K (Printed Pages 4)

19/280-BE

B.Tech. (First Semester) Examination, 2019

Paper : KCS-101

(*Programming For Problem Solving*)

Time : Three Hours] *[Maximum Marks : 100*

Note : Attempt questions from **all** sections as per instructions.

Section - A

(Very Short Answer Type Questions)

Note : Attempt **all** parts of this question. Give the answer of each part in about 50 words.

2×10=20

1. (i) What is Pseudo Code? Where and for what purpose it is used?

   (ii) What are the functions of a loader?

   (iii) Differentiate between object file and executable file.

   (iv) What are the steps in the compilation process of a C program?

   (v) What do you mean by iterative construct? Explain with example.

P.T.O.

(vi) State the difference between a function and a procedure.

(vii) Differentiate between local and global variables with example.

(viii) What is a string variable? Give example.

(ix) What is Pointer?

(x) What is a macro? How is it useful?

Section - B

(Short Answer Type Questions)

Note : Attempt **all** questions. Give the answer of each question in about 200 words.

$10 \times 5 = 50$

2. Differentiate between

(a) Compiler and interpreter

(b) Operating system and user interface

OR

What is the difference between a loader and a linker? Explain.

3. Write a C program to print all prime numbers between 1 to 300.

OR

Explain with example

(i) Nested loop

(ii) Standard I/O in C

4. What are the data types in C language? Define and give examples.

OR

What are the logical operators in C? Explain with examples.

5. Write a recursive or it erative function in C for finding the factorial of an integer N.

OR

Write a recursive or iterative function in C to compute the GCD of two integers M and N.

6. Differentiate between while and do while loop with examples.

OR

Write program segments to illustrate

(i) Call by value

(ii) Call by reference

Section - C

(Long Answer Type Questions)

Note : Attempt any **two** questions. Give answer of each question in about 500 words.

$15 \times 2 = 30$

7. Define Algorithm. What are its essential properties? Write an algorithm to search for a number N in a sorted list A (1:n).

8. Differentiate between:
   (a) Testing and Debugging of a Program
   (b) CUI and GUI
   (c) Input Device and I/O device
   (d) Algorithm and computational procedure
   (e) Bitwise and assignment operator

9. What do you understand by the terms: Structure, Union in C Programming? Give an example of each.

   Define a structure 'student' consisting of name, class, roll no, address as its member and also initialize it by suitable values.

10. Draw the flowchart for computing the sum to n terms of the following series:
    $S=1 + x + x^2 + x^3 + ... x^n + x^{n+1} +.....$
    The value of x, n are to be supplied at run time. Write a C program for the above problem.

11. Write short notes on:
    (a) C preprocessor
    (b) File I/O Functions