

**I B. Tech I Semester Supplementary Examinations, July/August- 2021**  
**PROGRAMMING FOR PROBLEM SOLVING USING C**

(Com. to EEE, ME, ECE, Chem. E, EIE, Auto E, Min E, Pet E)

Time: 3 hours

Max. Marks: 75

**Answer any five Questions one Question from Each Unit**  
**All Questions Carry Equal Marks**

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1. a) Determine the value of the following 'C' expressions (3M)  
`int x = 5,y,z; y = x ++; z = ++ x; print f("%d %d ", x, y, z);`
- b) Define algorithm? Write the characteristics of an algorithm. (7M)
- c) Explain the steps in creating and running a C program. (5M)

**Or**

2. a) Define flowchart? How it is useful in writing the programs? Explain about (8M)  
different symbols in Flow chart?
- b) Implement an algorithm to find the sum of all the numbers in given range of (7M)  
numbers.
3. a) Develop a program to print Floyd triangle. (8M)
- b) Differentiate between while and for statement with an example. (7M)

**Or**

4. a) Develop a program that asks user an arithmetic operator ('+', '-', '\*' or '/') and (8M)  
two operands and perform the corresponding calculation on the operands. Use a  
switch statement.
- b) Differentiate type conversion and type promotion with suitable examples. (7M)
5. a) Develop a C program to sort the elements in an array in descending orders. (8M)
- b) Define Structure? Explain how to declare a structure and access structure members (7M)  
with an example program.

**Or**

6. a) Develop program to find the average of smallest and largest numbers in a given (8M)  
array.
- b) Illustrate the use of typedef with a code snippet. (7M)
7. a) Develop a program using pointers to compute the sum of all elements stored in an (8M)  
array.
- b) What is a pointer variable? How is a pointer variable different from an ordinary (7M)  
Variable? Briefly explain pointer arithmetic.

**Or**

8. a) What is dynamic memory allocation and explain the difference between malloc() and calloc(). (8M)
- b) Describe the usage of # define and # include statements. (7M)
9. a) What is a File? Explain fopen() and fclose() functions with suitable examples. (8M)
- b) Develop a C program to count the number of characters in a file. (7M)

**Or**

10. a) Find the sum of digits of a given number using recursion. (8M)
- b) Write a C program that reads contents of a file and displays then in capital letters if they are alphabets. (7M)

