

(4)

7. Define binary tree and how will we achieve the following: 7½

- (i) how a Node can be inserted in binary tree.
- (ii) Write a C procedure to find Kth element in binary tree.

Unit-IV

8. Define Circular queue? Write an Algorithm for inserting an element into circular queue and deleting an element from circular queue. 7½

9. (a) The In-order and Pre-order traversal sequence of nodes in a binary tree are given below 3½

In-order: D G B A H E I C F

Pre-order- A B D G C E H I F

Draw the binary tree .

(b) Write an Algorithm for Bubble sort and apply that algorithm for following Data: 4
65, 70, 75, 80, 85, 60, 55, 50, 45

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B.A./B.Sc.(Part-I) Examination, 2015

(New Syllabus)

COMPUTER APPLICATION

Paper-III

(C Programming & Data Structure)

Time Allowed : Three Hours] [Maximum Marks : 50

Note : Answer five questions in all. Question No.1 is compulsory. Attempt one question from each of the four Units.

1. 2×10=20

- (a) Define Array with its indexing? Explain with example.
- (b) What is the difference between Linked-List and Array?
- (c) Define Graph? Also define in-degree and out-degree of a graph.

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- (d) What is the difference between Array and String in C?
- (e) What is the difference between Union and Structure?
- (f) Define Address operator in C in detail?
- (g) Write down the steps to insert a node in a Linked List?
- (h) Explain Switch Statement with Syntax?
- (i) Distinguish between linear and non-linear data structures?
- (j) What do you mean by structure in C? Explain with suitable example.

Unit-I

- 2. (a) How looping is performed in C? Explain each looping structure with suitable example. 3½
- (b) What is the difference between call by value and call by reference? Explain with suitable example. 4

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(3)

- 3. (a) What do you mean by recursion? Write a program in C to calculate the factorial of a given integer using recursion. 4
- (b) Discuss various Storage classes in C with suitable example? 3½

Unit-II

- 4. Explain the role of break and continue Statement in C programming with example? Write a C Program to print all armstrong numbers between 1 to 500. 7½
(Ex. $153 = 1^3 + 5^3 + 3^3$)
- 5. What do you mean by function in C Programming explain with suitable example? Write a C Program using recursive function to enter 4 digit number and find the sum of all digits of the number. 7½

Unit-III

- 6. What do you mean by stack? Write down the procedure for implementing various Stack Operations with suitable example. 7½

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P.T.O.