**Institute of Technology & Science, Ghaziabad**

**Data Structure Using C/C++**

**BCA III Sem**

**Assignment-1, UNIT-I**

Q1. What do you mean by Data Structures? Draw diagram to classify. Dec 2018

Q2. How 2-dimensional arrays can be represented? Dec 2014, Dec 2017

Q3. Define Arrays. How single dimensional arrays can be represented in memory? Dec 2016

Q5. What is row major array and column major array? List its applications. Dec 2013

Q6. ‘P’ is a two Dimensional Array with 5 rows and 5 columns i.e. P{1 : 5, 1 : 5}. Each elements of array is stored in two memory locations. If P (1.1) begins at address 800. Then find address of P[4][3]:

Q7. Explain the following terms in relation with the queues:

1. Insertion and deletion operation
2. Applications
3. Types of Queues

Q8. WAP to input a square matrix and print:

1. Upper Triangular Matrix

2. Lower Triangular Matrix

3. Tridiagonal Matrix

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**Assignment- 2, UNIT-2**

Q1. What is postfix expression form of any infix expression ? Write an algorithm to convert infix expression into postfix expression [Dec 2016]

Q2. Transform the following infix expression into postfix form: Dec 2013

Z+(y\*x-(w/v^u)\*t)\*S

Q3. Explain following terms in relation with stack [Dec 2014, Dec 2015]

a) PUSH operation with example

b) POP operation with example

c) Applications

Q4. Explain the following terms in relation with queue: [Dec 2016]

(a) Insertion and deletion operation

(b) Applications

c) Limitations and their remedy

Q5. How a Stack is represented in an array? Describe various applications of stack. Explain infix, prefix and postfix expressions with the help of examples. [Dec 2017]

Q6. Write an algorithm to evaluate postfix expression and also implement the algorithm to the following expression:

3, 1, +, 2, , 7, 4, -, 2, \*, +, 5, - [Nov 2019]

Q7. Convert the following expression in Polish notation using both (i) Hands & Inspection (ii) Stack method.

A+(B\*C-(D/E↑F)\*G)\*H