International Islamic University Chittagong
Department of Electrical and Electronic Engineering

Final Examination Autumn-2018 Program: B.Sc. Engg. (EEE)
Course Code: CSE 1205 Course Title: Computer Programming-II
Time: 2 hours 30 minutes Full Marks: 50

Part A

[Answer any ***two*** questions from the followings; figures in the right margin indicate full marks.]

1(a). What is operator overloading? Explain the initialization of operator overloading. **03**

1(b). When do we need to use friend functions? Explain. **03**

1(c). Write a program to Implement function overloading (for multiplication) for complex numbers using friend functions. **04**

2(a). Consider the following figure. List all the inheritances occurring among all classes. **03**

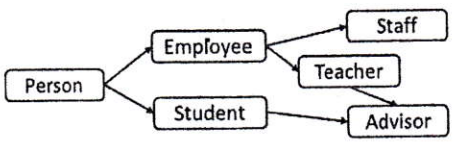

Fig.2(a)

2(b). Multipath inheritance May lead to duplication of inherited members. What is the method of avoid this duplication? Write a program to illustrate it. **03**

2(c). Consider the following figure. The figure shows some classes with their data members. Mentioning the type of inheritance occurred in the figure, write a program to evaluate this. **04**

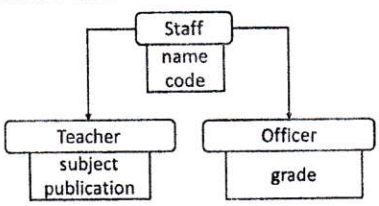

Fig.2(c)

3(a). Write a program to overload binary operator using friend function. **02**

3(b). Is there any way possible for the objects of a derived class to access the private members of the base class? If it is yes, then give an example. **03**

3(c). Define virtual base class with an example. **02**

3(d). What is the output of this program? **03**

```
#include <iostream>
using namespace std; struct a
{ int coun t; };
struct b { int* value; }; struct c : public a, public b { };
int main()
{ c* p = new c; p->value = 0; cout << "Inherited"; return 0; }
```

Part B

[Answer any ***three*** questions from the followings; figures in the right margin indicate full marks.]

4(a). What is meant by streams in C++? What are the predefined streams in C++? **04**

4(b). What are the differences between formatted and unformatted I/O? Give an example. **03**

4(c). Is it possible to write and read from/to file? If yes, create a program to illustrate it with proper comments. **03**

5(a). When function overriding occurs? **01**

5(b). "We cannot create objects of abstract class" comment with proper reason? **02**

5(c). Write a program to show runtime polymorphism using pointer. Mention where the runtime polymorphism occurs. **04**

5(d) What is abstract function? Give an example. **03**

6(a). Write a program of your choice to show the use of Generic Class using template. **04**

6(b). Write short notes on
a)Generic functions b)Generic classes c) Exception handling

6(c). How is template useful? Describe briefly. **02**

7(a). Differentiate between early binding and late binding. What does mean by polymorphism? Discuss with example **04**

7(b). What will be the output of the program ? **02**

```
class Base {     public:
 virtual void show() = 0;          };     void Base :: show()
{      cout << "Pure Virtual definition\n";
}  class Derived:public Base
{   public:    void show()
 { cout << "Implementation of Virtual Function in Derived class"; }
};   int main()   {     Base *b;
 Derived d;        b = &d;
 b->show();
}
```

7(c). (i) Can you create an object of an abstract class? justify your answer. **2+2**
(ii) Write a program with a try block to detect and throw an exception if the condition "divide by zero" occurs.