Printed pages: 2   **Sub Code: RCA101**

Paper Id: | 1 | 4 | 0 | 1 | **Roll No.** | | | | | | | | | | |

M.C.A.
(SEM I) THEORY EXAMINATION 2017-18
COMPUTER CONCEPTS & PRINCIPLES OF PROGRAMMING

Time: 3 Hours   *Total Marks: 70*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.
      2. Any special paper specific instruction.

SECTION A

1.   **Attempt *all* questions in brief.**   **2 x 7 = 14**

   a) Differentiate between constant and variable.

   b) Arrange the following operators in the increasing order of precedence

           ++ , && , == , %

   c) Discuss = and == operator with example.

   d) Give the output of following code

         Inta,b=10;

         a=++b+b++;

         printf("%d,%d",a,b) ;

   e) How while and do while loops are different? Discuss with example.

   f) What do you understand by return type of a function?

   g) Write short note on truncation.

SECTION B

2.   **Attempt any *three* of the following:**   **7 x 3 = 21**

   a. Differentiate primitive, derived and user defined data types in C. Draw a table of different data types used in C along with their size, range, format specifier and use.

   b. What are the features of a good algorithm? How an algorithm is differ from program? Write an algorithm to find the root of a quadratic equation.

   c. Categorize the operators used in C in unary. Binary and ternary along with suitable examples. Also discuss operator precedence and associativity of different operators.

   d. Give the restriction of switch case. Write a program in C for calculator using switch case.

   e. Discuss various parameter passing strategies along with example.

SECTION C

3.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

   (a)   Explain in detail different generations of computer languages.

   (b)   Write short notes on

         I)   Assembler

         II)   Interpreter

         III)   Compiler

         IV)   Linker

         V)   Loader

4.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

   (a)   Differentiate between bottom up and top down design. Also differentiate between system
          software and application software.

   (b)   Write short notes on
                I)   Header files
                II)   C – token
                III)   Format specifier
                IV)   Keywords
                V)   Identifiers

5.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

   (a)   Write a program in C to find the greater number between two given numbers using
          conditional operator.

   (b)   What do you understand by bitwise shift operator.Discuss bitwise left shift and right shift
          operators with example.

6.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

   (a)   Write a program in C to print Fibonacci series up to given number of steps.

   (b)   Write a program in C to calculate sum of digits of a given number.

7.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

   (a)   Write a program in C to find the greatest common deviser (GCD) of two given numbers.

   (b)   Discuss different storage classes used in C.