Test 1-2

Name:

Surname:

Section:

Email id:

V1

1 - Determine the exact output to the following program: [ 7 marks]

#include <iostream>  
using namespace std;  
class Base{  
 int  
 data;  
public:  
 Base(int data = 0){  
 this->data = data;  
 cout<<"CB:"<<data<<endl;

}  
 virtual void Act(){  
 cout<<"Base Acts."<<endl;  
 }  
 void work(){  
 cout<<"Base Works."<<endl;  
 }  
 int Data(){  
 return data;  
 }  
 ~Base(){  
 cout<<"BG"<<endl;  
 }  
};  
  
class Derived:public Base{  
public:  
 Derived(int data):Base(data/2){  
 cout<<"CD:"<<Data()<<endl;  
 }  
 void Act(){  
 cout<<"Derived Acts."<<endl;   
 }  
 void work(){  
 cout<<"Derived Works."<<endl;  
 }  
 ~Derived(){  
 cout<<"DG"<<endl;  
 }  
};  
int main(void){  
 Derived D(10);  
 Base& R = D;  
 Base\* P = new Derived(30);  
 P->Act();  
 P->work();  
 R.Act();  
 R.work();  
 delete P;  
 D.Act();  
 D.work();  
 return 0;  
}

[ 6 marks]   
2 - Complete the following incomplete class the best way possible:   
(write the destructor and overload “operator<<”)

#include <iostream>  
#include <string>  
using namespace std;  
class Str{  
 char\* \_data;  
public:  
 Str(const char\* str=""){  
 \_data = new char[strlen(str)+1];  
 strcpy(\_data, str);  
 }  
};

So the following code can use the above class and print “I am in oop344”.

int main(){  
 Str S = "I am in oop344";  
 cout<<S<<endl;  
 return 0;  
};

3- Determine the exact output of the following program: [ 5 marks]

#include <iostream>  
#include <string>  
using namespace std;  
struct Elem{  
 static int \_en;  
 int \_data;  
 Elem():\_data(++\_en){}  
 int data(){return \_data;}  
 static int en(){return \_en;}  
};  
int Elem::\_en = 0;  
int foo(){  
 static int a = 20;  
 return a+=2;  
}  
int main(){  
 int i = 0;  
 cout<<"W1"<<endl;  
 for(;i<3;i++, cout<<foo());  
 cout<<endl;  
 Elem E[10];  
 cout<<"W2"<<endl<<E[5].data()<<endl<<Elem::en()<<endl;  
 return 0;  
};

4 – Having the following class, create a constructor that initialized \_ref to an incoming integer reference and sets the \_data to an incoming integer value. [ 2 marks]

class Container{  
 int& \_ref;  
 int \_data;  
public:  
 //constructor here:

};