

CHAPTER – 15 – POLYMORPHISM

I. Answer in brief(2 marks)

1. What is function overloading?
2. List the operators that cannot be overloaded.
3. Class add{int x; public: add(int)}; Write an outline definition for the constructor.
4. Does the return type of a function help in overloading a function?
5. What is the use of overloading a function?

II. Answer in a brief(3 marks)

1. What are the rules for function overloading?
2. How does a compiler decide as to which function should be invoked when there are many functions? Give an example.
3. What is operator overloading? Give some examples of operators which can be overloaded.
4. Discuss the benefits of constructor overloading ?
5. class sale (int cost, discount ;public: sale(sale &); Write a non inline definition for constructor specified;

III. Answer in a paragraph (5 marks)

1. What are the rules for operator overloading?
2. Answer the question (i) to (v) after going through the following class.

```
class Book {  
    int BookCode ; char Bookname[20];float fees;  
public:  
    Book() //Function 1  
    { fees=1000;  
      BookCode=1;  
      strcpy(Bookname,"C++"); }  
    void display(float C) //Function 2  
    { cout<<BookCode<<": "<<Bookname<<": "<<fees<<endl; }  
    ~Book() //Function 3  
    { cout<<"End of Book Object"<<endl; }  
    Book (intSC,char S[ ],float F) ; //Function 4  
};
```

- (i) In the above program, what are Function 1 and Function 4 combined together referred as?
- (ii) Which concept is illustrated by Function3? When is this function called/ invoked?
- (iii) What is the use of Function3?
- (iv) Write the statements in main to invoke function1 and function2
- (v) Write the definition for Function4 .

3. Write the output of the following program

```

include<iostream>
using namespace std;
class Seminar
{ int Time;
public:
Seminar()
{ Time=30;cout<<"Seminar starts now"<<endl; }
void Lecture()
{ cout<<"Lectures in the seminar on"<<endl; }
Seminar(int Duration)
{ Time=Duration;cout<<"Welcome to Seminar "<<endl; }
Seminar(Seminar &D)
{ Time=D.Time;cout<<"Recap of Previous Seminar Content "<<endl;}

~Seminar()
{ cout<<"Vote of thanks"<<endl; } };
int main()
{ Seminar s1,s2(2),s3(s2);
s1.Lecture();
return 0;
}

```

4. Answer the questions based on the following program

```

#include<iostream>
#include<string.h>
using namespace std;
class comp {
public:
char s[10];
void getstring(char str[10])
{ strcpy(s,str); }
void operator==(comp);
};
void comp::operator==(comp ob)
{ if(strcmp(s,ob.s)==0)
cout<<"\nStrings are Equal";
else
cout<<"\nStrings are not Equal"; }
int main()
{ comp ob, ob1;
char string1[10], string2[10];
cout<<"Enter First String:";
cin>>string1;
ob.getstring(string1);
cout<<"\nEnter Second String:";
cin>>string2;
ob1.getstring(string2);

```



```
ob==ob1;  
return 0; }
```

- (i) Mention the objects which will have the scope till the end of the program.
- (ii) Name the object which gets destroyed in between the program
- (iii) Name the operator which is over loaded and write the statement that invokes it.
- (iv) Write out the prototype of the overloaded member function
- (v) What types of operands are used for the overloaded operator?
- (vi) Which constructor will get executed in the above program? Write the output of the program

IV. Additional Questions

1. Write the syntax for overloading an operator.
2. What is polymorphism? how is it achieved in c++?

