B.E. PRINTING ENGINEERING (Old) 1st Year, 1st (OLD) Semester Examination, 2019
PROGRAMMING LANGUAGE

Full Marks: 100   Time : 3 Hr

Answer ANY Five Questions

Write answers to the point and state all the assumptions (wherever required). All programs should contain appropriate comments.

ALL PARTS OF THE QUESTION SHOULD BE ANSWERED TOGETHER

Q 1) (a) What are the differences between structures and union?   [3]

   (b) What is the use of typedef?   [2]

   (c) Write a program to find Factorial of a Number?.   [7]

   (d) Write a recursive function which returns the nth term of the series $x + \frac{x^3}{2!} + \frac{x^5}{3!} + \ldots$, with x and n passed as arguments.   [8]

Q 2) (a) What is the difference between Strings and Arrays?   [3]

   (b) What does a static variable mean ?   [2]

   (c) Write a programs to to find two multiply matrices?   [5]

   (d) Write a function which takes as argument a string and replaces all spaces in that string by minus signs, and returns the number of spaces it replaced. Do not use any string library functions.   [10]

Q 3) (a) What is Preprocessors ? Define some Preprocessors in C ?   [2+3=5]

   (b) What is meant by file opening ? What is a file pointer ? How is fopen() used ? How is a file closed ?   [7]

   (c) Implement a calculator, which performs addition, multiplication, subtraction and division operations as per user choice in C using switch statement.   [8]

Q 4) (a) Difference between syntax vs logical error?   [3]

   (b) What is pre-increment and post increment ? Give examples   [3]

   (c) Write a programs to find whether given number is a prime number or Not? [4]

   (d) Write a C function *mystoi* which accepts a string of numerals, with an optional + or − in the beginning, converts it to an integer and returns the integer (e.g. a string like "-567" is converted to an integer -567). Your function should check for erroneous input (not a digit or + or -) and should exit with an exit argument in such a case. Include necessary headers.   [10]

Q 5) (a) What modular programming ?   [2]

(b) Differentiate between a for loop and a while loop? What are it uses? Give examples.
[5]

(c) Write a programs to add Two number using Pointers ?   [3]

(d) write a C programs to print following output ?
[10]

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*
**
***
*****
******
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Q 6) (a) Write a program which uses takes in 5 integers through command line and outputs
the sum of them.   [5]

(b) Write a programs to Armstrong number using array ?.   [5]

(c) Write a C program which accepts the coordinates of the vertices of a triangle and
checks whether the triangle is an equilateral or isosceles or right-angled triangle or
not.   [10]

Q 7) (a) Differentiate between pass by reference and pass by value with examples.
[5]

(b) When is the "void" keyword used in a function? What are the different ways in
which main() can be written ?   [5]

(c) Write a programs find factorial Number using functions?.   [5]

(d) Four tests are given to a class of 30 students. Write a program that calculates the
average in each test and the class average of all tests.   [5]