

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 mean by compilation? What is mean by interpretation? How do these two processes differ? [4]
- b) Define programming language? What are the features of good computer program? [1+3]
2. a) What are preprocessor directives? Explain constants and variables. [2+2]
- b) Write syntax and example of following statements/functions: [1+4]
 - i) printf
 - ii) getch
 - iii) scanf
 - iv) long
3. What are control statements? Illustrate nested IF statement with its flowchart. Write a program to calculate the series: $1 \times 10 + 3 \times 20 + 6 \times 30 + \dots + \frac{N(N+1)}{2} \times 10N$, where N is an integer term read from the keyboard. [2+2+6]
4. a) Write a program to display Armstrong numbers between the range entered by a user and also display their counts. You must use a function to check for Armstrong numbers and display them from main. [4]
- b) What do you mean by nested function and recursive function? Give an example of recursive function. [2+2]
5. a) Write a C program to read a string and display its reverse. Use user defined function to count number of characters in it and to reverse it. [4]
- b) Write an algorithm to insert a value in an array at a position given by user. [4]
6. a) What is a tag? Must a tag be included in a structure type definition? Must a tag be included in a structure variable declaration? Explain. [1+1+2]
- b) Write a C program that reads several different names and address using structure computer, rearrange the names into alphabetical order and write out alphabetical list. [4]
7. Illustrate with example that "Array is indirectly a pointer". Write program to calculate sum and average of integer numbers between M and N (where value of M and N are read from keyboard) using pointer. [4+4]
8. Write a program to continuously read name, age and salary of a worker and write it into a file until user confirms to end. Then read n from user and display the nth record in the file. Details of worker must be represented by a structure. [7]
9. a) Compare arithmetic and logical if statements in FORTRAN. [7]
- b) Write a FORTRAN program to display nature of roots of a quadratic equation. Calculate and display the roots, if they are real and equal. [8]