



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

PRACTICE PAPER 02

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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:8

GENERAL INSTRUCTIONS

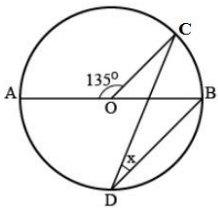
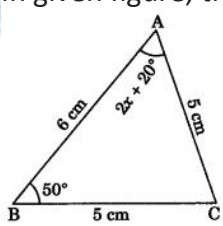
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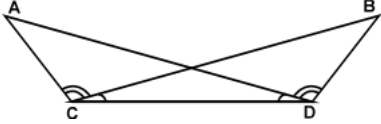
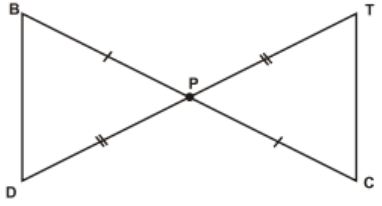
READ CAREFULLY ALL INSTRUCTIONS

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	The value of $f(x) = 5x - 4x^2 + 3$ when $x = -1$, is (a) 3 (b) 12 (c) -6 (d) 6	1
2	If O is the centre of the circle and $\angle 135^\circ$. Find the value of x in the given figure .  (a) 67.5° (b) 22.5° (c) 45° (d) 50°	1
3	Any point on the line $x = y$ is of the form: (a) (k, -k) (b) (0, k) (c) (k, 0) (d) (k, k)	1
4	The value of $p(t) = 2 + t + 2t^2 - t^3$ when $t=0$ is (a) 2 (b) 1 (c) 4 (d) 0	1
5	A diagonal of a rectangle is inclined to one side of the rectangle at 25° . The acute angle between the diagonals is (a) 55° (b) 50° (c) 40° (d) 25°	1
6	If two complementary angles are in the ratio 13 : 5, then the angles are: (a) $13x^\circ$, $5x^\circ$ (b) 25° , 65° (c) 65° , 25° (d) 65° , 35°	1
7	One of the linear factors of $3x^2 + 8x + 5$ is (a) (x+1) (b) (x-2) (c) (x+2) (d) (x-4)	1
8	The height of cone is 16cm and its base radius is 12cm . The curved surface area and total surface area are in the ratio (a) 5:8 (b) 8:5 (c) 5:3 (d) 3:5	1
9	In the class intervals 10-20, 20-30, 20 is included in which interval? (a) 10-20 (b) 20-30 (c) Both the intervals (d) None of the intervals	1
10	The sides of a triangle are 35 cm, 54 cm and 61 cm, respectively. The length of its longest altitude (a) $16\sqrt{5}$ cm (b) $10\sqrt{5}$ cm (c) $24\sqrt{5}$ cm (d) 28 cm	1
11	In given figure, the measure of $\angle BAC$ is  (a) 60° (b) 50° (c) 70° (d) 80°	1
12	ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and $\angle ADC = 140^\circ$, then $\angle BAC$ is equal to: (a) 30° (b) 40° (c) 50° (d) 80°	1
13	If angles A, B, C and D of the quadrilateral ABCD, taken in order, are in the ratio 3:7:6:4, then ABCD is a (a) Kite (b) Rhombus (c) Parallelogram (d) Trapezium	1
14	The angle subtended by the diameter of a semi-circle is: (a) 90° (b) 45° (c) 180° (d) 60°	1

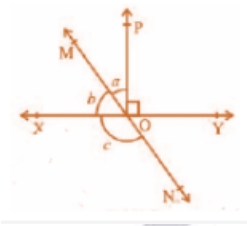
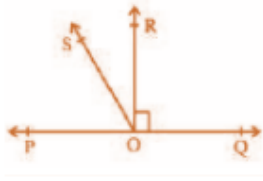
15	The length of the longest pole that can be put in a room of dimensions (10 m × 10 m × 5m) is : (a) 15m (b) 16 m (c) 10 m (d) 12m	1
16	A diagonal of a rectangle is inclined to one side of the rectangle at 25°. The acute angle between the diagonals is : (a) 25° (b) 40° (c) 50° (d) 55°	1
17	A cone is 8.4 cm high and the radius of its base is 2.1 cm. It is melted and recast into a sphere. The radius of the sphere is (a) 4.2 cm (b) 2.1 cm (c) 2.4 cm (d) 1.6cm	1
18	The point on the graph of the linear equation $2x - 5y = 19$, whose ordinate is $1\frac{1}{2}$ times its abscissa , is : (a) (2,3) (b) (3,2) (c) (-2,-3) (d) (-3,-2)	1
19	Assertion (A): perimeter of triangle = $\left(\frac{a+b+c}{2}\right)$. Reason(R): If the sides of the triangle are 30m, 24m and 22 m then it's perimeter is 76 m. (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) :0.468 is a terminating decimal. Reason (R) : A decimal in which a digit or a set of digits is repeated periodically, is called a repeating, or a recurring decimal (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	If a point C lies between two points A and B such that $AC = BC$, then prove that $AC = \frac{1}{2}AB$. Explain by drawing the figure	2
22	Find the value of the polynomial $5x - 4x^2 + 3$ at $x = 2$ and $x = -1$. 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	In the given figure $\angle BCD = \angle ADC$ and $\angle ACB = \angle BDA$. Prove that $AD = BC$ and $\angle A = \angle C$.  or In the given figure ,which of the two triangles are congruent? Name them in symbolic form. 	2
24	Find the coordinates of two points on x-axis and two points on y axis which are at equal distance from the origin?	2

25	Draw a bar graph to represent the data given below : The data represents the expenditure of a family on different heads in a month.						2
	Head	Food	Education	Clothing	House rent	Others	Savings
	Expenditure (in Rs)	4000	2500	1000	3500	2500	1500

Section C

Consists of 5 questions of 3 marks each.

26	What must be subtracted from $4x^4 - 2x^3 - 6x^2 + x - 5$ so that the result is exactly divisible by $2x^2 + 3x - 2$? or When $f(x) = x^4 - 2x^3 + 3x^2 - ax + b$ is divided by $x + 1$ and $x - 1$, we get remainders as 19 and 5 respectively ,Find the remainder if $f(x)$ is divided by $x - 3$.	3
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27	In the Figure, lines XY and MN intersect at O. If $\angle POY = 90^\circ$ and $a : b = 2 : 3$, find c.  or In the Figure, POQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. Prove that $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$. 	3
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28	Show that the points A (1, 2), B (- 1, - 16) and C (0, - 7) lie on the graph of the linear equation $y = 9x - 7$.	3
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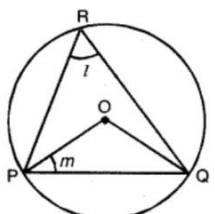
29	If $a = \frac{1}{3-\sqrt{8}}$ and $b = \frac{1}{3+\sqrt{8}}$,find the value of $(a + b)^2$. Or If $x = \frac{\sqrt{2}+1}{\sqrt{2}-1}$ and $y = \frac{\sqrt{2}-1}{\sqrt{2}+1}$,then show that $x^2 + xy + y^2 = 35$	3
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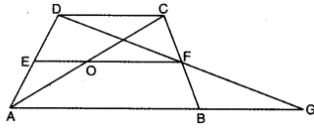
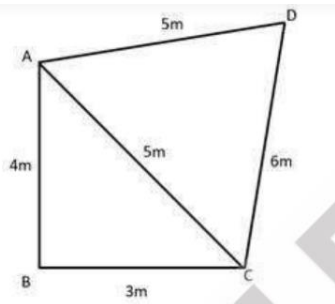
30	The ages (in years) of 360 patients treated in a hospital on a particular day are given below :						3	
	Age in years	10-20	20-30	30-40	40-50	50-60		60-70
	No. of patients	90	40	60	20	120		30
	Draw the frequency polygon for above data.							

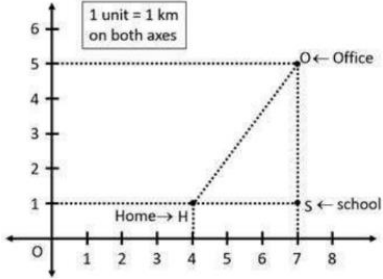
31	Factorize : $7\sqrt{2}k^2 - 10k - 4\sqrt{2}$.	3
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Section D

Consists of 4 questions of 5 marks each.

32	Prove that quadrilateral formed by angle bisector of cyclic quadrilateral is also cyclic also find l+m in the figure given below: 	5
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33	Prove that : $\frac{x^{-1}}{x^{-1}+y^{-1}} + \frac{x^{-1}}{x^{-1}-y^{-1}} = \frac{2y^2}{y^2-x^2}.$	5
34	In the figure, ΔBCD is a trapezium in which $AB \parallel DC$. E and F are the mid-points of AD and BC respectively. DF and AB are produced to meet at G. Also, AC and EF intersect at the point O. Show that : (i) $EO \parallel AB$ (ii) $AO = CO$  or ABCD is a parallelogram. If the bisectors DP and CP of angles D and C meet at P on side AB, then show that P is the mid-point of side AB.	5
35	A lead pencil consists of a cylinder of wood with a solid cylinder of graphite filled in the interior. The diameter of the pencil is 7 mm and the diameter of the graphite is 1 mm. If the length of the pencil is 14 cm, find the volume of the wood and that of the graphite. Or A cloth having area of 165m^2 is shaped into the form of a conical tent of radius 5 m . (i) How many students can sit in the tent if a student on an average , occupies $\frac{5}{7}\text{m}^2$ on the ground ? (ii) Find the volume of the cone.	5
Section E CASE BASE STUDY Consists of 3 questions of 4 marks each.		
36	Reema was very excited about her birthday as only two days were left for her birthday, party. She was telling her tuition teacher about her birthday party and also shown the, things purchased by her for the birthday party such as candles, sweets, caps, cold drinks, cans, fruit juices bottles etc. Her tuition teacher asked Reema to bring caps and cylindrical, containers which they have purchased as she was teaching her "Mensuration Topic"., They observed the cylindrical container has 220 cm circumference and 14 cm height., Conical cap has radius of 15 cm and vertical height 20 cm. On the basis of above information, answer the following questions; (i) What is the radius of cylinder?, (ii)How much fruit juice can be filled in cylinder?, (iii)What will be the slant height of cap?, Or Find out the C.S.A of conical cap.,	1 1 2
37	Ram is planning to buy two adjacent plots of land with the dimensions given below.  Using the details given, answer the following questions. (i)Find the area of plot ADC. (ii)Find the cost of plot ABC if the rate is Rs. 5000 per square meters. (iii)Find the rate of concreting the area of Plot ABC at the rate of Rs. 500 per m^2.	1 1 2

	Or	
	Compare the area of two plot ABC and ADC, Which has larger area and by how much?	
38	Claudia has to reach her office every day at 10:00 am. On the way to her office, she drops her son at school. Now, the location of Claudia's house, her son's school and her office are represented by the map below: Based on the given information , answer the following questions :  (i) Find the coordinates of Claudia's home. (ii) Find the distance between Claudia's home and her son's school. (iii) Find the distance between Claudia's office and her son's school if office and school both shift 2 Km ahead on same path. Or Find the distance between Claudia's office and her son's school if office and school both shift 2 Km back on same path.	1 1 2

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