

MIND CURVE MID-TERM PRACTICE PAPER SERIES 2026-27

Practice Paper – 01

By Deepika Bhati- Teaching Maths Passionately Since 2009

Class: IX

Mathematics

Syllabus: NCERT Ganita Manjari, Part 1

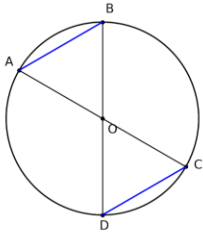
Time Allowed: 3 Hours

Maximum Marks: 80

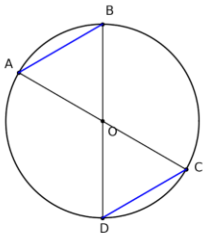
General Instructions

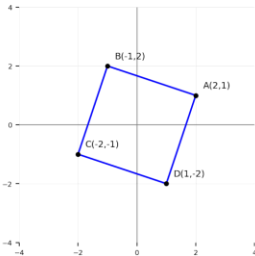
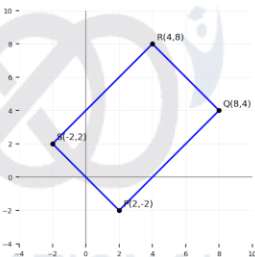
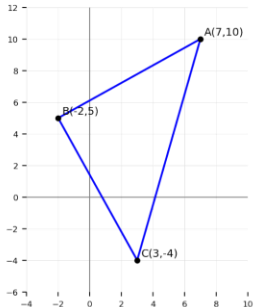
1. This question paper has 5 Sections – A, B, C, D and E.
2. Section A has 18 MCQs (Q1–18) and 2 Assertion–Reason questions (Q19–20), 1 mark each.
3. Section B has 5 questions (Q21–25) of 2 marks each.
4. Section C has 6 questions (Q26–31) of 3 marks each.
5. Section D has 4 questions (Q32–35) of 5 marks each.
6. Section E has 3 case-study based questions (Q36–38) of 4 marks each, with sub-parts of 1, 1 and 2 marks respectively.
7. All questions are compulsory. An internal choice has been provided in 1 question of Section B, 2 questions each of Sections C and D, and in the 2-mark sub-part of every Section-E question — every internal choice offered is from the SAME chapter as the original question.
8. Draw neat figures wherever required. Take $\pi = 22/7$ unless stated otherwise.

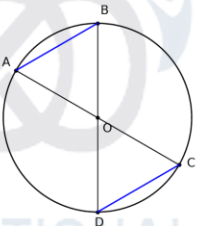
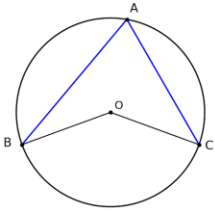
Q. No.	Question	Marks
SECTION – A (Objective Type — Q1 to Q20, 1 mark each)		Marks
1	The coordinates of the reflection of the point $(5, -5)$ in the x -axis are: (a) $(-5, -5)$ (b) $(5, 5)$ (c) $(0, 5)$ (d) $(0, -5)$	1
2	$p(x) = 3\sqrt{7} + 2$ is a polynomial of degree: (a) 0 (b) 1 (c) 2 (d) 3	1
3	$1.999\dots$ expressed in the form $\frac{p}{q}$, where p, q are integers and $q \neq 0$, is: (a) $\frac{19}{10}$ (b) $\frac{1999}{1000}$ (c) 2 (d) $\frac{1}{9}$	1

Q. No.	Question	Marks
4	A rational number in its lowest form has denominator $2^6 \times 5^7$. How many decimal places will its decimal expansion have? (a) 4 (b) 7 (c) 13 (d) 1	1
5	On which number line is the position of $\sqrt{6}$ shown correctly? (a) between 2 and 3 (b) between 1 and 2 (c) between 3 and 4 (d) between 0 and 1	1
6	$(a + b)^2 - 4ab$ equals: (a) $8ab$ (b) $-8ab$ (c) $(a - b)^2$ (d) $a^2 - b^2$	1
7	The expression $a^3 - b^3 - 3ab(a - b)$ is the expansion of: (a) $(a + b)^3$ (b) $(a - b)^3$ (c) $(a^3 + b^3)$ (d) $(a - b)^2$	1
8	One factor of $(25x^2 - 1) + (1 + 5x)^2$ is: (a) $5 + x$ (b) $5 - x$ (c) $5x - 1$ (d) $10x$	1
9	The coefficient of x^2 in the expression $(x^2 - 5)(7 + 3x^2)$ is: (a) 12 (b) 5 (c) -8 (d) 8	1
10	In a circle, two equal chords AB and CD are joined to the centre O. Which triangles are congruent?  (a) $\triangle AOB \cong \triangle COD$ (b) $\triangle AOB \cong \triangle DOC$ only if $AB \parallel CD$ (c) they are never congruent (d) $\triangle AOB$ and $\triangle COD$ have no relation	1

Q. No.	Question	Marks
11	The sides of a triangle are 30 cm, 30 cm and 48 cm, and its area is 432 sq. cm. The radius of the incircle of the triangle is: (a) 25 cm (b) 8 cm (c) 12 cm (d) 20 cm	1
12	Which of the following cannot be the probability of an event? (a) 15% (b) 0.7 (c) $\frac{2}{3}$ (d) -1.5	1
13	A fair coin is tossed two times. The probability of obtaining 'head' at least once is: (a) $\frac{1}{4}$ (b) $\frac{2}{4}$ (c) $\frac{3}{4}$ (d) $\frac{4}{4}$	1
14	A bag contains 3 white, 4 red and 5 black balls. One ball is drawn at random. What is the probability that the ball drawn is neither black nor white? (a) $\frac{1}{4}$ (b) $\frac{1}{2}$ (c) $\frac{1}{3}$ (d) $\frac{3}{4}$	1
15	Find the value of 'm' so that $8m + 4$, $6m - 2$ and $2m + 7$ form an AP. Then m equals: (a) $\frac{15}{2}$ (b) 3 (c) 5 (d) 1	1
16	In a GP, the 3rd term is 8 and the 6th term is 64. The 9th term is: (a) 512 (b) 256 (c) 128 (d) 1024	1
17	If the sum of n terms of two arithmetic series are in the ratio $7n + 1 : 4n + 27$, then the ratio of their 11th terms is: (a) 4 : 3 (b) 3 : 2 (c) 2 : 1 (d) 1 : 1	1
18	If we multiply a number by $\frac{5}{2}$ and add $\frac{2}{3}$ to the product, we get $-\frac{7}{12}$. This number, as the first term of an AP with common difference $\frac{1}{2}$, has 5th term equal to: (a) $\frac{3}{2}$ (b) -1 (c) 2 (d) 0	1

Q. No.	Question	Marks
19	Assertion (A): $0.\overline{7}$ is a rational number. Reason (R): Every number whose decimal expansion is non-terminating and recurring can be expressed in the form $\frac{p}{q}$, $q \neq 0$. (a) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A). (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A). (c) Assertion (A) is true, but Reason (R) is false. (d) Assertion (A) is false, but Reason (R) is true.	1
20	Assertion (A): The midpoint of every diameter of a circle is the centre of the circle. Reason (R): Every diameter of a circle passes through the centre. (a) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A). (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A). (c) Assertion (A) is true, but Reason (R) is false. (d) Assertion (A) is false, but Reason (R) is true.	1
SECTION – B (Very Short Answer — Q21 to Q25, 2 marks each)		Marks
21	Find the coordinates of the point M : (a) whose ordinate is -5 and which lies on the y -axis, (b) whose abscissa is 3 and which lies on the x -axis.	2
22	A learning platform charges a fixed monthly fee b and an additional cost per digital module accessed. A student's bill was Rs. 400 for 10 modules and Rs. 500 for 14 modules. If $y = ax + b$, find the values of a and b .	2
23	Write two rational numbers between $\frac{1}{2}$ and $\frac{3}{4}$. OR Find any two rational numbers between $\frac{1}{6}$ and $\frac{5}{8}$.	2
24	Find the value of a if $10000a = (9985)^2 - (15)^2$, using a suitable identity.	2
25	Two equal chords AB and CD of a circle, when produced, meet at a point outside the circle. Given the radius is 7.5 cm and each chord is 9 cm, find the distance of each chord from the centre. 	2

Q. No.	Question	Marks
SECTION – C (Short Answer — Q26 to Q31, 3 marks each)		Marks
26	Plot the points $A(2, 1)$, $B(-1, 2)$, $C(-2, -1)$ and $D(1, -2)$ on the Cartesian plane. Is $ABCD$ a square? Find the distance between A and C.  OR Plot the points $P(2, -2)$, $Q(8, 4)$, $R(4, 8)$ and $S(-2, 2)$ in the Cartesian plane. Find the length of the diagonal PR. 	3
27	Show that the points $A(7, 10)$, $B(-2, 5)$ and $C(3, -4)$ are the vertices of an isosceles right triangle. 	3
28	A telecom company has a linear relationship between the bill generated and the data (in GB) used, given by $y = 20x + 150$. Find (i) the bill for 18 GB of data, (ii) the bill for 25 GB of data, (iii) the slope and the constant of this equation. OR A shopkeeper sells two types of cloth. The profit P (in Rs.) on selling x metres of cloth A is $P(x) = 40x - 120$. Find the zero of $P(x)$ and interpret its meaning in context.	3
29	A gym charges a fixed admission fee together with a fixed monthly fee. The total amount y (in Rs.) for x months is given by $y = 30x + 500$. Find the amount payable for 12 months.	3

Q. No.	Question	Marks
30	The minute hand of a clock is 12 cm long. Find the area of the face of the clock described by the minute hand in 35 minutes.	3
31	A number of two-digit numbers are divisible by 4. How many such numbers are there? (Show the working, then use this count to state the probability that a randomly chosen two-digit number is divisible by 4.)	3
SECTION – D (Long Answer — Q32 to Q35, 5 marks each)		Marks
32	Prove that $(a+b+c)^2 - (a^2+b^2+c^2) = 2(ab+bc+ca)$. Hence, find the value of $(ab+bc+ca)$ when $a+b+c=0$ and $a^2+b^2+c^2=18$. OR If $9x^2 + 25y^2 = 181$ and $xy = -6$, find the value of $3x + 5y$.	5
33	Prove that equal chords of a circle subtend equal angles at the centre. Using this, chords $AB = CD = 9$ cm in a circle of radius 7.5 cm, and $\angle AOB = 80^\circ$. Find $\angle COD$ and the distance of each chord from the centre.  OR Prove that the angle subtended by an arc of a circle at the centre is double the angle subtended by it at any point on the remaining part of the circle. If $\angle BOC = 100^\circ$ for chord BC and A is a point on the major arc, find $\angle BAC$. 	5
34	A rhombus-shaped park has perimeter 100 m and one diagonal 48 m. Find the area of the park and the length of the other diagonal. OR An isosceles trapezium field has parallel sides 25 m and 15 m and each slant side 13 m. Find its area and its perimeter.	5

Q. No.	Question	Marks
35	A telecom company charges Rs. 990 for a certain prepaid recharge scheme, and the balance reduces by Rs. 15 each day after recharge. (i) Write an equation modelling the remaining balance $b(x)$ after x days, and explain why this represents linear decay. (ii) After how many days will the balance run out? (iii) Make a table of values of $b(x)$ for x from 1 to 5 days. (This is a linear-model question; treat the daily balance readings as a sample space and find the probability that, on a randomly chosen day from day 1 to day 5, the remaining balance exceeds Rs. 900.) OR During a cricket match, a batswoman hits a boundary 15 times out of 25 deliveries played. (i) Calculate the probability that she hits a boundary on a delivery chosen at random. (ii) Calculate the probability that she does NOT hit a boundary on a delivery chosen at random. (iii) If she faces 40 more deliveries at the same rate, estimate the number of boundaries she would hit.	5
SECTION – E (Case-Study Based — Q36 to Q38, 4 marks each)		Marks
36	In a school, 5 out of every 7 children participated in a ‘SAVE WILDLIFE’ campaign organised by the school. <i>Based on the above information, answer the following questions:</i> (i) What fraction of the students participated in the campaign? Find its decimal expansion. [1 mark] (ii) What kind of decimal expansion is this (found in part (i))? [1 mark] (iii) Find four rational numbers between $\frac{2}{5}$ and $\frac{2}{3}$. [2 marks] OR Find four irrational numbers between $\frac{2}{5}$ and $\frac{2}{3}$. [2 marks]	4
37	A student has Rs. 200. He spends Rs. 150 on books. Then his father gives him Rs. 400, following Brahmagupta’s laws of Fortune and Debt. <i>Based on the above information, answer the following questions:</i> (i) Which integer sequence correctly represents these three transactions in order? [1 mark] (ii) What is his net financial standing after all three transactions? [1 mark] (iii) If this pattern of ‘spend 150, then gain 400’ repeats every month starting from Rs. 200, write the amounts he has at the start of months 1, 2, 3 and identify whether this sequence is an AP. [2 marks] OR Find the amount he would have after 5 such repeated cycles, starting from Rs. 200. [2 marks]	4

Q. No.	Question	Marks
38	A school canteen plants saplings such that the first section of its garden has 150 saplings. Each successive section has 20 more saplings than the previous one. <i>Based on the above information, answer the following questions:</i> (i) Find the number of saplings in the 5th section. [1 mark] (ii) Is this sequence of saplings-per-section an AP or a GP? Justify your answer. [1 mark] (iii) Which section contains exactly 690 saplings? [2 marks] OR Find the total number of saplings planted across the first 10 sections. [2 marks]	4

BLUEPRINT — Chapter-wise Marks Distribution

Chapter (Ganita Manjari, Part 1)	Marks Allotted	% Weightage	Max. Marks
Orienting Yourself: The Use of Coordinates	9	11%	80
Introduction to Linear Polynomials	9	11%	80
The World of Numbers	10	13%	80
Exploring Algebraic Identities	11	14%	80
I'm Up and Down, and Round and Round	9	11%	80
Measuring Space: Perimeter and Area	9	11%	80
The Mathematics of Maybe: Introduction to Probability	11	14%	80
Predicting What Comes Next: Exploring Sequences and Progressions	12	15%	80
TOTAL	80	100%	80

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