CAMBRIDGE SCHOOL SRINIVASPURI PERIODIC ASSESSMENT 1 – (2025-26) MATHEMATICS CLASS – XI SET B

TIME: 60 MINS

MM:30

General Instructions:

- The question paper consists of 17 questions. It contains five sections section
 A, B, C, D and E. Each section is compulsory.
- Section A has 10 MCQ's and 2 Assertion-Reason based questions of 1 mark each.
- Section B has I Very Short Answer (VSA)-type question of 2 marks.
- Section C has I Short Answer (SA)-type question of 3 marks.
- Section D has I Long Answer (LA)-type question of 5 marks.
- Section E has 2 source based/case based/passage based/integrated units of assessment (4 marks each) with sub parts.

SECTION A

Multiple Choice Questions

1x12=1

1.	The set of odd prime numbers less than 1	2 is
2.	(a) {1,3,5,7,9,11} (c) {3,5,7,11} Given relation R = {(1,6), (2,9), (3,6), (5, the range of R is	(b) {1,3,5,7,11} (d) {3,5,11}
3	(a) 2 (c) 3	(b) 4 (d) 1
3.	Range of the function $f(x) = \frac{ x+4 }{x+4}$ is (a) {4} (c) {+1, -1}	(b) {-4}
4.	If $f(x) = y = \frac{ax-b}{cx-a}$, then (a) $f(y) = -x$ (c) $f(y) = \frac{1}{a}$	(d) $\{0\}$ (b) $f(y) = x$
5.	Which one of the following is correct? (a) $A \cup A = U$ (c) $A \cup \emptyset = \emptyset$	(d) $f(y) = -\frac{1}{x}$ (b) $A \cap A = \emptyset$
6.	If $A = (1,5)$ and $B = \{2,7\}$, then $A \cap B$ is (a) [2,5]	 (d) A ∩ Ø = Ø (b) (2,5] (d) [2,5)

7.		denotes the compliment of X , then $X \cap (X \cup Y)'$ is	
	equal to	ALV V	
	(a) X	(b) Y	
	(c) Ø	(d) X ∩ Y	
8.	4N \cap 6N is	s a constant natural number}, then the set	
	(a) 12N	(b) N	
	(c) 2N	(d) 24N	
7.		nimum number of elements in $A \cap B$ is	
	(a) 3	(b) 6	
	(c) 9	(d) 12	
0.	Domain of the function $f(x) =$	The state of the s	
07.5	(a) $R - (-4,4)$	(b) $R = [-4,4]$	
	(c) (-4,4)	(d) [-4,4]	
	(-) ()	(0) [-7,7]	
	ASSERTION - REASON BA	ASED QUESTIONS	
		tement of assertion (A) is followed by a statement	
	of Reason (R). Choose the correct answer out of the following choices.		
		d R is the correct explanation of A.	
		t R is not the correct explanation of A.	
	(c) A is true but R is false.		
	(d) A is false but R is true.		
11.	Assertion (A): If $(x + 3, 5) = (2, y - 1)$ then $x = -1, y = 6$.		
	Reason (R) : If $(a,b) = (c,a)$		
12.	Assertion (A): An Interval is a subset of real numbers.		
	Reason (R) : Infinite real nur		
		SECTION B	2×1=2
	Very Sho	ort Answer Type Question	281-2
13.	Two finite sets have m and n elements. The number of subsets of the first set is		
	112 more than that of the second	and set. Find the values of m and n .	
		SECTION C	
	Short	Answer Type Question	
14.	Find the domain and range of the		$3 \times 1 = 3$
		x-2	
	S. C.	SECTION D	5x1=5
2325	Long	Answer Type Question	
15.	Draw the graph of the greatest and co-domain.	integer function. Also, mention its domain, range	

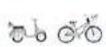
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SECTION E Case-Based Questions

16. Case-Study I:

A survey of 400 people was conducted to ask about their transportation preferences. 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

(b) How many people use neither public transport not bicycle to travel?

17. Case-Study II:

A teacher while teaching relations and function to the class, wrote a question on the board, which is as follows.

Let f and g be two real functions defined by $f(x) = 1 + x^2$ and g(x) = 3 + 2x. Based on the above information, answer the following questions.

- (i) Find the domain and range of f. Also find $f(\frac{1}{x})$.
- (ii) Find $\frac{1}{g}$. For which value of x is $\frac{1}{g}$ not defined ?