



--	--	--	--	--	--	--	--	--	--

## 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 an algorithm. Write the advantages of an algorithm. 6
- b. Define Type Conversion. Explain the different types of Type Conversion with example. 6
- c. Write an algorithm and flowchart to find the largest of three numbers. 8
- 2 a. Define Flowchart. Write a flowchart to find the roots of a quadratic equation. 8
- b. Define Variable. List the rules that are followed to define a Variable. 6
- c. Write the output of the following program :

```
void main ( )
{
    int x = 4, y = 25, z;
    x - = - x - x - + - x;
    y = y << z;
    z = 200 > 300 ? 40 < 50 ? 10:20:30;
    printf ("%d %d, %d", x, y, z);
}
```

6

#### UNIT - II

- 3 a. Differentiate between Break and Continue with example. 5
- b. Write a program to find the value of  $z$  using else-if-ladder. Where,
 
$$Z = \begin{cases} \sqrt{x} + 0.983 & \text{if } x > 30 \\ 1 + \log_{10} x & \text{if } x > 20 \\ \frac{1}{\tan^{-1} x} & \text{if } x > 10 \\ x^2 + \sin x & \text{otherwise} \end{cases}$$
 8
- c. With syntax and example, explain switch statement. 7
- 4 a. With syntax, explain formatted input and output functions. 6
- b. Write a program to check whether a given character is vowel or not using switch statement. 6
- c. Write a program to find the sum of two given numbers. If the sum is even, find the largest of two given numbers otherwise swap the contents of two given numbers. 8

**UNIT - III**

- 5 a. Differentiate between While and Do-while loop. 6  
 b. Write a program to find GCD and LCM of two given numbers. 6  
 c. Write a program to find the product of two matrices. 8
- 6 a. Define an Array. List and explain the different ways of initializing the Array. 7  
 b. Write a program to perform binary search on an array of 'n' elements. 7  
 c. Write a program to evaluate sine series. 6

**UNIT - IV**

- 7 a. Explain any three string handling functions in C with syntax and example. 6  
 b. Write a program to find mean, variance and standard deviation of an array of elements using functions. 8  
 c. Explain the different ways of passing parameters to functions with programming example. 6
- 8 a. Explain the four categories of functions with example. 8  
 b. Write a program to sort a list of names. 7  
 c. Define pointer. Write a program to swap contents of two variables using pointer. 5

**UNIT - V**

- 9 a. Define Structure. How to initialize the structure? 6  
 b. Write a program to read integer numbers from one file, sort those numbers and write the sorted data to another file. 8  
 c. Differentiate between Structure and Union. 6
- 10 a. Explain the following file handling functions with syntax : 10  
 i) fopen ( )      ii) fscanf ( )      iii) fseek ( )  
 iv) ftell ( )      v) fclose ( )
- b. Define a structure called STUDENT with the following members: std\_name, std\_id, marks of three subjects. Write a program to read 'N' students records and display their results based on following conditions : 10  
 i) Marks of all subjects  $\geq 40$   
 Display "PASS" along with all the details of student.  
 Otherwise display "FAILS" along with all the details of student.

\* \* \* \*