Code No: R05010106 **R05** **Set No. 2**

I B.Tech Examinations,June 2011
C PROGRAMMING AND DATA STRUCTURES
Common to CE, BME, IT, AE, ICE, E.COMP.E, ETM, E.CONT.E, EIE, CSE, ECE, CSSE, EEE

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Write a C program to read information about the student record containing student's name, student's age and student's total marks. Write the marks of each student in an output file. [16]

2. What is a stack? Explain two different representations of a stack. List the operations performed on a stack and write functions for implementing these operations. [16]

3. (a) Why is it possible to use the same variable names for actual and formal arguments.
   (b) Distinguish between function prototype and function definition.
   (c) What is recursion? What is its advantage? [5+5+6]

4. (a) What are different types of integer constants? What are long integer constants? How do these constants differ from ordinary integer constants? How can they be written and identified?
   (b) Describe two different ways that floating-point constants can be written in C. What special rules apply in each case?
   (c) What is a character constant? How do character constants differ from numeric-type constants? Do character constants represent numerical values? [6+4+6]

5. (a) Write and explain non-recursive algorithm for **binary search** with suitable example and discuss the various time complexities of binary search.
   (b) Suppose that the list contains the integers 1,2,?8 in this order. Trace through the steps of **binary search** to determine what comparisons of keys are done in searching.
      i. To locate 3
      ii. To locate 4.5 [8+8]

6. Write a C program to add the two given complex numbers. Define functions add and print with pointers as arguments. The complex number is a structure object with real and image fields. [16]

7. (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]

8. Write a C Program to exchange two nodes of a singly linked list. [16]

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Code No: R05010106 **R05** **Set No. 4**

I B.Tech Examinations,June 2011
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Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Write and explain non-recursive algorithm for **binary search** with suitable example and discuss the various time complexities of binary search.
   (b) Suppose that the list contains the integers 1,2,?8 in this order. Trace through the steps of **binary search** to determine what comparisons of keys are done in searching.
      i. To locate 3
      ii. To locate 4.5 [8+8]
2. Write a C program to add the two given complex numbers. Define functions add and print with pointers as arguments. The complex number is a structure object with real and image fields. [16]
3. Write a C Program to exchange two nodes of a singly linked list. [16]
4. What is a stack? Explain two different representations of a stack. List the operations performed on a stack and write functions for implementing these operations. [16]
5. (a) What are different types of integer constants? What are long integer constants? How do these constants differ from ordinary integer constants? How can they be written and identified?
   (b) Describe two different ways that floating-point constants can be written in C. What special rules apply in each case?
   (c) What is a character constant? How do character constants differ from numeric-type constants? Do character constants represent numerical values? [6+4+6]
6. (a) Why is it possible to use the same variable names for actual and formal arguments.
   (b) Distinguish between function prototype and function definition.
   (c) What is recursion? What is its advantage? [5+5+6]
7. Write a C program to read information about the student record containing student's name, student's age and student's total marks. Write the marks of each student in an output file. [16]
8. (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]

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Code No: R05010106 **R05** **Set No. 1**

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C PROGRAMMING AND DATA STRUCTURES
Common to CE, BME, IT, AE, ICE, E.COMP.E, ETM, E.CONT.E, EIE, CSE, ECE, CSSE, EEE

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What is a stack? Explain two different representations of a stack. List the operations performed on a stack and write functions for implementing these operations. [16]

2. (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]

3. (a) Why is it possible to use the same variable names for actual and formal arguments.
   (b) Distinguish between function prototype and function definition.
   (c) What is recursion? What is its advantage? [5+5+6]

4. (a) Write and explain non-recursive algorithm for **binary search** with suitable example and discuss the various time complexities of binary search.
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      i. To locate 3
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7. (a) What are different types of integer constants? What are long integer constants? How do these constants differ from ordinary integer constants? How can they be written and identified?
   (b) Describe two different ways that floating-point constants can be written in C. What special rules apply in each case?
   (c) What is a character constant? How do character constants differ from numeric-type constants? Do character constants represent numerical values? [6+4+6]

8. Write a C Program to exchange two nodes of a singly linked list. [16]

Code No: R05010106 **R05** **Set No. 1**

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Code No: R05010106 **R05** **Set No. 3**

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Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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