

Exam.	Regular	
Level	BE	Full Marks 80
Programme	All Except B.Arch.	Pass Marks 32
Year / Part	1 / 1	Time 3 hrs.

**Subject: - Computer Programming I (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) Write down the difference between Compiler and interpreter. Explain the role of linker.

[2+2]

b) Explain the importance of flowchart. Also draw a flowchart to find reverse of an integer number. For example, 12345 is an integer number and its reverse is 54321.

[1+3]

2) a) Why do we include <stdio.h> in our program? Can we write a C program without using any header file?

[2+1]

b) Give the output of the following program and justify your answer with reason.

[3]

```
#include<stdio.h>
int main()
{
    int x=3,y=5,z=7;

    int a,b;

    a=x*2+y/5-z*y;

    b=++x*(y-3)/2-z++*y;

    printf("a=%d",a);

    printf("b=%d",b);

    return 0;
}
```

- c) Write a program that prints the floating point value with following specification. [2]
- Correct up to two decimal places.
  - Correct up to four decimal places.
- 3) a) Write a program to read the number until -1 is encountered. Also count the number of prime number and composite numbers entered by the user [6]
- b) Explain why goto statement should be avoided? Distinguish between break and continue statement with example source code. [1+3]
- 4) a) Write a program to calculate the  $\exp(x,y)$  using recursive function without using  $\text{pow}()$  function. [Example:  $\exp(2,3)=2^3$  i.e.  $2*2*2=8$ .] [4]
- b) Differentiate between call by reference and call by value with example. [4]
- 5) Explain how array can be passed to a function. Write a program to transpose a  $3*3$  matrix. Two matrix are input from the main () function and pass to a user defined function with argument as array. The result is displayed from the main function. [2+6]
- 6) What is advantage of using structure? Create an array of structure name Employee with name and salary as structure member and the array of structure is passed to a function which sorts in ascending order on the basis of salary and display the sorted array from main(). [2+6]
- 7) a) Compare array and pointer with example. [3]
- b) Write a program reads 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) a) Differentiate between text file and binary file. [2]
- b) Write a program, taking care of all the possible error condition that may occur, to open a new file name DATA that reads integers from user until user says "no". After reading the data write all the odd numbers to a file called ODD and all the even number to file called EVEN. [8]
- 9) Explain the FORTRAN structure .what are data types in Fortran. [2+2]
- 10) Write a program in FORTRAN to solve quadratic equation and display roots in proper format. [8]

\*\*\*