2016

MCA

1st Semester Examination

**INTRODUCTION TO PROGRAMMING AND
DATA STRUCTURE**

PAPER—MCA-101

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their
own words as far as practicable.*

Illustrate the answers wherever necessary.

Answer Q. No. 1 and any *four* from the rest.

1. Answer any *five* questions :   5×2

   (a) What is global variable ?

   (b) What is the difference between i++ and ++i ?

   (c) Given an example of nested loop.

(d) When do we use switch–case over if–else ?

(e) What is ternary operator ?

(f) What is data type qualifier ?

(g) What is comma operator ?

2. (a) What is identifier ? Finf out valid identifiers from the following set — x – y, 4x, x4, x_y, x y 56K, x_K23.

(b) Write down the output of the following code segment–

i = 4 ;

printf ("%d", i) ;

printf ("%d", i++) ;

printf ("%d", i) ;

(c) What is goto statement ? Write a program in C to find the factorial of an integer using goto statement.

(2+3)+2+(2+6)

3. (a) Explain for loop using the flow chart.

(b) Write a program in C to convert binary to decimal number.

(c) Distinguish while and do while loop.

5+5+5

(Continued)

4. (a) Explain switch case with an example.

(b) Write a program in C to find the roots of any quadratic equation using switch case.

(c) What is the difference between break and continue statement ?

5+6+4

5. (a) Explain bubble sort using the data set – 20, 5, 15, 3, 10, 1.

(b) Write a program in C to search an item from a list using binary search.

(c) Write down the properties of array.

6+6+3

6. (a) What is the difference between string and group of characters ?

(b) Write a program to check wheather a string is palindrom or not.

(c) Write down the task of the following functions –
(i) strcpy( ) (ii) strcat( ) (iii) toupper( )

3+6+6

7. (a) What is recursive function ? Write down the conditions that must be satisfied to solve any problem recursively.

(b) Write a program in C to generate first 15 fibonacci numbers using recursive function.

(c) What is the difference between structure and union ?

3+6+6

[Internal Assessment — 30]

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