Exam.		**New Back (2066 & Later Batch)**	
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) Define software. Explain its types. [3]
   b) What are the steps required to develop a computer program? Explain. [5]

2. a) What are relational operators and assignment operators? Explain with examples. [3]
   b) Rewrite the following program by correcting any syntactical errors, if present. Also show the output of the corrected code. [3+2]

   ```
   #Include <stdio.h>
   int main ( )
   {
       float root, int i = 1;
       do {  sum = 2i – 1;
             print ("\t%d\n", sum);
             i *= 5/3;
       } while (sum <= 15)
       root = pow (i, 1/2);
       print ("\n%.3f", root);
       return void;
   }
   ```

3. a) Write a program to read the number until - 1 is encountered. Also count the number of even number and odd numbers entered by the user. [6]
   b) Distinguish between break and continue statement with example. [4]

4. a) Explain how function is defined in C? Differentiate call by value and call by reference. [1+2]
   b) Write a program using a function that returns the largest number from an array of numbers that is passed to the function. [5]

5. a) How are one dimensional and two dimensional arrays created in C? Explain with examples. [2+2]
   b) Write a C program to read two matrices from user, add them and display the result in matrix form. [6]

6. What do you mean by nested structures? Give suitable example. Write a program to read the heights of two students and display the difference between their heights. Use feet and inches as members of a structure to define height. [2+6]

7. a) Compare array and pointer with example. [3]
   b) Write a program to read a string from user and use a user defined function to copy the content of the read string into another character array changing lower case letter to upper if any. Use pointer to process the string. [5]

8. Write a program to read the details of book authors and write it to a file, until the user confirms to end. Then read and display the nth record in the file, where n is read from the user. The data for authors must be represented by structures that contain name, nationally and number of books published. [8]

9. a) Explain the FORTRAN structure. What are data types in FORTRAN. [2+2]