Printed Pages : 4

(Following Paper ID and Roll No. to be filled in your Answer Book)

Roll No.

M. C. A.

(SEM. I) (ODD SEM.) THEORY EXAMINATION, 2014-15
PROBLEM SOLVING AND COMPUTER PROGRAMMING WITH C

Time : **3** Hours]   [Total Marks : **100**

Note :   (i)   Attempt All Questions. All questions carry equal marks.

(ii)   Make suitable assumptions if required.

1   Attempt any four parts of the following :   4×5=20

(a)   Define Operating System with its functions.

(b)   Explain Water fall model in short.

(c)   WAP to print the Fibonacci series up to 10 terms.

(d)   Draw the block diagram of Digital Computer and explain it in short.

(e)   Define Algorithm and Flowchart. Also make a difference between those two terms.

(f) Explain the following : [any two]

   (i) Keywords and Identifiers

   (ii) Macros and its applications

   (iii) Command Line arguments

2 Attempt any four parts of the following :   4×5=20

(a) WAP to find whether a number is prime number or not.

(b) WAP to check the given number is palindrome or not.

(c) Explain the different types of operators available in 'C' language in short.

(d) What is preprocessor? Explain the various type of preprocessor directives in short.

(e) What is data type? Also explain the various data types available in 'C' using suitable example.

(f) WAP to print:

```
1                *
2 2     or       * *
3 3 3            * * *
```

3 Attempt any two parts of the following :   10×2=20

(a) Differentiate between structure and union using suitable example. Also, Write a program in 'C' to multiply two matrices of order N×N.

(b) Make a Conversion of following number system:

   (1) $(10110111)_2$ to decimal

   (2) $(4376)_8$ to binary

   (3) $(153)_7$ to Octal

   (4) $(11001001001.001)_2$ to Hexadecimal

   (5) $(A234B)_{16}$ to decimal

(c) WAP to find out the sum of Rows and columns of a 4x4 matrix.

4 Attempt any two parts of the following :   10×2=20

(a) Define Storage classes in 'C'. Also, explain the different types of storage classes in 'C'.

(b) Differentiate between structure and array using suitable example. Also, write a program in 'C' to sort list of 'N' integer elements in ascending order.

(c) WAP a program to find out an element from a group of data elements.

5 Attempt any two parts of the following :   10×2=20

(a) WAP which open a file and find out the no. of Characters, Words and Line with in that file.

OR

WAP which copy the content of a file into the another file.

(b)   What are the different types of function in 'C'? Explain Recursion and Write a Program in 'C' to find the factorial of a number using Recursive function.

(c)   Explain Function Call Mechanism in detail with suitable examples.

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