

**I B. Tech I Semester Supplementary Examinations, May/June - 2019**  
**C PROGRAMMING**  
(Com. to All Branches)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions  
All Questions carry **Equal** Marks

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1. a) What are the main steps followed in the development of an algorithm? Write an algorithm for sum of digits in a given number. (8M)  
b) Explain in detail the prototype of 'scanf' function in C including its argument list and return type. (7M)
2. a) Write a C program to find the sum of squares of first N natural numbers. (8M)  
b) Which statement is a multi way selection statement? Why? (7M)
3. a) Explain the use of 'break' statement. Write a program to check whether a number is prime or not using break statement. (8M)  
b) Write a C program to find the length of a string without using string handling function. (7M)
4. a) How is a 2-D matrix represented in memory? Write a program to add elements of a (3x3) matrix row wise and generate a (3x1) matrix. (8M)  
b) What is header file? Discuss its use in C programming. (7M)
5. a) What is the difference between call by value and call by reference? Explain with the help of an example. (8M)  
b) Give a recursive solution for towers of Hanoi Problem. (7M)
6. What are the various operations performed on Pointers? Explain with an example. (15M)
7. a) Write a program to calculate the grade of the student in a class of 60 students using structures. Take appropriate elements in the Structure. (8M)  
b) How memory is allocated to union? How they are declared and initialized? (7M)
8. What are different types of file operations in C language? Discuss with suitable examples. (15M)