MCA (Revised)

Term-End Examination

June, 2009

09635

MCS-011 : PROBLEM SOLVING AND PROGRAMMING

Time : 3 hours *Maximum Marks : 100*

(Weightage 75%)

Note : *Question Number **1** is **compulsory**. Answer **any three** question from the rest.*

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1. (a) Develop an algorithm, draw the corresponding flow chart and write a program in 'C' to print the sum of the digits of a three digit number. **10**

(b) Write a program that does not use the inbuilt string function to perform the following : **10**

(i) To compare two strings

(ii) To concatenate two strings

(c) Write 'C' programs to read a string and check whether it is palindrome or not. **10**

(d) Write the output of the following program : **5**

```
main( )
{
int x=2, y=3, S1, S2 ;
S1=x+(++y) ;
S2=++x+y++;
printf ("%d%d%d%d\n", S1, S2, x, y);
}
```

(e) Differentiate between structure and union. **5**

2. (a) Summarize the purpose of the format strings (like %s, %d, %c) that are commonly used within the printf function, with an example for each. **10**

(b) Write a Program in 'C' to print the following output 'n' rows. **10**

for example, if n=3, the following should be output by the program :

```
      1
    1 2 1
  1 2 3 2 1
    1 2 1
      1
```

3. (a) Write a Program in 'C' to copy one file to another. The program should read the filenames at command line. **10**

(b) Explain the meaning and usage of each of the following function prototypes : **5x2=10**

(i) getch ( )

(ii) strcmp ( )

(iii) getchar ( )

(iv) gets ( )

(v) puts ( )

4. (a) Write a Program in 'C' in which a two-dimensional array is represented as an array of integer pointers to a set of single dimensional integer array. **10**

(b) Write a 'C' program to find the sum of the given series : **10**

$S = 1 - 2/2! + 3/3! - 4/4! \_ \_ \_ n/n!$

5. (a) List and explain bitwise operators in 'C'. **10**

(b) Write a program to count the number of characters, number of words and number of lines in a given file. **10**

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