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

(An Autonomous Institution affiliated to VTU, Belagavi)

I/II Semester, B.E. - Semester End Examination; May/June - 2018

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 algorithm. List out the advantages of an algorithm.	6
b.	Write a flow chart to find the roots of a quadratic equation.	7
c.	Define variable. List the rules that are followed to create a variable. Give an example for valid and invalid variable.	7
2 a.	Define type conversion. Explain the different types of type conversions with examples.	6
b.	Write an algorithm to evaluate the following series : $\frac{1}{2}+\frac{2}{3}+\frac{3}{4}+\frac{4}{5}+$.......... upto N terms.	7

c. Write the output of the following program :

```c
#include<stdio.h>
main( )
{
int a, b, d = -1, e = 5;
char c[20] = "PESCE MANDYA";
a = 3, b = 2;
a += a++ + a++ + ++a;
printf( "%d", a);
b <<= 2;
printf(" %d", b);
d = d > 8 && e == 8;
printf ("%d", d);
printf ("%d", e = ++e == 6);
printf( "%9.7s", c);
}
```

7

UNIT - II

3 a.	With syntax, explain formatted input and output functions.	10
b.	Write a program to calculate gross salary for the following conditions : (Gross Salary = BS + DA + HRA + Conveyance) :	

Basic Salary (BS)	DA	HRA	Conveyance	
BS ≥ 5000	110% of BS	20% of BS	500	10
3000 < BS < 5000	100% of BS	15% of BS	400	
3000 < BS < 2000	90% OF BS	10% of BS	300	
BS < 2000	80% of BS	5% of BS	200	

4 a. List out the differences between break and continue.   4

  b. Write a program to generate Fibonacci series.   8

  c. Write a program to find smallest digit in a given number.   8

UNIT - III

5 a. Define array. With example, describe the different ways of initializing an array.   10

  b. Write a program to find mean, variance and standard deviation for a given list of numbers.   10

6 a. Write a program to find the product of two matrices.   10

  b. List and explain various string handling functions.   10

UNIT - IV

7 a. Define function. Write the differences between actual parameters and formal parameters with example.   10

  b. Write a program to count and print the prime numbers exist in the given range using functions.   10

8 a. Differentiate between pass by value and pass by reference.   5

  b. Define pointer. With example, explain how to declare and initialize the pointer?   5

  c. Write a program to find largest element in an array using pointer.   10

UNIT - V

9 a. Define structure. Explain the syntax of structure and initialization of structure. Differentiate between structure and union.   10

  b. Write a program using structure to read the following details of a student :

  Name, Register number, Branch, Marks of five subjects for 100. Calculate the total percentage of marks for each student and sort the student information based on total percentage.   10

10 a. Define file. Explain the following functions with syntax :

  i) fopen( )   ii) fclose( )   iii) fscanf( )   12

  iv) fseek( )   v) fgetc( )   vi) ftell( )

  b. Write a program to concatenate two input files.   8

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