

Code No: Z0121/R07

Set No. 1

I B.Tech Supplementary Examinations, January 2014

C PROGRAMMING AND DATA STRUCTURES

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

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. How algorithm is different from flowchart? Write an algorithm and draw flowchart for finding greatest among three given numbers. [8+8]
2. Write program for arranging numbers in descending order using function without argument and with return value. [16]
3. Write a program to find inverse of a matrix. [16]
4. (a) How structure is implemented using arrays? Give an example.
(b) Compare structure and union. [10+6]
5. Describe types of files with an example . [16]
6. Which sorting technique is called as simple. Explain with a sample program. [16]
7. Define circular linked list . Write a program to insert a node in circular linked list and print the list for all conditions. [16]
8. Define binary tree. What are the application of binary tree? [16]

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Set No. 2

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 Bio-Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is an identifier? What are the different types of identifiers?
 (b) What are the different data types available in 'C'. Explain with examples. [6+10]
2. (a) Explain about call by value with an example .
 (b) Write a program to generate Fibonacci series using with argument and return type. [8+8]
3. Write short notes on pointers. [16]
4. (a) How structure variable be defined as a member of another structure? Explain.
 (b) Write a program to store and print name, address, department and marks using structure. [8+8]
5. Write a program to copy data from one file to another file line by line . [16]
6. Write the algorithm for Merge sort and explain the same with an example. [16]
7. Write a program to evaluate the following expression $X = A - B / C$ infix to prefix using stack . [16]
8. (a) What is a network?
 (b) What is a spanning tree?
 (c) Define minimal spanning tree .
 (d) What are the various traversals in a tree? [16]

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Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is the difference between while and do-while statement?
 (b) Write a 'C' program to find the sum of series

$$e = 1 + 1/1! + 1/2! + 1/3! + \dots + 1/N!$$
 [6+10]
2. What is the working of following functions
 (a) ceil(x)
 (b) exp(x)
 (c) rand()
 (d) toascii(x) [16]
3. Write short notes on pointers. [16]
4. Define Structure and write the general format for declaring and accessing members. [16]
5. What are the advantages and disadvantages of sequential access file and explain its operations with an example ? [16]
6. Write a program to explain selection sort . Which type of technique does it belong. [16]
7. What difference between queue and circular queue ? Explain about circular queue operations ? [16]
8. Define binary tree. What are the application of binary tree? [16]

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Set No. 4

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Bio-Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. What are the different types of if statement available, write its syntax an explain with a sample program? [16]
2. What is the difference between global & local variable. Explain its usage with a 'C'program. [16]
3. Define an array. What are the different types of arrays. Explain. [16]
4. (a) Define Union , write the syntax for union.
(b) Write a program to find size of union and number of bytes reserved for it. [6+10]
5. (a) List and explain the operations of file ?
(b) What are the different functions of file ? [8+8]
6. What do you mean by sorting? Mention the different types of sorting, give some examples and explain any one indetail. [16]
7. Justify why queue is known as FIFO ? Explain its operations . [16]
8. Explain Kruskal's method of determining the minimal spanning tree. [16]
