AM-1001 Seat No. 809

B. C. A. (Sem. IV) Examination

March - 2019

BCA - 401 : Data Structures

Time : **3** Hours] [Total Marks : **70**

Instruction : Draw figures when necessary.

1 (A) Answer the following : **6**

(i) Discuss the term Data Structure

(ii) Discuss primitive data structure

(iii) Discuss String Concatenation

(B) Answer the following : (Any **Two**) **12**

(i) Describe linear data structure in detail with advantages and disadvantages.

(ii) Write an algorithm/program to compare two strings.

(iii) Explain String length and String copy function with examples.

2 (A) Answer the following : **5**

(i) Write full form of IRD and ORD.

(ii) What is priority queue?

(iii) What is use of link-list?

(iv) What is POP?

(v) What is polish notation?

(B) Answer the following : (Any **Two**) **12**

(i) Write an algorithm of PUSH( ) and PEEP( ) operation of STACK operation.

(ii) Explain circular queue in detail.

(iii) Write a short note on Doubly linked list.

3 (A) Define the following : (Any **Five**) **6**

(i) Graph

(ii) Tree

(iii) Leaf node

(iv) Isolated node

(v) Forest

(vi) Loop

(B) Answer the following : (Any **Two**) **12**

(i) Explain BFS with algorithm and example in detail.

(ii) Explain AVL Tree in detail.

(iii) Explain Tree Structure in detail.

4 (A) Answer the following : **5**

(i) Define : Collision

(ii) Define : Hashing

(iii) Define : File organization

(iv) List out all sorting techniques.

(v) What do you mean by index file?

(B) Answer the following : (Any **Two**) **12**

(i) Describe in detail : Shell sort.

(ii) Describe in detail : Radix sort.

(iii) Explain sequential file in detail.
