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Roll No. : .....

**322354(22)**

**B. E. (Third Semester) Examination, April-May 2021**

**(New Scheme)**

**(CSE Engg. Branch)**

**PROBLEM SOLVING & LOGIC BUILDING using C**

***Time Allowed : Three hours***

***Maximum Marks : 80***

***Minimum Pass Marks : 28***

***Note : Attempt all questions. Part (a) of each question is compulsory and carries 2 marks. Any two may be attempted out of parts (b), (c) and (d). Each part is of 7 marks.***

**Unit-I**

1. (a) Define : Algorithm, flowchart.

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- (b) Explain the relational and logical operators and conditional operator with example. 7
- (c) Explain the datatypes used in C language. 7
- (d) Explain the following : 7
- (i) Constant
  - (ii) Variable
  - (iii) Keyword
  - (iv) Identifiers

**Unit-II**

2. (a) Write down the difference between while and do-while loop. 2
- (b) Explain in detail the working of “break” and “continue” with example. 7
- (c) Write a program to find the smallest and the greatest element in the array. (Assume array size : 10). 7
- (d) Write a program to demonstrate the use of nested-if-else. 7

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**Unit-III**

3. (a) What is an array? Explain. 2
- (b) What is recursion? Explain with example. 7
- (c) What are the storage classes available in C? Explain. 7
- (d) Explain any three types of categories of functions. 7

**Unit-IV**

4. (a) Define : Pointer. 2
- (b) Explain the functionality of “malloc ( )” and “calloc ( )” functions. 7
- (c) Explain with suitable example the call by value and call by references. 7
- (d) Explain the concept of character pointers and pointers to pointers. 7

**Unit-V**

5. (a) Write down the difference between structure and union. 2

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- (b) Write a program in C to copy contents of one file to another file. 7
- (c) Explain structure within structure with the help of example. 7
- (d) Describe in brief the use of union and typedef. 7