**SIR NASEEM’S INSTITUTE  
MID TERM EXAMINATION 2019**

**Time: 15 minutes Max Marks: 10  
Section: A (MULTIPLE CHOICE QUESTIONS)**

**1. Choose the correct answer for each from the given options.**

1. **A matrix for which inverse does not exist known as**
   1. **Unit matrix b) Square matrix c) Null matrix d) Singular matrix**
2. **The decimal equivalent to binary number 1001 is**
   1. **7 b) 9 c) 14 d) 19**
3. **2 is equal to**
   1. **1/2 b)  2/3 c)  2 d)  3**
4. **(A x B) t  =** 
   1. **Bt x At b) At  x Bt  c) B x A d) A x B**
5. **If A-1 is the inverse of matrix A, then AA-1 will be**
   1. **Zero b) A c) I d) A-1**
6. **A number whose exponent is zero is always** 
   1. **Zero b) One c) Two d) None**
7. **The order of matrix A =  is :**
   1. **1x1 b) 1x3 c) 3x1 d) None of these**
8. **The binary equivalent of the decimal number 37 is** 
   1. **100101 b) 101000 c) 101101 d) 110011**
9. **-35 3 ÷ 7 is equal to**
   1. **5 4 b) 5 2 c) -5 2 d) 5 3**
10. **If = , then the value of X is** 
    1. **b) 2 c) 0 d) 8**

**Time: 1 hour 45minutes Max Marks: 40  
Section: B (SHORT-ANSWER QUESTIONS)**

**Note: Answer 5 question from this section.**

1. **Solve the equation**

1. **Perform the following binary operations**
   1. **100111 + 1010 – 10111 c. 1111110 by 111**
   2. **1111111 from 11100111 d. 11001 x 1001**
2. **If matrix A = ,  find the inverse of A and verify that AxA-1 = I**
3. **Solve the equation for :**
4. **Convert the decimal number 114 into equivalent binary number and the binary number 11101 into its equivalent decimal number.**
5. **For the matrices given below**

**, , find**

* 1. **x**
  2. **+  t**

1. **Solve the quadratic equation**

**149  2 = 0**

**Section: C (DETAILED-ANSWER QUESTIONS)**

**Note: Answer any 2 question from this section.**

**3. for the matrices**

**, , and**

**Find (i) At x Bt (ii) A x B (iii) The determinant of matrix C**

**4. Solve the equation.**

**5. Solve the following equations by the method of substitution**