** Bhartiyam International School**

**Pre – Mid Term Assessment (2022-23)  
Subject: Mathematics**

**Class: XII**

**Date: 12/07/2022 Max. Marks: 40  
Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll No: \_\_\_\_\_\_ Duration: 90 mins.**

**General Instructions**:

1. This question paper contains **four sections*–* A, B, C, and D**. Each part is compulsory.
2. **Section - A** has 6 **very short answer type (VSA) questions** of 1 marks each.
3. **Section *-* B** has 5 **short answer type (SA1) questions** of 2 marks each.
4. **Section *-* C** has 3 **short answer type (SA2) questions** of 3 marks each
5. **Section - D** has 3 **long answer type questions (LA)** of 5 marks each.

**SECTION – A**

1. Find the domain of the function 1
2. Evaluate the value of 1
3. Prove that Identity Function is an injective Function. 1
4. How many reflexive relations in can be formed for a set A if n(A) =2? 1
5. A and B are symmetric matrices of the same order. What type of matrix is .1
6. What are the number of bijective functions from set A to itself when A contains 106

elements? 1

**SECTION – B**

1. and and then find 2
2. If A is a square matrix such that = I, then is. 2
3. Solve the following: 2
4. Show that the relation R in the set of integers (Z) given by R= {(a, b) : 2 divides a-b} is equivalence relation. 2
5. If and then find k. 2

**SECTION – C**

1. **Let A = R – {3} and B = R- {1}. Consider the function of f: A  B defined by  
   f(x) =  is one – one and onto function. 3**

1. Let ,find a matrix D such that 3
2. Check whether the relation R defined in the set {1, 2, 3, 4, 5, 6} as R ={(a, b): b = a+1, a,b є A} is reflexive, symmetric or transitive.3

**SECTION – D**

1. If and I is the identity matrix of order 2 2. Show that I + A= (I – A) . 5
2. Consider f : R+ → [– 5, ∞) given by f (x) =-5. Show that f is bijective. Also find inverse of f(x). 5
3. Express the matrix B = as the sum of a symmetric and a skew symmetric matrix. 5