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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; June - 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.	Define Algorithm. Explain its characteristics.	6
b.	What is a unary operator? Illustrate the use of increment and decrement operators.	5
c.	Differentiate between constants and variables. Explain basic data types supported by C language.	9
2 a.	Explain the symbols used in flow chart. Draw a flow chart to find roots of a quadratic equation.	10
b.	Explain the following operators in C : i) Relational operators ii) Logical operators.	10

UNIT - II

3 a.	Explain *printf( )* and *scanf( )* statements used in C language, with the help of examples.	10
b.	Distinguish between *while* loop and *do-while* loop. Explain how *for* loop works.	10
4 a.	Explain each of the following with an example : i) if-else ladder ii) ternary operator iii) un-conditional branching iv) formatted output and input statements.	10
b.	With general syntax, explain *switch* statement. Illustrate the use of *switch* statement in C program "to display name of months" by accepting integer from 1 to 12.	10

UNIT - III

5 a.	Explain 2D array with an example. Write a C program to print transpose of a given 3 X 3 matrix.	10
b.	Explain any three string handling functions in C language with example.	6
c.	Distinguish between Linear search and Binary search techniques.	4
6 a.	What is an array? List any two types of array. For each type, describe how declaration and initialization is done with an example?	10
b.	Write a C program that implements selection sort algorithm for sorting an array of *n* elements in descending order.	10

UNIT - IV

7 a. What is the use of a function? Write a C program to find LCM of two numbers using user defined function. 6

b. Write a C program to find factorial of a given number using recursive function. 4

c. What is a pointer? How do you declare a pointer variable? Explain. Write a C program using pointers to swap two numbers. 10

8 a. Briefly explain the different ways of passing parameters to functions with examples. 8

b. Illustrate the use of address operator and indirection operation in pointers. List any two benefits of using pointers in C program. 6

c. Write a C program to compute sum of all the digits of a given integer number (atleast 3 digit number), use function in the program appropriately. 6

UNIT - V

9 a. What is a structure? Explain the different ways of initializing structures. 6

b. With suitable example, explain how files are handled in C using *open* and *close* functions? 4

c. Write a C program to maintain *N* student's details with 6 fields (Reg.No., Name, M1, M2, M3, Result). Calculate total marks and print the result according to a given student register number. 10

10a. Distinguish between the following with an example :

   i) Structure and Array   ii) Structure and Union   8
   iii) *fopen( )* and *fclose( )*   iv) *fscanf( )* and *fprintf( )*.

b. Discuss how structures are declared and its members are accessed? 4

c. Write a C program to open a text file, read the data, perform the operation on data and display the result. Assume content of file suitably. 8

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