

**Goa Vidyaprasarak Mandal's  
Gopal Govind Poy Raiturcar College of Commerce and Economics  
Ponda-Goa**

**B.C.A (Semester-II) Examination, April 2017**

**DATA STRUCTURES**

**Duration: 2 Hrs**

**Marks: 50**

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Instructions: 1. All Questions are compulsory.  
2. Figures to the right indicate marks.

Q.1. Define the following. (5\*2=10)

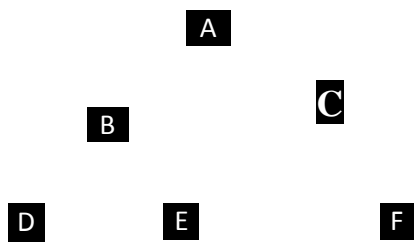
- a. Binary tree.
- b. Data structure.
- c. Circular Queue.
- d. Doubly Linear Linked List.
- e. Graph.

Q.2.A. Write C representation for Push(s,x). (2)

Q.2.B. State and explain Primitive operations on Linear Linked List. (3)

Q.2.C. Write a C program implementing Queues. (5)

Q.3.A. Write preorder, inorder, postorder tree traversals for the following. (2)



Q.3.B. Write C implementation for setleft(p,x) and isleft(p). (3)

Q.3.C. Write a C program to create and display a Binary tree. (5)

Q.4.A. What is O notation? (2)

Q.4.B. Explain Balanced trees. (3)

Q.4.C. Explain shell sort. (5)

Q.5.A. What is indexed sequential search? (2)

Q.5.B. Explain B-trees. (3)

Q.5.C. Explain shortest path algorithm. (5)

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