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07MCA14

**First Semester MCA Degree Examination, December 2010**  
**Problem Solving Using C**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1 a. Define algorithm and flowchart. Draw the flowchart to find the biggest of three numbers. (06 Marks)  
b. Define identifiers, constants and keywords. Give the various rules for formulating identifiers in 'C' language. (10 Marks)  
c. Explain the basic structure of 'C' program. (04 Marks)
- 2 a. Classify the operators in 'C' language based on functionality. Give suitable examples. (08 Marks)  
b. Explain the precedence and associativity of arithmetic operators, with examples. (06 Marks)  
c. Explain the putchar() and getchar() functions, with examples. (06 Marks)
- 3 a. Explain the formatted input and output functions, with examples. (08 Marks)  
b. Explain the following with examples and flowchart.  
i) Simple if  
ii) Goto  
iii) Nested if  
iv) If.....else ladder. (12 Marks)
- 4 a. Differentiate between while and do-while loops. Give one example for each. (08 Marks)  
b. Write a C program to find whether a given integer is prime or not. Use for loop. (08 Marks)  
c. Explain the declaration of one dimensional array and two dimensional array. (04 Marks)
- 5 a. Write a C program to generate Fibonacci numbers using arrays. (05 Marks)  
b. Explain any five string handling functions with syntax. (10 Marks)  
c. Discuss the necessity of user-defined functions in a program. (05 Marks)
- 6 a. Write a function that finds the smallest of 4 numbers in an array. Use it in main function to find the smallest of arrays A, B, C and D each with 4 elements. (12 Marks)  
b. Explain structures and unions, with their syntax. Give example for each. (08 Marks)
- 7 a. What are pointers? Explain the advantages. (05 Marks)  
b. Explain the following :  
i) Operating a file  
ii) Closing a file  
iii) Input/output operations on a file. (10 Marks)  
c. Write a program to add two integers using pointers. (05 Marks)
- 8 a. Explain following dynamic memory allocation functions. Give the syntax and example for each.  
i) malloc ; ii) calloc ; iii) realloc ; iv) free. (10 Marks)  
b. Explain with example different types of preprocessor directives. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appearance of evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

