

3 (Sem-1) CSC M 1

2014

COMPUTER SCIENCE

(Major)

Paper : 1.1

(Computer Fundamentals and Programming)

Full Marks : 60

Time : 2½ hours

The figures in the margin indicate full marks for the questions

1. Answer the following questions : 1×10=10

- (a) Draw a block diagram of a computer to show its various parts.
- (b) Define an algorithm.
- (c) List various data types in C.
- (d) What is the purpose of assignment statement?
- (e) What is the utility of "&" in scanf() function?
- (f) List the logical operators used in C.

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(4)

5. Find the error in the following program segments and correct it : 1×5=5

(a) # define size 100;

(b) # include <stdio.h>;

```
(c) int sum (int X, int y) {  
    int result;  
    result = x + y;  
}
```

```
(d) For (X = 100, x >= 1, x++)  
    Printf ("%d", x)
```

```
(e) While (c <= 5) {  
    Product *= c;  
    ++c;
```

6. Answer any *one* of the following questions : 5

(a) Write a program in C language to generate Fibonacci numbers using recursive function.

(b) Write a program to generate the sum of two matrices.

(c) Write a program to concatenate two strings.

(2)

- (g) Give the syntax of for loop in C.
- (h) If an array is initialized at the time of declaration, what thing one must keep in mind?
- (i) What is recursion?
- (j) Define a structure.

2. Answer the following questions : $2 \times 5 = 10$

- (a) What is the difference between two member classes • and →?
- (b) What do you understand by opening a data file? How is this performed?
- (c) What are pointers? Why are they needed?
- (d) Differentiate between local and global variables.
- (e) What is an array? How are they declared and initialized? Give examples.

3. Answer any five of the following questions : $3 \times 5 = 15$

- (a) Convert 110101011000 to octal and hexadecimal.
- (b) Define number system. Convert octal 7316 to binary.

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(Continued)

(3)

- (c) Explain the difference between while loop and do-while loop with proper examples.
- (d) Discuss the concept of precedence of operators in C language with examples.
- (e) Distinguish between variables and keywords with examples.
- (f) What are the advantages and limitations of flowcharting?

4. Answer any three of the following questions : $5 \times 3 = 15$

- (a) Draw a flowchart and write the algorithm to find the smallest of three numbers.
- (b) Write a program to reverse the digits of a number.
- (c) What do you understand by a two-dimensional array? Give some situations that can be easily represented by these. Give the statement to declare a two-dimensional array.
- (d) Write a C program which will read a string text and count the number of words in it.

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(Turn Over)