2. a) What is algorithm ? Write an algorithm to compute roots of a quadratic equation.

   b) Write a C-program to find multiplication of two matrices.

   2+3+5

3. a) What is pointer ? Discuss the difference between *call by value* and *call by reference* in C.

   b) Write a C-program to find the string length without using ***strlen ()*** function. 2+3+5

4. a) What do you mean by *"structure"* in C language ? What is the utility of it ?

   b) What is the difference between local and global variables in C language ?

   c) Write a C-program to add two complex numbers by passing *structure* to a function. 3+2+5

5. a) Write a C-program by using recursive function to calculate the factorial of a given number.

   b) What are the differences between ***switch-case*** and ***if-else*** statement ?

   c) Define dynamic memory allocation. What are the memory allocation functions and their utilities ? 3+3+4

B. Sc. Mathematics Examination, 2019

(1st Year, 2nd Semester)

Mathematics (Honours)

Computer Science-I

Paper - GE-2

Time : One and Half hours Full Marks : 30

The figures in the margin indicate full marks

Answer ***any three*** questions from the following :

1. a) Describe the utilities of various looping structures used in C language.

   b) What are the advantages of using *function* in a C-program?

   c) Write a complete C-program to print the following pattern using *for loops*.

```
A
AB
ABC
ABCD
ABCDE
ABCDEF
 BCDEF
  CDEF
   DEF
    EF
     F
```

   3+2+5