

1128  
B.E., First Semester  
CS-104: Computer Programming

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

- I. Write short answers of the following:-
- What are bit fields? Why are they used?
  - What is the purpose of following shell commands: cp, cd, cat, chmod?
  - What do you mean by scope of a variable? List various types of scopes available in C language.
  - What would be the values of a and b after the evaluation of expressions  $a=2\|3$  and  $b=2\|3$ ?
  - What are static variables? What is their use? (5x2)

UNIT - I

- II. a) With the help of block diagram, describe in brief various components of computer.  
b) Describe various bitwise and logical operators available in C language? (5,5)
- III. Differentiate between:
- While and Do-while
  - = and == operators
  - Call by value and call by reference
  - Iteration and recursion (10)
- IV. a) Write a C program to print Floyd's triangle as shown below. The number of rows of Floyd's triangle is to be entered by the user.
- ```

1
2 3
4 5 6
b) 8 9 10

```
- b) Write a recursive program to find sum of digits of a number. For example, for a given number 234, the program should output 9. (5,5)

(2)

UNIT - II

- V. a) What are unions? How are they different from structures? With the help of an example, describe how is union declared, defined and used.
- b) What are macros? How are they different from functions? Write a macro to find greatest of two numbers. Illustrate the use of this macro in a C program. (5,5)
- VI. a) Write a C program to count the number of characters and words in a file. Take the name of the file from the user by making use of command line arguments.
- b) What is typedef? What is the advantage of using it? Illustrate its use in a C program. (5,5)
- VII. Write short notes on any two of the following:-
- a) Classes and objects
- b) Polymorphism and Inheritance
- c) Error handling (5,5)