrt{10}$ (d) $7\sqrt{5}$	1
2	Euclid stated that all right angles are equal to each other in the form of : (a) Definition (b) proof (c) postulate (d) axiom	1
3	If (2, 0) is a solution of the linear equation $2x + 3y = k$, then the value of k is (a) 2 (b) 4 (c) 5 (d) 6	1
4	The value of $p(x) = 5x - 4x^2 + 3$ for $x = 0$ is: (a) 3 (b) 2 (c) -3 (d) - 2	1
5	If we multiply or divide both sides of a linear equation with the same non-zero number, then the solution of the linear equation: (a) Remains the same (b) Changes (c) Changes in case of multiplication only (d) Changes in case of division only	1
6	In the given figure, if $OP \parallel RS$, $\angle OPQ = 110^\circ$ and $\angle QRS = 130^\circ$, then $\angle PQR$ is equal to  (a) 40° (b) 50° (c) 60° (d) 70°	1
7	On dividing $x^3 + 3x^2 + 3x + 1$ by $x + \pi$ we get remainder (a) $-\pi^3 - 3\pi^2 - 3\pi + 1$ (b) $\pi^3 - 3\pi^2 - 3\pi + 1$ (c) $-\pi^3 - 3\pi^2 - 3\pi - 1$ (d) $-\pi^3 + 3\pi^2 - 3\pi - 1$	1
8	Angles of a triangle are in the ratio 2 : 4 : 3. The smallest angle of the triangle is (a) 20° (b) 40° (c) 60° (d) 80°	1
9	Find the range of the following data: 25, 18, 20, 22, 16, 6, 17, 15, 12, 30, 32, 10, 19, 8, 11, 20. (a) 10 (b) 15 (c) 18 (d) 26	1
10	The length of each side of an equilateral triangle having an area of $9\sqrt{3} \text{ cm}^2$ is (a) 8 cm (b) 36 cm (c) 4 cm (d) 6 cm	1
11	It is given that $\triangle ABC \cong \triangle FDE$ and $AB = 5 \text{ cm}$, $\angle B = 40^\circ$ and $\angle A = 80^\circ$. Then which of the following is true? (a) $DF = 5 \text{ cm}$, $\angle F = 60^\circ$ (b) $DF = 5 \text{ cm}$, $\angle E = 60^\circ$ (c) $DE = 5 \text{ cm}$, $\angle E = 60^\circ$ (d) $DE = 5 \text{ cm}$, $\angle D = 40^\circ$	1
12	If $AB = 12 \text{ cm}$, $BC = 16 \text{ cm}$ and AB is perpendicular to BC , then the radius of the circle passing through the points A, B and C is: (a) 6cm (b) 8 cm (c) 10 cm (d) 12 cm	1
13	If APB and CQD are two parallel lines, then the bisectors of the angles APQ , BPQ , CQP and PQD form (a) square (b) rectangle (c) rhombus (d) any other parallelogram	1
14	AD is the diameter of a circle and AB is a chord. If $AD = 34 \text{ cm}$, $AB = 30 \text{ cm}$, the distance of AB from the centre of the circle is (a) 4cm (b) 8cm (c) 15 cm (d) 17 cm	1
15	The total surface area of a cone whose radius is $r/2$ and slant height $2l$ is (a) $2\pi r(l+r)$ (b) $\pi r(l+(r/4))$ (c) $\pi r(l+r)$ (d) $2\pi rl$	1

16	The quadrilateral formed by joining the mid-points of the sides of a quadrilateral PQRS, taken in order, is a rectangle, if (a) PQRS is a rectangle (b) PQRS is a parallelogram (c) Diagonals of PQRS are perpendicular (d) Diagonals of PQRS are equal	1														
17	The radii of two cylinders are in the ratio of 2:3 and their heights are in the ratio of 5:3. The ratio of their volumes is: (a) 10:17 (b) 20: 27 (c) 17: 27 (d) 20: 37	1														
18	$\sqrt[4]{\sqrt[3]{2^2}}$ is equal to (a) $\sqrt{2}$ (b) $\sqrt{6}$ (c) $\sqrt[3]{2}$ (d) $\sqrt[6]{2}$	1														
19	Assertion (A) : The value of $1000^3 - 900^3 - 100^3$ is 270,000,000. Reason (R) : If $a + b + c = 0$, then $a^3 + b^3 + c^3 = 3abc$. (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) : every integer is a rational number Reason(R) : every integer is expressed in the form of $\frac{m}{1}$ so it is rational number (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	Draw a bar graph to represent the data given below : <table border="1"><tr><td>Heads</td><td>Food</td><td>Education</td><td>Clothing</td><td>House rent</td><td>Others</td><td>Savings</td></tr><tr><td>Expenditure (in Rs)</td><td>4000</td><td>2500</td><td>1000</td><td>3500</td><td>2500</td><td>1500</td></tr></table> The data represents the expenditure of a family on different heads in a month .	Heads	Food	Education	Clothing	House rent	Others	Savings	Expenditure (in Rs)	4000	2500	1000	3500	2500	1500	2
Heads	Food	Education	Clothing	House rent	Others	Savings										
Expenditure (in Rs)	4000	2500	1000	3500	2500	1500										
22	Calculate the perimeter of a rectangle whose area is $25x^2 - 35x + 12$. or Find the values of 'a' and 'b' so that $(2x^3 + ax^2 + x + b)$ has $(x + 2)$ and $(2x - 1)$ as factors	2														
23	If $x = k^2$ and $y = k$ is a solution of the equation : $x - 5y + 6 = 0$,find the values of k . or For what value of c , the linear equation $2x + cy = 8$ has equal values x and y for its solution .	2														

24	To protect poor people from cold weather, Ram Lal has given his land to make a shelter home for them. What value is being exhibited by him? In the given figure ,ABCD is a parallelogram P is a point on AD such that $AP = \frac{1}{3} AD$ and Q is a point on BC such that $CQ = \frac{1}{3} BC$. Ramlal ready to give his piece of land AQCP to make shelter in middle of his field ABCD.Prove that field he donate is parallelogram shaped field.	2
25	ABC is an isosceles triangle in which altitudes BE and CF are drawn to equal sides AC and AB respectively .Show that these altitudes are equal .	2
Section C Consists of 5 questions of 3 marks each.		
26	Prove that $(a + b + c)^3 - a^3 - b^3 - c^3 = 3(a + b) (b + c) (c + a)$.	3
27	In the given figure, p q, find the value of x. 	3
28	A bus stop is barricaded from the remaining part of the road , by using 50 hollow cones made of recycled cardboard .Each cone has a base diameter of 40 cm and height 1 m .If the outer side of each of the cones is to be painted and the cost of painting is Rs 12 perm ² , what will be the cost of painting all these cones ? (Use $\pi = 3.14$ and take $\sqrt{1.04} = 1.02$) or A dome of a building is in the form of a hemisphere .From inside ,it was white –washed at the cost of Rs 498.96.If the cost of white washing is Rs 2.00 per square metre ,find the (i) inside surface area of the dome (ii) volume of the air inside the dome.	3
29	Find the value of x if (i) $25^{2x-3} = 5^{2x+3}$ (ii) $(4)^{2x-1} - (16)^{x-1} = 384$ Or Find a and b if $\frac{7+3\sqrt{5}}{2+\sqrt{5}} - \frac{7-3\sqrt{5}}{2-\sqrt{5}} = a + b\sqrt{5}$.	3
30	AC and BD are two chords of a circle that bisect each other . Prove that : (i)AC and BD are diameter. (ii) ABCD is a rectangle.	3
31	If the diameter of a sphere is reduced by 25% by how much percentage the surface area is reduced ? or The inner and outer diameter of a hollow hemispherical container are 24 cm and 25 cm respectively .If the cost of painting 1cm ² of surface is Rs 0.05 ,then what will be the cost of painting total surface of the container .(use $\pi = \frac{22}{7}$)	3
Section D Consists of 4 questions of 5 marks each.		

32	Prove that the line joining the mid points of any two sides of triangles is parallel to third side and half of it. In Fig ABCD is a rhombus. Diagonals AC and BD intersect at O. E and F are mid points of AO and BO respectively. If AC = 16cm and BD = 12cm then find EF. 	5
33	If $\sqrt{2} = 1.414$, then find the value of $\frac{5+\sqrt{50}}{2\sqrt{8} + \sqrt{50} + \sqrt{72} + \sqrt{98}}$.	5
34	Prove that the angle bisectors of a parallelogram form a rectangle. ABCD is rhombus. Find the value of x and y  or Show that if the diagonals of a quadrilateral bisect each other at right angles, then it is a rhombus. In the given figure below, ABCD is rhombus. Find the value of x and y. 	5
35	Three girls Ishita ,Isha and Nisha are playing a game by standing on a circle of radius 20m drawn in a park .Ishita throws a ball to Isha ,Isha to Nisha ,Nisha to Ishita.If the distance between Ishita and Isha and between Isha and Nisha is 24 m each ,what is the distance between Ishita and Nisha ? or A circular park of radius 20 m is situated in a colony.Three boys Ankur ,Syed and David are sitting at equal distance on its boundary each having a toy telephone in his hands to talk each other.Find the length of the string of each phone.	5
Section E CASE BASE STUDY Consists of 3 questions of 4 marks each.		
38	The Class IX students of a secondary school in Ludhiana have been allotted a rectangular plot of land for their gardening activity. Saplings of Gulmohar are planted on the boundary at a distance of 1m from each other. There is a lawn PQRS in the ground as shown in the figure.Now, answer the following questions :  (i) What are the co-ordinates of C taking A as origin?	1

	(ii) What is the shape and area of the lawn? (iii) If a lawn PQRS displaces 4 unit in downward direction then mark all the new co-ordinates of the lawn Or If a lawn PQRS displaces 4 unit in upward direction then mark all the new co-ordinates of the lawn .	1 2
37	Jhanavi bought 5 notebooks and 2 pens for her friends .Total cost of 5 notebooks and 2 pens was Rs 120 .She asked her friends to guess the cost of each notebook and pen .She gave the clue that both the costs are positive integers and divisible by 5 such that the cost of a notebook is greater than that of a pen.All her friends tried to guess the questions Jhanavi asked from her friends.  (i) Form the linear equations in two variables from this situation by taking cost of one notebook as Rs x and the cost of one pen as Rs y . (ii) If the cost of one notebook is twice the cost of one pen ,then find the cost of one pen ? or If cost of a pen is less than the cost of notebook by Rs 3 ,then find the cost of one notebook. (iii) If the cost of one notebook is Rs 15 and cost of one pen is Rs 10 ,then find the total amount .	1 1 2
36	Mahesh took his children for a circus show. The circus tent was cylindrical to a height of 3 metres and conical above it .The diameter of the base and conical top was 105m and the slant height of the conical portion was 53 m. Mahesh asked his elder son studying in grade 9 to find the following .  (i) Find the height of the conical portion. (ii) Find the surface area of the conical part of the tent . or Find the volume of the air in the conical part of the tent. (iii) Calculate the length of the canvas 5 m wide to make the required tent .	1 1 2

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