Set No. 1

I B.Tech Regular Examinations, May/Jun 2008
C PROGRAMMING AND DATA STRUCTURES
(Common to Civil Engineering, Electrical & Electronic 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
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1. (a) Define Algorithm.
   (b) What is the use of flowchart ?
   (c) What are the different steps followed in the program development? [3+3+10]

2. (a) Give some important points while using return statement .
   (b) Write short notes on scope of a variable.   [8+8]

3. Write short notes on pointers.   [16]

4. Write a program using structures to display the following information for each
   customer name, account number, street, city, old balance, current payment, new
   balance, account status.   [16]

5. Write a program for indexed sequential file for the employee database for the fol-
   lowing operation .

   (a) Add Record
   (b) Delete Record
   (c) Search Record based on the department   [16]

6. What do you mean by sorting? Mention the different types of sorting, give some
   examples and explain any one indetail.   [16]

7. What are the advantages and disadvantages of stack ? Write a program to illustrate
   stack operation ?   [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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Set No. 2

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Time: 3 hours — Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Explain the working of Unary Operator with example.
   (b) Explain the working of Binary Operator with example.
   (c) Explain the working of assignment Operator with example.
   (d) Explain the working of ternary Operator with example.   [4+4+4+4]

2. What is the advantage of using functions. Write a 'C' program to explain about built in functions with an example.   [16]

3. What is the advantage of using arrays ? Give syntax for declaration , accessing and printing one - dimensional array ?   [16]

4. Define Structure and write the general format for declaring and accessing members.   [16]

5. Write a program to read the following data , to find the value of each item and display the contents of the file .   [16]

Item	Code	Price	Quantity
Pen	101	Rs. 20	5
Pencil	103	Rs. 3	100

6. Compare the advantage and disadvantage of bubble, insertion and selection sort.   [16]

7. Define Abstract Data Type . Explain with an example .   [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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Set No. 3

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& 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
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1. What are the different types of control statements available 'C'. Explain them with an example?   [16]

2. (a) Write short notes on auto and static storage classes.

   (b) Write short notes on call by reference .   [8+8]

3. Define an array. What are the different types of arrays. Explain.
                                                                          [16]

4. Define Structure and write the general format for declaring and accessing members.
                                                                          [16]

5. What is the purpose of library function feof() ? How feof() be utilized within a program that updates an unformatted data file. Explain   [16]

6. Write a program to sort the elements whose worst and average case are O(n log n).
                                                                          [16]

7. Give an algorithm / C program to reverse a singly linked circular list inplace. [16]

8. Write an algorithm to perform deletion operation in a Binary Search Tree.   [16]

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Set No. 4

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& 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. (a) Define Algorithm.

   (b) What is the use of flowchart ?

   (c) What are the different steps followed in the program development? [3+3+10]

2. Write a program to find sum of given series by using function with argument and return value e = 2 + 3/1! - 6/2! + 9/3! - 12/4! .....!   [16]

3. Write a program and explain the working of malloc and calloc function.   [16]

4. Define Structure and write the general format for declaring and accessing members.
                                                                         [16]

5. Describe types of files 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. Explain tree traversals indetail .   [16]

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