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MCS-011

MCA (Revised) / BCA (Revised)

Term-End Examination

11020 **June, 2017**

MCS-011 : PROBLEM SOLVING AND PROGRAMMING

Time : 3 hours *Maximum Marks : 100*

(Weightage 75%)

Note : *Question no. 1 is* ***compulsory****. Attempt any* ***three*** *questions from the rest.*

1. (a) Design an algorithm and draw a corresponding flow chart to convert a decimal number to its binary equivalent. *10*

(b) Write a C program (use a switch statement for selection) to add or subtract 2 matrices having order 3 × 3, depending upon the choice made by the user. *10*

(c) Write and explain the following types of functions with the help of an example program for each : *10*

(i) Function with no arguments and no return value.

(ii) Function with arguments and no return value.

(d) Using pointers, write a C program to swap the values of two variables. 5

(e) Mention the rules for using the Big-O notation. 5

2. (a) Without using the inbuilt string functions like strcat( ) and strlen( ), write C programs for the following : 10

(i) To concatenate 2 strings

(ii) To find the length of any given string

(b) Define the term 'variable'. What are the rules to be followed to name a variable in "C" ? Write the syntax to declare a variable and also mention how to assign values to it (initialize them). 10

3. (a) Write a program in "C", using structures, to find the sum of the Assignment and Term End Exam marks (for IGNOU MCA or BCA first semester courses) for 5 students. 10

(b) Explain the concept of "file handling" in C programming. Explain the use of fopen( ) and fclose( ) functions associated with it. Also mention various modes in which a file can be allowed to open with an example for each. 10

4. (a) Explain different arithmetic, logical and relational operators in C, with the help of examples. *10*

(b) Write and explain the use of the following in C programming, with an example for each : *10*

(i) Break statement

(ii) Continue statement

(iii) malloc( )

(iv) void

5. Explain the following with the help of suitable example for each : *4×5=20*

(a) Automatic Variables

(b) Global Variables

(c) Static Variables

(d) Register Variables