

AF-3106

BCA (Part - I)
Term End Examination, 2017-18

DATA STRUCTURE

*Time : Three Hours] [Maximum Marks : 100
[Minimum Pass Marks : 33*

Note : Answer **all** questions. The figures in the right-hand margin indicate marks.

1. Answer the following questions in short : $2\frac{1}{2} \times 10$
 - (a) What is Data Structure ?
 - (b) Write about data types.
 - (c) What is the concept of linked list ?
 - (d) What is the need of header node ?
 - (e) What do you mean by stack ?
 - (f) What is Binary tree ?
 - (g) What is Linear search ?
 - (h) What is Selection sort ?
 - (i) What is average case analysis ?
 - (j) What is space complexity of algorithms ?
-

(2)

2. Write an algorithm to insert a given element in the one-dimension array. Give a suitable example. 15

OR

What is Array ? Describe all the operations performing in the array.

3. Describe the applications of linked list. 15

OR

Write an algorithm for insertion in linked list with giving suitable example.

4. Evaluate the following prefix expression using stack 15

$/ * A + BCD$

OR

Describe trees traversal algorithms.

5. Write the algorithm of selection sort and solve the given example with selection sort techniques : 15

65, 45, 21, 60, 15, 25, 5

OR

What is Merge sort ? Write its algorithm with giving suitable example.

(3)

6. Describe the complexity of algorithms. 15

OR

Describe the asymptotic notation.
