

I B.Tech Year(R05) Supplementary Examinations, May/June 2010

C' PROGRAMMING AND DATA STRUCTURES

(Common to Civil Engineering, Electrical & Electronic Engineering, Electronics & Communication Engineering, Computer Science & Engineering, Electronics & Instrumentation Engineering, Bio-Medical Engineering, Information Technology, Electronics & Control Engineering, Computer Science & Systems Engineering and Electronics & Computer Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is the difference between break and continue statement? Explain with examples.
(b) What is the purpose of go to statement? How is the associated target statement identified?
(c) Write a C program to evaluate the power series
 $E^x = 1 + x + x^2 + x^3 + \dots x^n, \quad 0 < x < 1$ [5+5+6]
2. (a) In what way array is different from an ordinary variable?
(b) What conditions must be satisfied by the entire elements of any given array?
(c) What are subscripts? How are they written? What restrictions apply to the values that can be assigned to subscripts?
(d) What advantage is there in defining an array size in terms of a symbolic constant rather than a fixed integer quantity?
(e) Write a program to find the largest element in an array. [3+2+3+3+5]
3. (a) Explain the process of declaring and initializing pointers. Give an example.
(b) Write a C program that uses a pointer as a function argument. [8+8]
4. Explain the following with an example each:
(a) Array of structures.
(b) Structures within structures. [8+8]
5. (a) Explain the command line arguments. What are the syntactic constructs followed in C.
(b) Write a C program to read the input file from command prompt, using command line arguments. [16]
6. What is a Dequeue? Explain the various operations on Dequeue with suitable algorithms. [16]
7. (a) What is the maximum number of nodes in a binary tree that has 'm' leaves?
(b) Explain the properties of binary trees. [8+8]
8. Trace through the steps by hand to sort the following list in **Quick sort**.
28 7 39 3 63 13 61 17 50 21 [16]
