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

(An Autonomous Institution affiliated to VTU, Belagavi)

Second Semester, B.E. - Semester End Examination; May/June - 2019

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. Define Computer. Explain the functional units of a computer with a neat block diagram. 6

b. List and explain the factors affecting the processing speed of a computer. 6

c. Explain the symbols used in writing a flowchart. Draw a flowchart to find the roots of a quadratic equation. 8

2 a. Explain the basic structure of a C program with an example. 6

b. Define C token. List and explain the various C tokens. 8

c. Explain the following : 6

i) Relational operators ii) Logical operators

UNIT - II

3 a. Explain formatted input and formatted output statements. 6

b. Explain the general syntax of a switch statement. Write a C program to display the given digit in words using switch statement. 8

c. Write a C program to evaluate the following function : 6

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

4 a. Write a C program to generate prime numbers with in the given range. 8

b. Differentiate between while loop and do-while loop. 6

c. Explain the syntax of the following with an example for each : 6

i) Goto statement

ii) For loop

UNIT - III

5 a. Explain the initialization of single dimensional arrays and two dimensional arrays. 8

b. Write a C program to search for an element in a given array using Binary search. 6

c. Write a C program to sort the given integers in ascending order using Bubble sort. 6

Contd…2

6	a.	Write a C program to multiply two matrices.	8
	b.	Explain the different string handling functions with examples.	6
	c.	Write a C program to concatenate two strings without using string handling functions.	6

UNIT - IV

7	a.	Explain the different categories of function.	8
	b.	Explain the different elements of user defined functions.	6
	c.	Write a C program to perform linear search on an array of *N* elements using user defined functions.	6
8	a.	Write C program to swap the contents of two variables using; i) Pass by value ii) Pass by reference	8
	b.	Define pointer. Explain how pointer are declared and initialized for all primitive data types?	6
	c.	Write a C program to find mean, variance and deviation of array elements using user defined functions.	6

UNIT - V

9	a.	Differentiate between Structure and Unions.	6
	b.	Write a C program to concatenate the contents of two input files and store it in a new file.	6
	c.	Define a structure Employee with data member as Name, Employee_id and salary. Write a program to read *N* employees information and sort the employee information based on Name.	8
10	a.	Explain the following with examples : i) fopen ii) fseek iii) frewind iv) ftell	8
	b.	Write a C program to count the number of characters, blanks, tabs and lines in a given file.	6
	c.	Explain the following with examples : i) Structure initialization ii) Array of structures	6

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