Roll No. ………   Total Pages:
                                                        10416

MCA/D-12
COMPUTER FUNDAMENTAL AND PROBLEM
SOLVING USING 'C'
Paper-MCA-101

Time allowed: 3 hours   Maximum marks: 80

Note: Question no. 1 is compulsory. In addition, Attempt four more questions
         Selecting one question from each unit.

Compulsory Question

1. (a) Explain various characteristics of computers.
   (b) Discuss various types of error in programming.
   (c) Differentiate between constant and variables.
   (d) What will be the value of b after the execution of the following program?
       Void main ()
       {
            int b, k=8:
            b=(k++-k++,k++);
       }
   (e) Differentiate between break and exit ().
   (f) What is the purpose of register variables?
   (g) Explain the effect of ++ and – operators with pointers of all data types.
   (h) Explain all possible ways to pass structure variable to functions.   8x3=24

Unit-I

2. (a) How can you classify computers? Discuss various classifications in detail.   7
   (b) Write short note on the following:
       (i) Program design
       (ii) Documentation.   7
3. (a) What is decision table? Explain various type of decision table. Draw a decision table
       To display grades of students.   7
   (b) Explain the concept of structured programming.   7

Unit-II

4. (a) Write down the algorithm for merging and explain with the help of an example.   7
   (b) Write down the structure of a 'C' program and justify the structure with a program.   7
5. (a) Explain various arithmetic and bit-wise operator in 'C'.   6
   (b) Discuss primary data types in 'C' with the help of examples.   5
   (c) What are the keywords in 'C'? Explain their purpose.   3

Unit-III

6. (a) Discuss various format specifiers used in scnaf () and printf ().   4
   (b) Write a program in 'C' to find root of a quadratic equation.   10
7. (a) Write a program to reverse the given number recursively.   8
   (b) Differentiate between auto, extern and static variables.   6

Unit-IV

8. (a) Write a program in 'C' to sort a given list of strings.   7

    (b) How memory can be allocated dynamically in 'C'? Explain with suitable example.   7

9. (a) Explain following functions w.r.t. file handling in 'C':

      (i) rewind().

      (ii) ftell().

      (iii) fseek().

      (iv) fopen().

      (v) fread().   10

    (b) How are arrays of structure variables defined? How are they beneficial to the Programmers?