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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

First Semester, B.E. - Make-up Examination; Jan / Feb - 2017

Computer Concepts and 'C' Programming

(Common to all Branches)

Time: 3 hrs

Max. Marks: 100

Note: Answer *FIVE* full questions, selecting *ONE* full question from each unit.

UNIT - I

- 1 a. List and explain the factors affecting the processing speed of a computer. 8
- b. Write a flow chart to find the biggest of 3 numbers. 6
- c. Explain with example the following operators : 6
- i) << ii) ?: iii) &
- 2 a. List and explain different types of constants used in C. 8
- b. Write an algorithm to find the sum of 'N' natural numbers. 6
- c. Evaluate the following expressions :
- $a = 8, b = 15, c = 14$
- i) $2 * ((a \% 5) * (4 + (6 - 3)) / (C + 2))$ 6
- ii) $100 / 20 <= 10 - 5 + 100 \% 10 - 20 == 5 >= 1 != 20$
- iii) $Z = a ++ - b --$

UNIT - II

- 3 a. List and explain the different qualifiers for real and integer data types. 6
- b. Write a program to find the roots of a quadratic equation using switch statement. 10
- c. Differentiate between 'while' and a 'do-while' statements. 4
- 4 a. Consider the overtime (OT) and pay slip calculation for an employee in a company. 6
- 40 hours is required per week and extra hours are considered as OT at 1.5 times hourly rate.
- Write a program to calculate the gross salary.
- b. Give an example program to evaluate for '∞' loop. Explain how to exit from the loop. 6
- c. Write a program to evaluate the sine series up to given accuracy. 8

UNIT - III

- 5 a. Give the syntax for declaring one dimensional array and also explain the different ways of initializing one-dimensional array. Show the memory contents clearly. 8
- b. Write a program to search for a given element in a given matrix. 6
- c. List and explain with examples the different functions used to accept and display a string. 6
- 6 a. Write a program to sort 'N' Integer elements in an array using selection sort technique. 6

- b. Explain the following string handling functions with examples : 6
 i) strcat() ii) strcpy() iii) strlen().
- c. Write a program to sort given list of names. 8

UNIT – IV

- 7 a. Explain the different ways of passing parameters to functions with programming example. 6
 b. Write a program to find the biggest number in a list of 'N' numbers using function. Print the biggest in main. 8
 c. Explain the different arithmetic operations performed on pointers with examples. 6
- 8 a. Distinguish between local and global variables with a suitable example. 6
 b. Write a program to find the sum of 'N' real numbers using pointer variable. Display the numbers in reverse order. 8
 c. Write a function to search for a given element using Binary search method. 6

UNIT - V

- 9 a. With examples, explain the syntax of a structure and a union. 6
 b. Define a structure called student with the following members :
 i) std_name ii) std_id iii) marks of 3 subjects.
 Write a program to read 'N' students record and display their result based on following conditions : 10
 i) Marks of all subjects ≥ 40
 Display "Pass" along with all details.
 Otherwise fail.
- c. Explain the use of following functions : 4
 i) fclose() ii) fgetc().
- 10 a. Write a program to copy the contents of a file F1 to file F2. 8
 b. Declare a structure by name point with x and y co-ordinates as its member. Using this write a program to find the distance between 2 points. 8
 c. Write the steps in accessing a file. 4

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