National University of Computer and Emerging Sciences, Lahore Campus

Course:	CP lab	Code:	CL103
Program:	BS (Computer Science)	Semester:	Fall 2018
Duration:	30 minutes	T. Marks:	20
Date:	Friday 23-11-2018	Weight	
Section:	C	Page(s):	
Exam:	Quiz 2		

Q1. Write output of the given code. Also point out if there is any syntax error: **(15 Points)**

```
class Tune
{
protected:
  int vol;
  char type;
public:
  Tune(int v){  vol=v; }
        void ring()=0;
        void test(){
    for (int i=0;i<vol;i++)
      cout<<type;
  }
  ~Tune(){ cout<<vol<<"D";  }
};
class TuneA:public Tune
{
public:
  TuneA(int v, char t):Tune(v){
      type=t;
  }
  void ring(){
    for (int i=0;i<vol;i++)
      cout<<"*";
  }
  ~TuneA(){  cout<<type<<"D1"; }
};
```

```
class TuneB:public Tune
{
public:
  TuneB(int v, char t):Tune(v){ type=t; }
  void test(){
    Tune::test();
    for (int i=0;i<vol;i++)
      cout<<"#";
  }
  ~TuneB(){      cout<<vol<<"D2"; }
};
class Mob
{
  Tune *p;
public:
  Mob(TuneA  &obj){   p=&obj;      }
  Mob(TuneB  &obj){   p=&obj;      }
  void ring()      {  p->ring();  }
  void test()      {  p->test();  }
};
void main()
{
  TuneA a(4,'A');   TuneB b(3,'B');
  Mob m1(a);        Mob m2(b);
  m1.ring();        m2.ring();
  m1.test();        m2.test();
}
```

Output: Write each character in separate box. (**Hint: Code has 20+ characters in output**)

Q2. Write member function setTune [having 2 parameters Tune & index] to set Tune at given index. First parameter can be any child class of Tune **(5 Points)**

```
class TuneLibrary
{
  Tune *tunes[15];
```