Paper Code: RCS-101

Roll No.

BTech.
FIRST SEMESTER EXAMINATION, 2016-17
COMPUTER CONCEPTS AND PROGRAMMING IN C

[Time: **3 Hours**]   [Max. Marks: **70**]

Note: Attempt all question. Answers must be precise.

1. Attempt any five part of the following: -   (**3x5=15**)
   - (a) What is digital computer? Draw block diagram of digital computer. What is the role of CPU?
   - (b) What is Software? Differentiate between application software and System Software.
   - (c) Discuss Memory hierarchy on the basis of speed and cast per unit size.
   - (d) Convert the following no.
       - i. $(1101.011)_{10} = (?)_2$ ii. $(BABBA + BAA)_{16} = (?)_{10}$
   - (e) What is OS? Write different functions perform by OS.
   - (f) What do you mean by flowchart? Draw a flowchart to compute the value of factorial n.
   - (g) What is the role of compiler, linker and loader and after writing a C program?

2. Attempt any five part of the following:-   (**3x5=15**)

   - (a) What do you mean by standard input and output in C? Write a program in C that input a single character using keyboard and prints it five times on screen.
   - (b) What is conditional operator? Write a statement to print the larger of two numbers using conditional operator?
   - (c) Write a program to find the area of triangle using formula:
       .Area of triangle= $(s*(s-a)*(s-b)*(s-c))^{1/2}$
       Where a, b, c are sides of triangle and s = (a+b+c+c) /2
   - (d) Write the various storage classes supported in 'C' with example.
   - (e) Explain different types of type casting in 'C language' with example.

   - (f) Write a program to calculate the sum of m to n numbers. Where, m and n are integers and m<n.

3. Attempt any five part of the following:-   (**3x5=15**)

   - (a) What is the use of the "switch " statement? Write the syntax of the switch statement and compare it with if statement.
   - (b) Differentiate between while and do-while loops with example.
   - (c) Write the program to print the following series:
       1/2! +2/3! +2/4! ….. up to n terms, where n is integer.
   - (d) What is a function? Write a program in C to find the largest of three numbers. Use function to write the program. The function reads the variables and returns the value of sum.
   - (e) Write a program to read and display the information about ten employees using structure.
   - (f) What is array? Write the program to find the sum and average of the given array:
       Array={10,11,2,9,25}

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4. Attempt any three part of the following: -   **(5x3=15)**

  (a) Differentiate between break and continue statement with example.

  (b) What do you mean by scope of the variable? Explain its type with example.

  (c) Write a program to add two matrices a[4X4] and b[4X4] of positive integers. The result should be stored in matrix R.

  (d) What do you mean by parameter passing mechanism? Differentiate between call by value and call by reference parameters with the help of example.

5. Attempt any two parts of the following:-   **(5x2=10)**

  (a) Explain the term 'pointer'. What do the symbols '*' and '&' imply? Explain with the help of example. Also write a program to add two numbers using pointer.

  (b) What is recursion? Write the recursive function to find the sum of digits of any number input through keyboard.

  (c) Write short note on opening, closing and modes of data file in C.