

Certificate

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Class: IIIrd Sem (CSE)

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Exam No:

Institution R M ANAND - TCE

This is certified to be the bonafide work of the student in the
Object oriented programming Laboratory during the academic
year 2020 / 2021.

No. of practicals certified _____ out of _____ in the
subject of _____

.....
Teacher In-charge

.....
Examiner's Signature

.....
Principal

Date:

Institution Rubber Stamp

(N.B: The candidate is expected to retain his/her journal till he/she passes in the subject.)

output = "Hello world,

Expt. No. L.

Date _____

Page _____

1. Write a program to print "Hello World".

#include <iostream.h>

using namespace std;

int main()

{

cout << "Hello World" << endl;

}

</div

3
printf ("Branch : %s\n", stdBranch);

Output :-
Enter your name:
Apple
Enter your College ID:
8
Enter your Branch:
CSE

--- full details ---

Name : Apple
College ID : 8
Branch : CSE

Expt. No. 2

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2) Write a program of structure in C.

```
#include <stdio.h>
struct Student
{
    char name [15];
    int Roll;
    char Branch [20];
};

main()
{
    int i;
    struct Student std;
    printf ("--- Get Details ---\n");
    for (i=0; i<3; i++)
    {
        printf ("Enter your name:\n");
        scanf ("%s", &std.name);
        printf ("Enter your College ID:\n");
        scanf ("%d", &std.Roll);
        printf ("Enter your Branch:\n");
        scanf ("%s", &std.Branch);
    }
    printf ("---\n");
    printf ("--- full details ---\n");
    for (i=0; i<3; i++)
    {
        printf ("name : %s\n", std.name);
        printf ("College ID : %d\n", std.Roll);
    }
}
```

Teacher's Signature

Output -

Enter your name :

Ramand

Enter your age :

27

Enter your salary :

50000

information.

Program

17

50000 /

Expt. No. _____

Date _____

Page No. 3

(b) Write a Program using functions to Structure:

#include <iostream>

using namespace std;

struct person

{ char name [30];

int age;

float Salary;

};

person getdata (struct person)

void displaydata (person);

int main ()

{

Person p;

p = getdata (p);

displaydata (p);

return 0;

3 person getdata (person p)

{

cout << " Enter your name " << endl;

cin >> p.name;

cout << " enter your age " << endl;

cin >> p.age;

cout << " enter your salary " << endl;

cin >> p.Salary;

return p;

3

void displaydata (person p)

Teacher's Signature

Output -

Enter BookId : 4353

Enter Book Price: 900

Displaying information.

Book = 4353

Price = 900

Expt. No. 2 (c)

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(C) Write Program of pointer to structure in c++;

#include <iostream>

using namespace std;

struct Book

{

int Bookid;

float Bookprice;

};

int main()

{

Book *ptr,b;

cout << "enter BookId:";

cin >> (*ptr).Bookid;

cout << "enter Book price:";

cin >> (*ptr).Bookprice;

cout << "displaying information" << endl;

cout << "book =" << (*ptr).Bookid << endl;

cout << "price =" << (*ptr).Bookprice << endl;

return 0;

3

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Output -

Enter Employee ID: 19
Enter Employee name: A.
Enter Employee age: 18
Displaying information!
Id : 19
Name : A
Age : 18

Expt No. 2(a)

Date _____

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d. Write a Program of array of structure.

~~# Include <iostream>~~

using namespace std;

Struct employee

{

int Id;

char name[50];

float age; };

3;

int main()

{

employee emp[3];

int i;

for(i=0; i<3; i++)

{

cout << "Employee ID: " << emp[i].Id << endl;

cin >> emp[i].Id;

cout << "Employee Name: " << emp[i].name << endl;

cin >> emp[i].name;

cout << "Employee Age: " << emp[i].age << endl;

cin >> emp[i].age;

3;

cout << "----- Employee details are ----- " << endl;

for (i=0; i<3; i++)

{ cout << "ID: " << emp[i].Id << endl;

cout << "Name: " << emp[i].name << endl;

cout << "Age: " << emp[i].age << endl;

3;

return 0;

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Output -

area of room = 1309

volume of room = 26132.8

Expt. No. 3.

Date _____

Page No. 7

(a) Write a program of class and object in it.

```
#include <iostream>
```

```
using namespace std;
```

```
class Room
```

```
{
```

```
public:
```

```
double length;
```

```
double Breath;
```

```
double Height;
```

```
double calculateArea();
```

```
{
```

```
return length * Breath;
```

```
}
```

```
double calculateVolume();
```

```
{
```

```
return length * Breath * Height;
```

```
}
```

```
int main()
```

```
{
```

```
Room room1
```

```
room1.length = 42.6;
```

```
room1.Breath = 30.8;
```

```
room1.Height = 19.2;
```

```
cout << " Volume of Room = " << room1.calculateArea() << endl;
```

```
cout << " Volume of Room = " << room1.calculateVolume() << endl;
```

```
}
```

Teacher's Signature _____

expt no ->

6+23

Expt. No. 3(b)

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Page No. 8

b) Write a program for checking access specifier (private and public) in C++.

#include <iostream>
using namespace std;

class complete

private:
int x,y;
public:
void setdata(int m, int n)
{
x=m;
y=n;
}

void showdata()

{
cout << x << endl;
}

int main()

{
class complete c;
c.setdata(6,7);
c.showdata();
}

22/10/2021

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Output :-

Enter book-ID : 123450

Enter Book-name is : CSC

Book-ID is : 123450

Book-name is : CSC

Expt. No. 3(c)

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Page No. 3

Ques. Write a program for checking member function inside the class.

#include <iostream.h>
using namespace std;

class Book

{

private:

int Book-ID;

char Book-name[15];

public:

void getData();

{

cout << "Enter Book-ID" << endl;

cin >> Book-ID;

cout << "Enter Book-name" << endl;

cin >> Book-name;

}

void showData();

{cout << "Book-ID is :" << Book-ID << endl;

cout << "Book-name is :" << Book-name;

}

}

int main()

{Book b;

b.getData();

b.showData();

return 0;

Teacher's Signature _____

Output -
6+7j

Expt. No. 2(d)

Date _____

Page No. 10

Ques) Write a Program of member function outside of class of class
(Using scope resolution operator).

#include <iostream>
using namespace std;

class complex

{

private:

int r, i;

public:

void setdata(int, int);

r = ?;

i = ?;

}

void showdata();

{

cout << "r=" << r << endl;

}

};

void complex :: setdata(int, int)

r = ?;

i = ?;

int main();

complex c;

c.setdata(6, 7);

c.showdata();

return 0;

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Output -

value of a is: 20
value of a is: 30

Reference - Because we use scope resolution ::

Expt. No. 3E)

Date

Page No. 11

- 3E) Write a program Using scope resolution (local Variable, global Variable)

#include <iostream>

Using namespace std;

int a = 20;

int main()

{

int a = 30;

cout << "Value of a is " << a << endl; //local variable

cout << "Value of a is " << a << endl;

? return 0;

}

Q) Write a program of array of object;

#include <iostream>

using namespace std;

class employee

{

int ID;

char name[15];

int age;

public:

void getdata();

cout << "Enter your ID" << endl; cin >> ID;

cout << "Enter your name" << endl; cin >> name;

cout << "Enter your age:" << endl; cin >> age;

void putdata()

{

cout << "ID" << ID << "*" << "Name:" << name << "\n"

<< "Age:" << age << endl;

}

3:

int main()

{

employee E[2];

for (int i = 0; i < 2; i++)

{

cout << " - Enter details of " << i + 1 << " employee

E[i].getdata();

}

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Output :-

Enter details of 1 Employee

Enter your ID : 855

Enter your Name : Armand

Enter your Age : 19

Enter details of 2 Employee

Enter your ID : 864

Enter your Name : Mohan

Enter your age : 20

- - - details of Employee - - -

ID : 855

Name : Armand

Age : 19

ID : 865

Name : Mohan

Age : 20

cout << " --- DETAILS OF Employee --- " << endl;

for (i = 0; i < 2; i++)

F(i).putdata();

return 0;

3

Output:

The value of n is : 20

The reference value is : 20

The reference value is : 20

Expt. No. 4(9)

Date _____

Page No. 14

(a) Write a Program using reference Variable Concept;

#include <iostream>

using namespace std;

int main()

{

int n = 10;

int &ref = n;

ref = 20;

cout << "The value of n is : " << endl;

cout << "The reference value is : " << ref << endl;

return 0;

e

Output :-

Before swapping using call by value $a=10$

Before swapping using call by value $b=20$

After swapping using call by value $a=10$

After swapping using call by value $b=20$

Before Swapping using call by address $a=10$

Before Swapping using Call By address $b=20$

After Swapping using call by address $a=20$

After Swapping using Call By address $b=10$

" Before

" Before

" After

" After

" reference $a=20$

" reference $b=20$

" reference $a=20$

" reference $b=10$

Expt. No. 4(b)

Date _____

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b. Write a program using Concept of call By value; call By Address, call By Reference;

#include <iostream>

using namespace std;

Void Swap -v(int, int);

Void Swap -A(int&, int&);

Void Swap -R(int&, int&);

int main() {

int a = 10, b = 20;

cout << " Before Swapping Using Call By value a = " << a << endl;

cout << " Before Swapping Using call By value b = " << b << endl;

cout << " " << endl;

Swap -v(a, b);

cout << " After Swapping Using call by value a = " << a << endl;

cout << " After Swapping Using call by value b = " << b << endl;

cout << " Before Swapping Using call by address a = " << a << endl;

cout << " Before Swapping Using call by address b = " << b << endl;

Swap -A(a, b);

cout << " After Swapping Using call By address a = " << a << endl;

cout << " After Swapping Using call By address b = " << b << endl;

cout << " Before Swapping Using call By Reference a = " << a << endl;

cout << " Before Swapping Using call By Reference b = " << b << endl;

Swap -R(a, b);

cout << " After Swapping Using call By Reference a = " << a << endl;

cout << " After Swapping Using call By Reference b = " << b << endl;

return 0;

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3.

void Swap¹(int n, int y)

{

int temp;

temp = n;

n = y;

y = temp;

3

void Swap⁻¹(int *n, int *y)

{

int temp;

temp = *n;

*n = *y;

*y = temp;

3

void Swap⁻²(int &n, int &y)

{

int temp;

temp = n;

n = y;

y = temp;

3

Output -

Value inside the new block referred by $\text{ptr} = 12$
Value inside the new block referred by $\text{ptr1} = 22.5$

Expt. No. 5(a)

Date _____

Page No. 17

Q) Write a program using concept of new and delete;

```
#include <iostream>
using namespace std;
int main()
{
    int *str;
    str = new int; // Creation of integer block dynamically
    *str = 12;
    cout << "Value inside the new block referred by ptr" << endl;
    float *ptr1;
    ptr1 = new float; // Creation of float Block
    *ptr1 = 22.5;
    cout << "Value inside the new block referred by ptr1 = " << endl;
    delete str;
    delete ptr1;
    return 0;
}
```

Teacher's Signature _____

Output -

charchi used : 0
charkti used : 0

charkti used = 0

Number of Kites used : 5
charkti used = 1

Number of Kites used : 8
charkti used = 2

Number of Kites used : 10
charkti used = 3

Expt. No. 5(b)

Date _____

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b) Write a program using static member, variable, static function.

Ans #include <iostream.h>
using namespace std;
class Kitefestival

{

private:

int kites;
static int charkti;

public:

void setkites(int k)

{

kites=k;

cout << "no of kites used: " << k << endl;

charkti = k;

}

void display(charkti){}

cout << "charkti used: " << charkti << endl;

}

static void set()

{

cout << "charkti used: " << charkti << endl;

}

3)

int Kitefestival :: charkti = 0;

int main()

{

Kitefestival :: set();

Kitefestival A,B,C;

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Expt. No. _____

A. display charkhiuse();

B. display charkhiuse();

C. display charkhiuse();

A. setkite(5);

A. display charkhiused();

B. setkite(8);

B. display charkhiuse();

C. setkite(10);

C. display charkhiuse();

return 0;

}

Output

car has 70 litre of Petrol
car has covered 0km
car has 70 litre Petrol.
Car has covered 0Km.

Expt. No. E(c)

Date _____

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d. Write a program using concept (concept) of constructor:

#include <iostream>

using namespace std;

class Car

{

private:

float petrol, distance;

public:

Car()

{

petrol = 70;

distance = 0;

,

void show();

}

void car :: show()

cout << " car has " << petrol << " litre of Petrol" << endl;

cout << " car has covered " << distance << " Km" << endl;

}

int main()

Car civic;

civic.show();

civic.show();

3

Teacher's Signature _____

Output:-

Car has 70 litre of petrol
Car has covered 0km
Car has 70 litre of petrol
Car has covered 0km
Car has 70 litre of petrol
Car has covered 0km.

Expt No. 5(e)

Date _____

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- e. Write a program using concept of constructor outside the class (using scope resolution);

#include <iostream>

using namespace std;

class car {

private:

float petrol, distance;

public:

car();

void show();

}

void car::show() {

cout << "car has " << petrol << " litre of petrol & covers "

cout << "car has covered " << distance << " km" << endl;

}

car c1; car c2;

3

petrol = 70;

distance = 0;

3

int main() {

c1.petrol = 70;

c1.distance = 0;

c1.show();

c2.show();

return 0;

3

Teacher's Signature

Output :-

car has 78 litre of petrol
car has covered 0 km.
car has cover 83 litre of petrol.

Car has covered 5 km.
car has 0 litre of petrol.
Car has covered 0 km.

Car has 78 litre of petrol
car has covered 0 km.

Expt. No. 5(P)

Date _____

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F. program using concept of single, multiple parameterized constructor and copy constructors:

#include <iostream>

using namespace std;

class car {

3

private:

float distance, petrol;

public:

car () {

petrol = 0;

distance = 0;

3

void show ():

car (float p)

3

petrol = p;

distance = 0;

3

car (float p, float d)

5

petrol = p;

distance = d;

3

car (car s)

5

petrol = s.petrol;

distance = s.distance;

3

Teacher's Signature _____

3

void Car:: show()

{

cout << "car has " << petrol << endl;

cout << " car has covered " << distance << "km" << endl;

{

int main()

{

Car hondacity(78,0), civic(8.3,5), audi, BMW(hondacity);

hondacity.show();

audi.show();

BMW.show();

return 0;

3

out put -

Car has 78 litre petrol.
Car has covered 0 km.
Car has 83 litres petrol.
Car has covered 5 km.
Car has 0.1 litre petrol.
Car has covered 0 km.
Car has 78 litre petrol.
Car has covered 0 km.
Destructor is called.
Destructor is called.
Destructor is called.
Destructor is called!

Expt. No. 5(g)

Date

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g. Write a program Using concept of destructors:

#include <iostream>
using namespace std;
(class car)

private:

float Petrol; distance;
public:

car()

{

Petrol = 0;

distance = 0;

}

void show();

car (float p);

{

Petrol = p;

distance = 0;

}

car (float p, float d)

{

Petrol = p;

distance = d;

}

car (float p, float d)

{

Petrol = p;

distance = d;

Teacher's Signature _____

Ques 1)

S

cout << " destructor is called " << endl;

3

int main()

S

(car) honda city (780), civic (83.5), audi, Bmw (Hondacity);

Hondacity. "show();"

(civic) "show();"

bmw. "show();"

"return 0;"

3

Output -

The simple INTEREST is = 268.8

Expt. No. (Slh)

Date

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h. Write a program of simple interest using constructor

#include <iostream>

using namespace std;

class interest

{

private:

float rate, time, S;

int P;

public:

interest (int P, float T, float R)

S

P = P;

time = T;

rate = R;

}

float calc()

{

float S;

S = (P * time * rate) / 100;

return S;

}

void show()

{

float S;

S = calc();

cout << "the simple interest is : " << S << endl;

}

Teacher's Signature _____

interest (interest : st)

{

p = top;

time = & time;

rate = & rate;

3

3/

int main()

{

Interest I (100, 5.6, 11.8); and (2);

I :: show();

amt :: show();

return 0;

3

Output -

The number is : 10.05

The number has 10 as its integer part

The number has 0.05 as its decimal part.

Expt. No. 5(i)

Date _____

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(1) Write a program to separate integer and decimal part from a number using constructor;

#include <iostream>

using namespace std;

class Number

{

private:

double dec, n;

int y;

public:

Number()

{

cout << "No number" << endl;

}

Number(double p)

{

h = p;

y = int(p);

dec = p - y;

}

void show()

{

cout << "The number is :" << endl;

cout << "The number has " << y << " as integer part" << endl;

cout << "The number has " << dec << " as decimal part" << endl;

}

}

Teacher's Signature _____

Expt. No. _____

int main()

{
5}

number = (10.05);

i = show;
return 0;

3

Output -

total chocolate : 5
total pastry : 10
total jelly : 15

Customer had 5 chocolate 10 pastries & 15 Jellies.

Expt No. 6(a)

Date _____

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(a) Write a program using basic concept of friend function.

#include <iostream>
using namespace std;
class homeshop;

{

private
int chocolate;
int pastry;
int jelly;

public

Homeshop() // Default constructor

{

chocolate = 0;
pastry = 0;
jelly = 0;

}

void setvalue (int c, int p, int j)

{

chocolate = c;
pastry = p;
jelly = j;

}

void show()

{

cout << "total chocolate :" << chocolate << endl;
cout << "total pastry :" << pastry << endl;

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cout << "total jelly : " << jelly << endl;

friend void get (HomeShop);

cout << "customer had " << a.chocolates << "chocolates" << a.pastries
<< " , pastries " << a.jelly << "jellies : " << endl;

3

int main()

{

homeShop insider;

insider . Setvaliu (5,10,15);

get (insider);

return 0;

}

b. Program to calculate mean value of two number
Using friend function.

#include <iostream>
using namespace std;

class num

private:

int n1, n2;

public:

num();
n1 = 0; n2 = 0;

void getData (int n1, int n2);

n1 = n1;

n2 = n2;

3;

friend float mean (num);

3;

float mean (num);

return float ((n1 + n2) / 2);

3;

int main();

num n;

n.getData (20, 30);

cout << "The mean value is " << n.mean () << endl;

return 0;

3;

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Enter name : Somter
Enter Account Number : 1234567
Enter Account Balance : 5000
Enter age : 19

Expt. No. 6(c)

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(c) Write a program of Bank Account entries using friend function;

#include <iostream>

using namespace std;

class Acc

{

private:

char name [25];

double account;

int bal;

int age;

public:

holder();

{

cout << "Enter Name" << endl;

cin >> name;

cout << "Enter Account Number" << endl;

cin >> account;

cout << "Enter Account Balance" << endl;

cin >> bal;

cout << "Enter Age" << endl;

cin >> age;

}

friend void display (acc);

3:

void display (acc)

{

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cout << "Enter the name : " << a.name << endl;
cout << "Enter account number : " << a.account << endl;
cout << "Enter account Balance : " << a.balance << endl;
cout << "Enter age : " << a.age << endl;

3

int main()

{

```
acc a;  
a.Holder();  
display(a);  
return a;
```

Output :-

Enter petrol: 45

Enter distance covered : 70

Enter petrol : 4

Enter distance covered = 70

Total petrol used : 49

Total distance covered : 148

Expt. No. 6(d)

Date _____

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- d. Write a program making use of friend function to add the entries of the class.

#include <iostream>

Using namespace std;

class car {

private:

int petrol;

int dist;

public:

(car)

{

Petrol l=0;

dis l=0;

}

void getdata()

{

cout << "Enter Petrol : " << endl;

cin >> petrol;

cout << "Enter distance Covered : " << endl;

cin >> dist;

}

friend void total(car1, car2)

3)

class car2

{

private:

int Petrol2;

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int dis2;
public:

(car1)

5

Pebot2 = 0;

dis2 = 0;

3

Void getdata()

5

cout << "Enter Pebot1 : " << endl;

cin >> Pebot1;

cout << "Enter distance covered : " << endl;

Cin >> dis1;

3

friend void total (car1, car2);

3:

Void total (car1, car2)

5

cout << "Total Pebot used : " << a.Pebot1 + b.Pebot2 << endl;

cout << "Total distance covered : " << a.dis1 + b.dist2 << endl;

3

Int main()

{

car1. Maruti;

car2. Maruti;

Maruti.getdata();

Maruti.getdata();

total (maruti, maruti);

return 0;

3

Teacher's Signature _____

Output -

Length : 10 Breadth : 20 Height : 30

Expt. No. 7(a)

Date _____

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(a) Write a program using the concept of object pointer.

#include <iostream>

using namespace std;

class box

{

private:

int l, b, h;

public:

void setdata (int, int, int);

{

l = x;

b = y;

h = z;

}

void showdata ()

{

cout << "Length : " << l << "Breadth : " << b << "Height : "

<< endl;

}

3:

int main()

{

box * p, small;

p = &small;

p-> setdata (10, 20, 30);

p-> showdata ();

return 0;

3.

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Output :-

Volume of Box = 12

Expt. No. 7(b)

Date _____

Page No. 3

b. Write a program using the concept of object class ^{and} pointer.

#include <iostream>

Using namespace std;
class box

5

private:

int l,b,h;

public:

void soldata (int l, int b, int h)

{

this->l=l;

this->b=b;

this->h=h;

}

void volume ()

{

return l*b*h;

}

}

int main ()

{ box small_box;

Small_box .soldata (2,1,1);

box * pbox;

pbox = & small_box;

cout << "volume of Box" << pbox->volume();

<< endl;

return 0;

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Output -

Hours : 4
min : 20
Second : 60

Hours : 5
min : 20
Second : 60

Total time is : ~~9:52:00~~
9:52:00

Expt No. 7(c)

Date _____

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2. Write a program of time calculator (Hrs, min, sec);

#include <iostream>

using namespace std;

class time

{

int Hrs, min, sec;
public:

void gettime();

cin >> Hrs;

cin >> min;

cin >> sec;

cout << "Time is:";

cout << Hrs;

cout << min;

cout << sec;

}

};

void addtime(time t1, time t2)

{

hrs = t1.hrs + t2.hrs;

min = t1.min + t2.min;

sec = t1.sec + t2.sec;

if (min >= 60)

hrs = hrs + min / 60;

min = min % 60;

};

second, second data;

if (sec >= 60)

min = min + sec / 60;

sec = sec % 60;

};

};

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void getoutput();

{

cout << " total time is :" << endl;

cout << H2 << ":" << min << ":" << sec << endl;

{

3:

int main()

{

time a, b, c;

a.gettime();

b.gettime();

c.addtime(a, b);

c.getoutput();

return 0;

3:

Output :-

In 1st case → As a, b, are private, so, can't access directly.

In 2nd case → Directly accessed from main.

In 3rd case → Not directly accessed i.e., error comes.

Expt. No. 8(A)

Date _____

Page No. _____

(a) Write a program to implement use public, private and protected access specifier.

#include <iostream>
using namespace std;

class A {

private:

int a, b, sum;

public:

void setdata() {

cout << "Enter value of a = " << endl;

cin >> a;

cout << "Enter value of b = " << endl;

cin >> b;

sum = a+b;

}

void showdata() {

cout << "Sum of two numbers = " << sum;

}

int main() {

A obj;

obj.setdata();

obj.showdata();

cout << obj.a << endl << obj.b << endl;

return 0;

3/4

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```
/* class B {
```

```
    public:
```

```
        int a, b, sum;
```

```
    public:
```

```
        void setdata();
```

```
        cout << "Enter value of a = " << endl;
```

```
        cin >> a;
```

```
        cout << "Enter value of b = " << endl;
```

```
        cin >> b;
```

```
        sum = a+b;
```

```
}
```

```
    void showdata();
```

```
    cout << "Sum of two numbers = " << sum << endl;
```

```
}
```

```
};
```

```
int main() {
```

```
    B obj1;
```

```
    obj1.setdata();
```

```
    obj1.showdata();
```

```
    cout << obj1.a << endl << obj1.b << endl;
```

```
} //
```

Class C {

Protected:

Public:

int a, b, sum;

void setdata() {

cout << "Enter Value of a = " << endl;

cin >> a;

cout << "Enter Value of b = " << endl;

cin >> b;

sum = a+b;

3.

void Showdata() {

cout << "Sum of two numbers = " << sum << endl;

3

3;

int main() {

C obj1;

obj1.setdata();

obj1.Showdata();

cout << obj1.a << endl << obj1.b << endl;

3.

Output :-

What's your name?

Aman

What's your age?

19

What's your gender?

Male.

Your Name is --- Aman.

Your age is --- 19

Your gender is --- male

Total faculty in CS?

10

Total courses in CS?

7

Total faculty of CS - 10

Total courses of CS - 7.

Expt. No. 8(B)

Date _____

Page No. _____

(B) Write a program to implement Concept of Single inheritance.

#include <iostream>

using namespace std;
class Student

private:

char name[20];

int age;

String gender;

public:

void SetData();

cout << "What your name? " << endl;

cin >> name;

cout << "What your age? " << endl;

cin >> age;

cout << "What's your gender? " << endl;

(in 32 gender);

void GetData();

cout << "Your name is --- " << name << endl;

cout << "Your age is --- " << age << endl;

cout << "Your gender is --- " << gender << endl;

3. class ComputerSci : public Student

private:

int total_faculty;

int total_courses;

public:

void inputData();

cout << "Total faculty of CS? " << endl;

Teacher's Signature _____

cin >> total_faculty;

cout << "total courses in cs? " << endl;

cin >> total_courses;

3
void display_data();

cout << "total faculty of cs --- " << total_faculty << endl;

cout << "total courses of cs --- " << total_courses << endl;

3

3:

int main () {

Computer_Sci cs;

cs . setdata();

cs . getdata();

cs . infodata();

cs . displaydata();

return 0;

3

Output :-

Sunroofs in ur car ??

3

gled in ur car ??

4

Tell maximum speed of yr car?

34

How many alarms are there in our car?

7

tell color of ur car 1-silver, 2-golden 3-black.

2

tell fuel type of ur car.

Petrol

maximum speed of ur car --- 34

alarms in ur car --- 5

Airbags in ur car --- 7

Color of car --- 2

Fuel of car : 0

Sunroof = 3

Gled : 4

Expt. No. 9

Date _____

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(a) Write a program to implement multiple inheritance -

#include <iostream>

using namespace std;

using namespace std;

class Car {

protected:

int color_no;

char fuel;

public:

void inputdata();

cout << "tell color of ur car 1-silver, 2-golden, 3-black";

cin >> color_no;

cout << "tell fuel type of ur car " << endl;

cin >> fuel;

};

class SportsCar

protected:

int maxspeed;

int alarms;

int airbags;

public:

void givedata();

cout << "tell maximum speed of ur car? " << endl;

cin >> maxspeed;

cout << "how many alarms are there in ur car? "

cin >> alarms;

cout << "how many airbags are there in ur car? "

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an >> carbygas;

3;

3;

class luxurycar : public car, public sportscar,
private:

int Sunroof;

int glad;

public:

void inputdata();

cout << "Sunroof in ur car ?? " << endl;

cin >> glad;

3

void displaydata();

cout << "maximum speed of ur car = " << maxspeed << endl;

cout << "A/cained in ur car = " << carbygas << endl;

cout << "color of car : " << colorno << endl;

cout << "Sunroof : " << Sunroof << endl;

cout << "glad : " << glad << endl;

3

3;

int main()

luxurycar rollroyce;

rollroyce.inputdata();

rollroyce.getdata();

rollroyce.inputdata();

rollroyce.displaydata();

return;

3

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i) Write a program to implement Hierarchical Inheritance?

#include <iostream>

using namespace std;

class Base {

private:

int a, b;

public:

void input() {

cout << "Enter value of a and b : " << endl;

cin >> a >> b;

void show()

{

cout << "Sum = " << a + b << endl;

}

}

class derived1 : public Base {

private:

int m;

public:

void input() {

cout << "Enter value of m : " << endl;

cin >> m;

} void show() {

cout << "m = " << m << endl;

}

};

class derived2 : public Base {

protected:

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int n;

public:

void input2() {

cout << "Enter value of n: " << endl;

cin >> n;

}

void show2() {

cout << "n = " << n << endl;

}

3)

int main() {

Derived o1;

Derived o2;

// o1 - input();

// o1 - input();

// o1 - show();

1

o2 - input2();

o2 - show2();

definition;

3

Output :-

I am a child.

I am Parent.

Expt. No. 10

Date _____

Page No. _____

(A) Write a program to implement private inheritance?
#include <iostream.h>

Using name space std:
class parent {

// private : display () ;

cout << "I am parent" << endl;

}

class child : private parent {

public :

void show () {

cout << "I am a child" << endl;

display ();

}

int main () {

child obj;

// obj.display ();

obj.show();

return 0;

}

Output :-

----- Method Overloading -----

1. Area of circle

2. Area of rectangle

3. Area of triangle

which one you want to evaluate ??

3

4

Area of rectangle: 12.

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Q. Write a program to implement function overloading to calculate area.

A. #include <iostream>

using namespace std;

#define PI 3.14

class fun {

public:

void area (int); // Area of circle

void area (int, int); // Rectangle

void area (float, int, int); // Triangle

3,

void fun::area (int a) {

cout << "Area of Circle : " << PI * a * a << endl;

3.

void fun::area (int b, int c) {

cout << "Area of rectangle : " << b * c << endl;

3,

void fun::area (float t, int a, int b) {

cout << "Area of triangle : " << t * a * b / 2 << endl;

3,

int main () {

int choice, r, d, b;

fun obj;

cout << "- Method Overloading --- " << endl;

cout << "1. Area of Circle " << endl;

cout << "2. Area of rectangle " << endl;

cout << "3. Area of triangle " << endl;

cout << "Which one you want to evaluate ?? " << endl;

cin >> choice;

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Switch (choice) {

Case 1:

```
cout << "Enter radius of circle ?" << endl;
cin >> r;
obj. area(r);
Break;
```

Case 2:

```
cout << "Enter sides of rectangle ?" << endl;
cin >> l >> b;
obj. area(l, b);
break;
```

Case 3:

```
cout << "Enter sides of triangle ?" << endl;
cin >> d1 >> d2 >> b;
obj. area(1/2, d1, b);
break;
```

Case 4:

```
cout << "EXIT" << endl;
break;
```

default:

```
cout << "Enter valid choice !" << endl;
```

3

return;

3

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Output -

I am from Base class.

Expt. No. 11(A)

Date _____

Page No. _____

(A) write the program of method overriding concept

#include <iostream>

using namespace std;

class A {

public:

void fun1();

cout << "I am from parent" << endl;

}

class A : public A {

public:

void fun2();

cout << "I am from base class" << endl;

}

int main() {

b. obj;

obj.fun1();

return 0;

}

Output -

3

Expt. No. 11(B)

Date _____

Page No. _____

(a) Write a program for method Hiding concept.

#include <iostream>

using namespace std;

class A {

public:

void fun() {

cout << "I am from parent" << endl;

3;

class B : public A {

public:

void fun(int a) {

cout << a << endl;

3;

int main() {

public: B obj;

void function(); obj.fun(3);

//obj.fun(); //error

return 0;

3

Output :-

$$a = -3, b = -4$$

Expt. No. 12 (B)

Date _____

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(B) Writing program to implement the unary operator overloading?

#include <iostream>

Using namespace std;
class Complex {

private:

int a, b;

public:

void Setdata(int a, int b) {

a = a;

b = b;

}

void Showdata() {

cout << "a = " << a << endl;

}

Complex operator +(Complex);

Complex Temp;

Temp.a = -a;

Temp.b = -b;

return Temp;

,

,

int main() {

Complex C1, C2;

C1.Setdata(3, 4);

C2 = -C1;

C2.Showdata();

,

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output

$a=8 \quad b=10$

Expt. No. 12 (B)

Date _____

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B) Write a program to implement Binary operator
overloading → addition

#include <iostream>

using namespace std;

class Complex {

private:

int a, b;

public:

void setdata (int x, int y) {

$x = x;$

$y = y;$

3
void showdata () {

cout << "a = " << a << "b = " << b << endl;

3

complex add (complex z) {

complex temp;

temp.a = a + z.a;

temp.b = b + z.b;

return temp;

3

};

int main () {

complex c1, c2, c3;

c1.setdata (3, 4);

c2.setdata (5, 6);

c3 = c1.add (c2);

c3.showdata ();

3
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Output -

100

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(c) To implement class template.

#include <iostream.h>

using namespace std;

template <class T>

class my pair {

private:

 T a, b;

public:

 my pair (T first, T second) :

 a = first;

 b = second;

}

,

template <class T>

 T my pair <T> :: get max ()

 T results

 results = a > b ? a : b;

 return results;

,

int main () {

 my pair <int> my object (100, 75);

 cout << my object :: get max () ;

 return 0;

,

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Output = HELLO

Expt. No. 13 (A)

Date _____

Page No. _____

(A) To implement file Handling operations using of stream objects

```
#include <iostream.h>
#include <iostream>
using namespace std;
int main()
{
    ofstream fout;
    fout.open("xyz.data");
    fout << "HELLO";
    fout.close();
}
```

Output →

Hello.

(B) output :- HELLO

(C) output :-

17 :: a = 0

Expt. No.	13	Date _____	Page No. _____
(B) file handling operator using ifstream #include <iostream.h> #include <iostream> int main() { ifstream::fout; ifstream::fin; fin.open("file handling.dat"); char c; fin>>c; while (!fin.eof()) { cout << c; fin>>c; } fout.close(); }	(C) to implement friend class concept #include <iostream> using namespace std; class A { private: int a; public: A(); a = 0; }; friend class B; class B { private: int b; public: void showA (A& a) { cout << "17 :: a = " << a; } }; int main() { A a; B b; b.showA(a); return 0; }		Teacher's Signature _____

Output -

21 constructor
y constructor

Expt. No. 13 (P)

Date _____

Page No. _____

(5) To implement private constructor.

#include <iostream>

using namespace std;

class n {

private:

n();

};

friend class y;

};

class y {

public:

y();

n obj;

cout << "n constructor" << endl;

};

int main() {

y obj;

return 0;

}

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InputOutput2
Hi 'today' is monday.Exception is there so process it with
other value.

Expt. No. _____ Date _____

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(F) (1) Exception - 1

```
#include <iostream>
using namespace std;
```

```
int main() {
```

```
    int i;
```

```
    cin >> i;
```

```
    cout << "Hi " << i << " is " << "monday" << endl;
```

```
    log5
```

```
    if (i == 1)
```

```
        throw "xyz";
```

```
    if (i == 3)
```

```
        throw "abc";
```

```
    }
```

```
catch (...) {
```

```
    cout << "Exception is there so process it with other value"
```

```
}
```

```
return 0;
```

```
}
```

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