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

*(An Autonomous Institution affiliated to VTU, Belgaum)*

**First Semester, B.E. – Semester End Examination; Dec. - 2015**

**Computer Concepts and 'C' Programming**

*Time: 3 hrs* *Max. Marks: 100*

***Note**: Answer any **FIVE** full questions, selecting at least **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 the flow chart to find the roots of a quadratic equation. 6

c. Explain with syntax the basic structure of 'C' program. 6

2 a. Define operating system. List the function of operating system. 5

b. Write an algorithm to calculate the total percentage of marks in two different subject and if the percentage of marks > 40 display pass else display fail. 7

c. What are the different types of type conversions available in C? Explain with an example. Also evaluate the following expression given below. 8

i) a / 2.0 = = 0.00 & & b/2.0 ! = 0.0 || C < 0.0

ii) a+ = + + a + ++a –a++

where; a = 5, b = 10, c = - 6. Both expressions are independent expression.

## UNIT - II

3 a. Using simple if else statement write a program to evaluate the following function 8

$$f(x,y)=\begin{cases} x+y & if\ x\geq 0\ \&\ y<0 \\ x^2+y & if\ x\geq 0\ \&\ y\geq 0 \\ x+y^2 & if\ x<0\ \&\ y>0 \\ x^2+y^2 & if\ x<0\ \&\ y\leq 0 \end{cases}$$

b. Explain with syntax formatted output statement along with an example. 6

c. Explain any two unconditional statements along with an example. 6

4 a. Explain the syntax for loop, write a program to find the sum of first 'n' natural numbers. 8

b. Using while statement, write a program to evaluate the following series. 6

$$f(x)=1+\frac{1}{x}+\frac{1}{x^2}+.....\frac{1}{x^n}$$

c. Write a program to perform the simple calculator function using switch statement. 6

## UNIT - III

5 a. Explain with an example the different ways of initiatizing one dimensional array along with the content of memory location. 6

Contd…..2

b. Write a program to search for a given element in the list of n numbers using binary search technique. 6

c. List and explain string handling functions. 8

6 a. Write a program to add two matrices. 8

b. Write a program to copy one string into another string. 6

c. Sort the following list in ascending order using selection sort method. Show each iteration clearly 48, 99, 38, -1, 2 6

**UNIT - IV**

7 a. What is the need of user defined function? Explain the general syntax of function definition. Also given an example for the same. 10

b. Write a function by name power to find the power of a number using this write a program to evaluate $x^y$, when y is integer data. 10

8 a. Explain with programming example different ways of passing parameter to a function. 10

b. Define pointer. How to access the content of the variable using pointer? Write a program to find the biggest element in an array using pointer. 10

**UNIT - V**

9 a. Explain the syntax of structure and initialization of structure members. Also explain how to create structure variable. 6

b. Differentiate between structure and union with an illustrative example. 6

c. Define a structure with data members as name, code, reg no. m1, m2, m3. Write a program to read and display n students information. 8

10 a. What is a file? Explain with an example various system file operation. 6

b. Explain the following file function with syntax

i) fseek ( );

ii) ftell ( ); 6

c. Write a program to read the content of one file and write the same into another file. 8

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