

B.C.A.- II (CBCS Pattern) Semester-IV
UBCAT403 - Paper-III - Algorithm and Data Structures

P. Pages : 2

Time : Three Hours



GUG/S/25/11977

Max. Marks : 40

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- Notes :
1. All questions are compulsory and carry equal marks.
 2. Draw neat and labelled diagram and supporting data whenever necessary.
 3. Avoid vague answers and write specific answer related to questions.

Either :

1. a) Define algorithm? Explain the different types of algorithm. 4
- b) Write an algorithm to find total number of positive, negative and zeros from the list of N integer number. 4

OR

- c) What do you mean by searching? Write difference between sequential and binary search. 4
- d) Write an algorithm to sort linear array using bubble sort method. 4

Either :

2. a) Explain the various basic operations that can be performed on stack. 4
- b) Write an algorithm to add and remove the element from stack. 4

OR

- c) Define Queue. Explain the various representation of Queue. 4
- d) Explain abstract data type implementation of queue in detail. 4

Either :

3. a) Differentiate between linked list and array. 4
- b) Write an algorithm to search an element in unsorted list. 4

OR

- c) Explain the memory representation of linked list. 4
- d) Write an algorithm to insert a new node in a linked list. 4

Either :

4. a) What is AVL tree? Write an algorithm to insert node in AVL tree. 4

- b) Define Binary search tree and write a difference between Binary tree and Binary search tree. 4

OR

- c) What are the methods to find minimum spanning trees? Explain. 4
- d) Explain various terminology used in graph. 4

5. Solve all the questions.

- a) How do you classify the data structure? 2
- b) What is deque? Explain. 2
- c) Explain the need of linked list. 2
- d) Explain Kruskal's algorithm. 2
