

I B.Tech Supplimentary Examinations, Aug/Sep 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 *****

- 1. (a) Write a 'C' program to find the squares of N numbers using do while.
 - (b) Write a 'C' program to convert Decimal Number to Octal Number. [8+8]
- 2. Write a program using function with argument and with return value to find sum of odd & even series. [16]
- 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. Explain the following operations
 - (a) fseek()
 - (b) ftell
 - (c) rewind()
 - (d) ferror() [16]
- 6. What are the advantages of external sorting? Write a program to perform merge sort with following elements
 Set A { 11 , 16,22,25 } Set B { 15,19,2,23 } [16]
- 7. Define stack. What are the different methods used to implement stack, and explain different operations performed on it. [16]
- 8. (a) What are the differences between a tree and binary tree?
 - (b) Give the representation of binary trees and explain. [8+8]



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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) 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 the syntax for declaring two dimensional array write a program to access and print the array elements. [16]
- 4. How to copy one structure to another structure of a same data type, give an example? [16]
- 5. (a) Write the syntax for opening a file with various modes and closing a file.
 - (b) Explain about file handling functions. [8+8]
- 6. Write a program to sort the elements whose worst and average case are $O(n \log n)$. [16]
- 7. What is a singly linked list? Write a program to delete a node in front, rear and in a particular position and print the list. [16]
- 8. Write a 'C' program to implement recursive algorithm for a Binary Search Tree.
 [16]



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- 1. How algorithm is different from flowchart? Write an algorithm and draw flowchart for finding greatest among three given numbers. [8+8]2. What is a function? What are the different types of functions? Explain function with no argument and no return type with an example. |16|3. Define an array. What are the different types of arrays? Explain. [16]4. Compare arrays, structures and unions. [16]5. (a) Write the syntax for opening a file with various modes and closing a file. (b) Explain about file handling functions. [8+8]6. What is the advantage of binary search? Write a program to search an element 30 in the given set of inputs $\{12,15,18,30\}$ [16]
- 7. (a) Compare the advantages and disadvantages of doubly linked list over singly linked list.
 - (b) Implement a queue using linked list and write a 'C' routine to add elements from a queue. [8+8]
- 8. Explain about connected and non-connected graph and list the difference between them? [16]



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1 (a) Write a (C' mean to concert Desire alte Have Desired much or	
 (a) Write a 'C' program to convert Decimal to Hexa Decimal number. (b) Write a 'C' program to find area of circle. [10+6] 	
2. What are the different standard library functions available in 'C'? Explain with a	
sample program. [16]	,
3. (a) Write a program to perform addition of two matrices.	
(b) Write the program to find the sum of even numbers using arrays. $[10+6]$	
4. (a) How is structure different from an array? Explain.	
(b) How an array be included as a member of a structure? [8+8]	
5. (a) Write the syntax for opening a file with various modes and closing a file.	
(b) Explain about file handling functions. [8+8]	
6. Explain the sorting mechanism which uses the concept of pivot element selection with a program. [16]	
7. Write an 'C' program to implement linked stacks. [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]	
