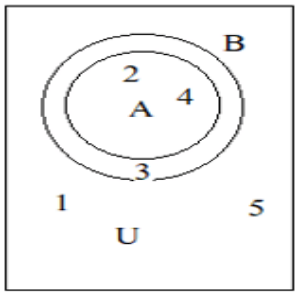
THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

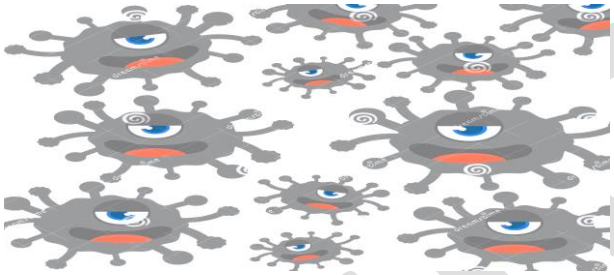
GRADE: XI Date:	REVISION WORKSHEET (2023-24) APPLIED MATHEMATICS (241)	Marks: 20 Time: 50 minutes

Name:

Class & Section:

Q.No.	Questions	Mark
	SECTION A	
1	Let A= {1,2,3,4,5,6,7,8,9,10} and B = {2,3,5,7} then which of the following is true? (a) $A \cap B = A$ (b) $A \cap B = B$ (c) $A \cap B \not\subset A$ (d) None of these	**1**
2	If $n(A \times B) = 45$ then $n(A)$ cannot be (a) 15 (b)17 (c) 5 (d) 9	**1**
3	The relation R defined on the set of natural numbers as {(a,b): a differs from b by 3}is given by (a) {(1,4) ,(2,5) ,(3,6),…….} (b) {(4,1) ,(5,2) ,(6,3),…….} (c) {(1,3) ,(2,6) ,(3,9),…….} (d) {(1,3) ,(6,2) ,(9,3),…….}	**1**
4	In a GP fifth term is 27and eighth term is 729.Find the 11^{th} term: (a)729 (b)6561 (c)2187 (d)19683	**1**

5	Which of the following is set representing B but not A?  a) { } b) {2,4} c) {2,3,4} d) {3}	**1**
	SECTION B	
6	Find the sum of the series 8 + 88 + 888 + …….upto n terms.	**2**
7	Which of the following sets are equal ? A = {x: x ∈ N , x < 3 } , B = { 1, 2 } , C = {3, 1 } , D = {x: x ∈ N , x is odd , x < 5}	**2**
8	If A={1,3,8} , B = {x: x is an even number between 2 and 8 } , C ={6}. Find : (a) A × (B ∪ C) (b) (A × B) ∩ (A × C)	**2**
	SECTION C	
9	Let A= {1, 2,3,4, 5,6}.Define a relation R on set A by R ={(x, y): y= $\frac{x}{2}$} (a) Write R in roster form. (b) Depict this relation using an arrow diagram. (c) Write down codomain and range of R	**3**
10	a) If $A\{x: x \text{ is an odd number less than or equal to } 7\}$ and $B = \{x: x \text{ is an even number less than or equal to } 8\}$ and U, the set of natural numbers less than or equal to 9 is the universal set.	**3**

	Verify that : $(A \cup B)' = A' \cap B'$ (b) Write down the subsets of $\{1,2,3\}$.	
11	**Case Study:** The number of bactieria in a certain culture doubles every hour.Given that number of bacteria present at the end of hour was 160000.  Based on the above, information answer the following: (1) What is the number of bacteria present initially? (2) What is the number of bacteria present at the end of 7^{th} hour? (3) What is the number of bacteria present at the begining of 3^{rd} hour?	**3**