Total No. of printed pages = 9

RETEST EXAMINATION – 2022

Semester : 3rd

Subject Code : CAI-302

COMPUTER PROGRAMMING WITH C/C++

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Instructions :

(i) *All* questions of PART–A are compulsory.

(ii) Answer any *three* questions from PART–B.

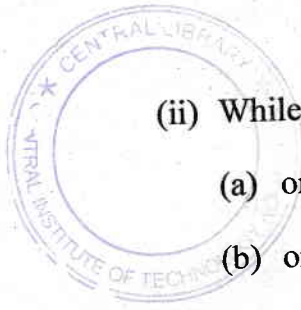**PART – A**

Marks – 25

1. Choose the correct answers : 1×10=10

    (i) Preprocessor directive is represented by

       (a) $ (b) #

       (c) *   (d) None of these

(ii) While loop can be run at least

    (a) one time, if condition is false

    (b) one time, if condition is true

    (c) many times, if condition is true

    (d) many times, if condition is false

(iii) Do-While loop cannot be run at least

    (a) one time, if condition is false

    (b) one time, if condition is true

    (c) many times, if condition is true

    (d) many times, if condition is false

(iv) Shell is used for interaction between shell and

    (a) user   (b) kernel

    (c) hardware   (d) None of these

(v) Which of the following is not valid as variable name ?

    (a) _x   (b) _32c

    (c) 4_bb   (d) A_10

(vi) Consider the statement :

int d = – (–a++);

What is the value of d, if a is 6 ?

(a) –6   (b) 6

(c) –7   (d) 7

(vii) If b=5, then the value of ++b will be

(a) 6   (b) 5

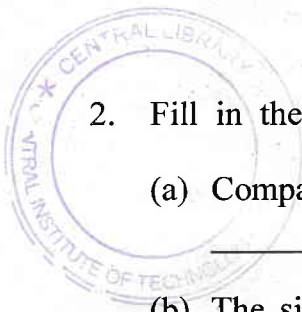(c) 7   (d) None of these

(viii) Syntax of for loop is

(a) for (; ;)   (b) for (; ; ;)

(c) for (; :)   (d) None of these

(ix) Structure and union occupies

(a) same size   (b) different sizes

(c) None of these   (d) No size

(x) Logical OR operation is false when

(a) both operands are true

(b) both operands are false

(c) any one operand is false

(d) None of these

100/CAI-302/C.Prog.C/C++   (3)   [Turn over

2. Fill in the blanks :   1×5=5

   (a) Comparing two strings can be done by
       _____.

   (b) The size of a long integer is _____ bytes.

   (c) **Switch is used with** _____ in c language.

   (d) C++ language has been developed by
       _____.

   (e) C programs are compiled into obj with the
       help of _____. (an interpreter/a compiler)

   (f) _____ header file is related to mathematical
       funtion. (coni0.h/math.h)

3. Write true or false :   1×10=10

   (a) When an array is declared, memory is
       reserved for it.

   (b) Void is a generic pointer.

   (c) Constructor gets called when an object is
       being created.

   (d) A break statement is used to stop the
       execution of a program.

(e) A pointer variable stores the value of another variable.

(f) '+' operators could be overloaded.

(g) Destructor has a same name as the constructor and it is preceded by ~.

(h) Through Polymorphism, we can eliminate redundant code and extend the use of existing classes.

(i) The function fputs( ) takes three parameters.

(j) A function may contain more than one return statement.

PART – B

Marks – 45

4. (a) Write down the pre and post increment operator with the example. 5

   (b) What are the key differences between C and C++ ? 5

   (c) Explain recursion in c programming with example. 5

5. (a) Write down the output of this program. 7

```c
#include<stdio.h>
intmain()
{
    int x;
    for (x = -1 ; x>-9 ; x--)
    {
        if (x>-4)
        {
        Continue;
        Printf ("programming in c");
        }
        else
        break;
    }
    Return 0;
}
```

(b) What are the errors in this program ?   8

```c
#include<stdio.h>
intmain()
{
    void fun():
    int i=1;
    while (i<=5)
    {
        Printf ("%d\n", i);
        if (i>2)
                    goto here;
    }
    Return 0;
}
void fun()
{
    Here;
    Printf ("it runs");
}
```

(c) Write down a c program to display the factorial of input number using the recursion.

4+4+7=15

6. (a) Write a c program to display the following number sequences : 7

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

(b) Write a c program to display the following number sequence : 8

5

5 4

5 4 3

5 4 3 2

5 4 3 2 1

7. (a) Write down all the string related functions with the example. 8

(b) Write down a c program to calculate the value of 2^5.

Or

Write down a c program to check the given number is prime or not.   7

8. Differenciate any *three* of the following : 5×3=15

(i) Structure and Union

(ii) Inheritance and Polymorphism

(iii) Kernel call and system call

(iv) While and for loop.