INSTITUTE OF ENGINEERING

Examination Control Division

2072 Chaitra

Exam.		Regular	
Level	BE	Full Marks	80
Programme	ALL (Except B. Arch)	Pass Marks	32
Year / Part	I / I	Time	3 hrs.

Subject: - Computer Programming *(CT401)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. a) What is a flow chart? Use the various commonly used flow chart symbols. How does a flow chart help computer programming? [2+2+2]

   b) What is a program? Briefly describe types of computer software. [2+2]

2. a) What is an operator, datatype, constant and variable? Define. [6]

   b) Define and write syntax of the following: [4]
      i) gets()
      ii) putchar()
      iii) scanf()
      iv) strlen()

3. a) How is the switch statement used in decision making? Explain with a suitable example. [4]

   b) Write a program to check whether a given integer is a triangular number or not. [6]

   (Any number is a triangular number if the sum of natural number from 1 to any number i is exactly equal to that number. For e.g 1,3,6,10,15 etc are triangular number as, 1+2=3, 1+2+3=6, 1+2+3+4=10, 1+2+3+4+5=15)

4. a) Briefly explain the passing by value and passing by reference in function with example. [6]

   b) Write a program to calculate sum of digits of a given 5-digits number entered by the user using recursive function. [4]

5. What is a string? Write a program to read a 3*3 square matrix, find minimum integer value of a matrix, replace the diagonal elements by the minimum element and display it using pointer. [2+8]

6. a) What is the principal difference between a structure and an array? [2]

   b) Write a program to read structure "college" having name, estDate and location where estDate is an another structure having day, month and year as members. Display the records of 10 colleges. [8]

7. a) What is a data file in C? What are the modes in file handling? Explain briefly. [1+3]

   b) Write a program to read the information of a file named "data.txt" and write its contents to another file "record.txt". [6]

8. a) Compare DO and implied DO statement in FORTRAN. [3]

   b) Write a FORTRAN program to add and subtract two matrices and display the results in matrix form. [7]

***