2054
B.E. (Mechanical Engineering)
Second Semester
ESC-X01: Programming Fundamentals

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following:-

a) Differentiate among compiler and assembler.

b) Write a flowchart for computing sum of even and odd numbers from 1 to 50.

c) Write a C function that inputs array elements by call by reference method. Discuss the memory allocation for array elements.

d) State the complexity of bubble sort and selection sort algorithms.

e) Explain with example, the structure and union. (5x2)

UNIT - I

II. a) Compare if, if-else-if and nested if statements.

b) Differentiate among primary and secondary memory. (2x5)

III. a) Explain step-by-step method to sort a list of numbers using bubble sort algorithm.

b) What are the strings? Define and explain built-in-type string handling functions. (2x5)

IV. a) Explain the logical and bitwise operators?

b) Write a note on different types of storage classes. (2x5)

UNIT - II

V. a) Explain declaration and accessing members of a structure. Give one suitable structure program for the same.

b) Write C program to copy contents of one file into another. (2x5)

VI. a) What is a recursive function? Write C program to compute factorial of a number using recursion.

b) Explain enums and bit fields (6,4)

VII. Write a note on the following:-

a) Dynamic memory allocation

b) Arithmetic on pointers

c) Break and continue

d) Standard file handling operations (4x2½)

x-x-x