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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 - 2016/Jan - 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. With figure, explain the functional units of digital computer. 8

b. Differentiate between primary and secondary memory. 5

c. Write flow chart to find the roots of a quadratic equation. 7

2 a. Write an algorithm to count the number of +ve and –ve numbers in a list of *n* numbers. 8

b. What are the rules for framing variables? Give two valid and invalid examples. 6

c. Evaluate the expression given below. Also state the values of the modified variables, if any. Assume that the variables are initialized as shown below. Show the steps clearly. 6

p = 7, q = 3, x = 18, y = 8, i = 2, j = 5, k = 10

i) *q = p++ + p++ + --p + ++p - q++;*

ii) *w = x>y ? x>>2:y<<2;*

iii) *k *= (i+j)/3 + 3*j/4;*

UNIT - II

3 a. With syntax and example explain formatted i/o statement. 6

b. Given three sides of a triangle check whether it forms a triangle or not. If yes, print whether it forms equilateral triangle, or isosceles triangle or scalene triangle. 6

c. Explain with example, unconditional branching statement. 8

4 a. With syntax, explain for loop statement and do while statement. Also give an example to each. 6

b. Write a program to evaluate the following series upto *n* terms, 8

$1+\left(\frac{1}{2}\right)^2-\left(\frac{1}{3}\right)^2+$..... *n terms.*

c. Write a program to print the color based on the given character using switch statement, 6

'R' or 'r' →red, 'G' or 'g' →green

'W' or 'w'→ white, 'B' or 'b'→blue.

UNIT - III

5 a. Accept *n* numbers write a program to find mean, variance and standard deviation. 8

b. Give the syntax for declaring two dimensional array. Also explain the different ways of initializing two dimensional arrays. Show the content of memory. 7

Contd….2

c. Write a program to read *n* float numbers into array and compute their sum of squares of numbers. 5

6 a. Write a program to sort *n* element using bubble sort method. 6

b. Explain the following string handling functions with examples :
i) strcpy( ) ii) strcmp( ) iii) strlen( ). 6

c. Write a program to concatenate two strings without using library functions. 8

UNIT - IV

7 a. List and explain categories of functions. 12

b. Write a program to search for given element using linear search method. Write functions for search and display appropriate message in main 8

8 a. Declare a pointer variable of types char, float and int, and explain how to initialize the pointer variable with an example? Write a program to swap the content of two memory location using pointer. Display the content of memory before and after swap. 10

b. Write a program to pick largest and smallest number in a given list using pointer variable. 10

UNIT - V

9 a. Differentiate between structure and union. 6

b. Define a structure called employee with the following members :
i) emp_name ii) emp_id iii) gross pay iv) Deduction.
Write a program to accept details of *N* employees and calculate Net pay for each employee. Display all the details of an employee. 10

c. What is a file? What is its need? 4

10 a. Explain the following file handling function with example :
i) fopen( ) ii) fclose( ) iii) fscanf( ) iv) fprintf( ) v) fgetc( ). 10

b. What are the steps that are followed while accessing file? Explain. 4

c. Write a program to concatenate the contents of file 1 and file 2 and store the result in file 3. 6

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