National Institute of Technology

Tiruchirappalli, Tamil Nadu – 620 015

CSPC31 – Principles of Programming Language: Date: 02.11.2023

Cycle Test II

Duration: 1 Hour **Time:** 11:00 AM – 12:00 PM

Total Marks: 20

1. If the base class members are declared as "private" and the derived class is derived using the access modifier "public", then can the derived class access the class members of base class?

(1 M → CO2)

(a) Yes (b) No

2. Draw the Inheritance diagram and complete Class Instance Record (with vtable) for the following program. *(1 M + 6 M → CO5)*

```
class Base
{
   public:
      int a, b, c;
      virtual void add() { . . . }
      virtual int sub() { . . . }
      virtual void mul() { . . . }
}

class Derived : public Base
{
   public:
      int w, x;
      void add() { . . . }
      int sub() { . . . }
      int div() { ... }
}
```

3. Will the following function compile correctly? *(1 M + 2 M → CO4)*

[Hint: State Yes or No with Reason]

```
void fun(int*ptr, intx) throw ()
{
   if (ptr== NULL)
      throw ptr;
   if (x == 0)
      throw x;
}
```

4. When and in what order, the destructor will be called in the following C++ program? *(4 M → CO2)*

```
void main()
{
 Base b();
 b.add();<------- A
 Derived d();
 d.sub();<------- B
}<------- C
```

5. In C++ program, a throw keyword without any value/variable_name can_____ *(1 M → CO4)*

(a) Occur only inside a handler (b) Occur anywhere inside a program

(c) Occur only inside a try loop (d) None of the above

6. Any object that is created inside a try loop *(1 M → CO1)*

(a) Will be deleted at the end of that try loop

(b) Will be active even outside that try loop

(c) Will be active throughout the whole program

(d) None of the above

7. The class at point A and point B are called as ____ and____ respectively. *(1 M → CO4)*

```
class base <------- A
{
   ....
   class derived <------- B
   {
      ....
   }
}
```

(a) Nested and Nesting Class (b) Nesting and Nested Class

(c) Virtual Class and Nesting Class (d) Nesting and Virtual Class

8. When should one use the "delete" keyword in C++ program in order to delete an object? *(2 M → CO4)*