2015
B.E.(Bio-Technology), Second Semester
ESC-X01: Programming for Problem Solving
(BIO, EEE)

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.   Attempt the following:-

a) How compiler is different from assembler? Give one example of each.

b) What are the user-defined data types of C language?

c) What is an algorithm's complexity? State complexity of bubble sort algorithm.

d) Write C code to pass array elements to a function. Discuss storage allocation of an array.

e) Classify the following as valid/invalid Identifiers.

i) num2   ii) $num1   iii) +add   iv) a_2   (5x2)

UNIT - I

II.   a) Write an algorithm or program to count the number of vowels in a given string.

b) Differentiate among primary and secondary memory. Also discuss their types.   (2x5)

III.   a) Write an algorithm for selection sort, and explain step-by-step method to sort a list of given numbers by selection sort algorithm.

14, 90, 59, 28, 85, 64

b) Differentiate call by value and call by reference method. Give one suitable example to illustrate.   (2x5)

IV.   a) What are decision making and looping statements? Write a program to find the sum of numbers from 1 to 50.

b) Explain the logical and bitwise operators?   (2x5)

UNIT - II

V.   Write a C program for a structure Student with the following fields: name (string), age (integer), and marks (float). The program should allow the user to input the details of 5 students, store them in an array of structures, and then display the details of all students.

(10)

P.T.O.

VI. a) Write a C program to generate Fibonacci series using recursive functions.

b) Explain dynamic memory allocation in C language. (6,4)

VII. Write a note on the following:

a) Structure v/s Union

b) Pointers

c) Random access file operations

d) Command line arguments (4x2½)

x-x-x