INFINITY THINK BEYOND.....

AN EDUCATIONAL INSTITUTE

XI MIND CURVE Mid Term Maths Test Series 2025-26

Test 01

By Deepika Bhati Teaching Mathematics Passionately since 2009

S no	Syllabus Covered	Chapters(In Half Yearly)	Marking Scheme
1	Chapter 1	Sets	18
2	Chapter 2	Relations & Function	22

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:40 | **GENERAL INSTRUCTIONS** | **Time:1.5Hrs**

READ CAREFULLY ALL INSTRUCTIONS

1. **This Question Paper has 5 Sections A, B, C, D and E.**
2. **Section A has 10 MCQs carrying 1 mark each**
3. **Section B has 3 questions carrying 02 marks each.**
4. **Section C has 2 questions carrying 03 marks each.**
5. **Section D has 2 case based integrated units of assessment (04 marks each) with sub parts of the values of 1, 1 and 2 marks each respectively.**
6. **Section E has 2 questions carrying 05 marks each**
7. **All Questions are compulsory. E**
8. **This paper consists of 19 questions.**
   a. **Write your answers neatly and legibly.**
   b. **Ensure you have not left any question unanswered**

SECTION – A

Questions 1 to 10 carry 1 mark each.

1. If $f(x) = x^3 - (1/x^3)$, then $f(x) + f(1/x)$ is equal to

(a) $2x^3$ (b) $2/x^3$ (c) 0 (d) 1

2. What will be the domain for which the functions $f(x) = 2x^2-1$ and $g(x) = 1-3x$ are equal?

(a){-2.1} (b){1/2,-2} (c){2,12} (d){-1,2}

3.The domain of the function $f(x) = x/(x^2+ 3x + 2)$ is

(a) [-2,-1] (b) R-{1, 2} (c) R-{-1, -2) (d) R-{2}

4. Let $A = \{x : x \in R, x > 4\}$ and $B= \{x \in R : x<5 \}$. Then $A \cap B$ =

(a)(4,5] (b) (4,5) (c) [4,5) (d) [4,5]

5. For any set A, (A') ' is equals to

(a) $A \cap B$ (b) $A' \cap B$ (c) $A \cap B'$ (d) None

6. The difference of A and B If A = {1, 2, 3} and B={3, 4, 5}

(a) {5} (b) {1,2} (c) {1,2,3} (d) ϕ

7.If (x+3, 5) = (6, 2x + y) then x, y is equals to

(a) 3,-1 (b) 3,0 (c) 0,-1 (d) None

8. The range of the function f(x) = $\frac{x^2-x}{x^2+2x}$ is

(a) R (b) R-{1} (c)R-{-1/2,1} (d)None

9. If A = {1, 3, 5, 8) and B = {2, 4} then :

(a) 4 ∈A (b) 8⊂A (c) {4) ⊂ A (d)None of these

Assertion and Reason based questions

Two statements are given, one labelled as Assertion (A) and the other is labelled as Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.

(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.

10. Assertion (A): Domain of f(x) = $\sqrt{x-4}$ is x >4

Reason (R): y= $\sqrt{f(x)}$ is defined if f(x) ≥0..

SECTION – B
Questions 11 to 13 carry 2 mark each.

11. For all sets A and B, A – (A – B) = A∩B

12(A). Use the properties of sets to prove that for all the sets A and B, (A n B)U(A-B) =A

Or

12(B). Use the properties of sets to prove that for all the sets A and B, A-(A n B) = A-B

13. Find the values of x for which the functions f(x) = $3x^2$ –1 and g(x) = 3+x are equal

SECTION – C
Questions 14 to 15 carry 3 mark each

14. Let f = {(1, 1), (2, 3), (0, –1), (– 1, –3)} be a function from Z to Z defined by f(x) = ax + b, for some integers, b. Determine a and b.

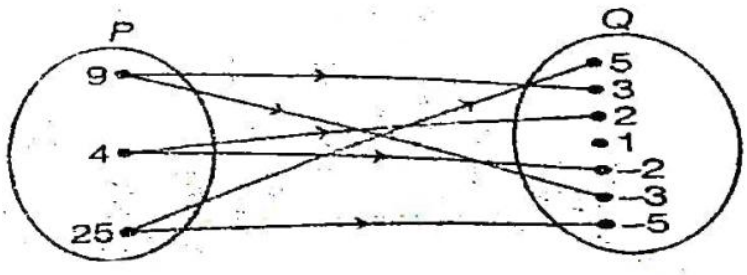
15(A). Find the domain and range of the real function f(x)= 1/(1-x^2)

Or

15(B). If f (x) = (x+ 1)/(x-1), show that f [f(x)] = x

SECTION – D
Questions 16 to 17 carry 4 mark each.

16. The figure shows a relationship between the sets P and Q Based on above information answer the following.



(i) Write this relation in set-builder form

(ii) Write the domain of R

(iii)(a)Write the range of R

Or

(iii)(b) Write the Co-domain of R

17. A survey of 400 people was conducted to ask about their transportation preference .200 people use public transport , 180 use bicycle and 80 people use both public transport and bicycle.

Based on the above information , answer the following Questions
(i)How many people use at least one of the two transport methods?
(ii)How many people use only public transport?
(iii) (a) How many people use only one mode of transport ?

Or

(iii)(b)How many people use neither public transport nor bicycle to travel ?

SECTION – E
Questions 18 to 19 carry 5 mark each.

18.(A)(i)Find sets A,B and C such that A∩B, B∩C and A∩C are non-empty sets and A∩B∩C = ϕ
(ii) Draw the Venn diagram of following: - (i) A ' ∩ B ' (ii) (A ∩ B) ' (iii) (A U B) – (A ∩ B)

OR

18.(B) Let A and B be two sets, if A∩X = B∩X = ∅ and A∪X = B∪X for some set X, prove that A =B.

19. Determine the range of f

(i) f= $\left\{\left(x, \frac{x^2}{1+x^2}\right) : x \in R\right\}$

(ii) f(X) = $\sqrt{9-x^2}$

END

To get more sample papers , practice papers ,study material for Maths (only for CBSE XI-XII) Join our whatsapp group at link shared below
https://chat.whatsapp.com/L3RcA9CYQJ5CXAw8fk2PpF