



Student ID:

Student Name:

Part A (5 marks):

Put your answers in the following table:

Question	Q1	Q2	Q3	Q4	Q5
Answer	d	b	c	a	d

Q1. Which of the following is correct constructor?

- a. class name and constructor name is same b. Constructor does not return value
c. constructor has return type d. both a & b are correct

Q2. Which is used to define the member of a class extremally?

- a. : b. :: c. # d. none of the mentioned

Q3. What does your class can hold ?

- a. data b. functions c. both a & b d. none of the mentioned

Q4. Which of the following is a valid class declaration?

- a. class A {public: int x}; b. class B{} c. Public class A{}
d. Object A {int x};

Q5. Which of the following two entities (reading from left to right) can be connected by the dot operator?

- a. a class member and a class object b. a class object and a class
c. a class and a member of the class d. a class object and a member of that class

Part B (15 marks):

Find the output of these following programs.

<pre>#include <iostream> using namespace std; struct MyBox { int length, breadth, height; }; void dimension (MyBox M) { cout << M.length << "x" << M.breadth << "x"; cout << M.height << endl; } int main () { MyBox B1 = {10, 15, 5}, B2, B3; ++B1.height; dimension(B1); B3 = B1; ++B3.length; B3.breadth++; dimension(B3); B2 = B3; B2.height += 5; B2.length--; dimension(B2); return 0; }</pre>	<pre>#include<iostream> using namespace std; class Alpha { int x,y; public: Alpha();//constructor Alpha(int,int);//constructor with arguments void show() { cout<<"First value "<<x; cout<<"\n Second value "<<y<<endl; } }; Alpha::Alpha() { x=0; y=0; } Alpha::Alpha(int a, int b) { x=a-b; y=a+b; } int main() { Alpha obj1; Alpha obj2(1,2); obj1.show(); obj2.show(); return 0;} }</pre>
<p>Output: (5 marks)</p> <pre>10x15x6 11x16x6 10x16x11</pre>	<p>Output: (3 marks)</p> <pre>First value 0 Second value 0 First value -1 Second value 3</pre>

<pre>#include <iostream> #include <string> using namespace std; int whatIsThis(const int b[], int p); int main() { int x; int a[10] = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 }; x = whatIsThis(a, 10); cout<< "Result is "<< x; return 0; } int whatIsThis(const int b[], int p) { if (p == 1) return b[0]; else return b[p - 1] + whatIsThis(b, p - 1); }</pre>	<pre>#include <iostream> using namespace std; int main() { int A[]={10,12,15,17,20,30}; for(int i=0;i<6;i++) { if(A[i]%2==0) A[i]/=2; else if(A[i]%3==0) A[i]/=3; if(A[i]%5==0) A[i]/=5; } for(int i=0;i<6;i++) cout<<A[i]<<"#"; return 0; }</pre>
<p>Output: (4 marks)</p> <p>Result is 55</p>	<p>Output : (3 marks)</p> <p>1#6#1#17#2#3#</p>

Part C (20 marks):

Question 1: (8 marks)

C++ Program to Print the Number of Odd & Even Numbers in an Array:

1. Create an array, take its size from users and define its elements using a loop.
2. Take an iterator in a for loop, using which, all the elements of the array are accessed.
3. Iterator is used to reach out every position of the array, scanning the particular array element and checking whether it is divisible by 2 or not, thus sorting even and odd numbers and printing them.

Sample Run:

Enter the size of an array: 6

Enter the elements of the array

```
array[1]= 15
array[2]= 14
array[3]= 12
array[4]= 24
array[5]= 53
array[6]= 47
```

```
Even numbers in the array are: 14 12 24
Odd numbers in the array are: 15 53 47
```

<pre>#include <iostream> using namespace std; int main() { int size; cout<<"Enter the size of an array: "; cin>>size; int array[size]; cout<<"Enter the elements of the array \n"; for (int i = 0; i < size; i++) { cout<<"array["<<i+1<<"]=" "; cin>>array[i]; } cout<<"Even numbers in the array are: "; for (int i = 0; i < size; i++) { if (array[i] % 2 == 0) cout<<"\t"<< array[i]; } }</pre>	<pre>cout<<"\n Odd numbers in the array are:"; for (int i = 0; i < size; i++) { if (array[i] % 2 != 0) { cout<<"\t"<<array[i]; } } return 0; }</pre>
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Question 2: (12 marks)

Write a C++ program to create a **class bank** with members: *account, balance, cash, withdraw and name* and for methods: *input, display, input1 and credit*. Also **create an object** and call the methods *display*.

Sample Run:

```
Enter Depositor Name: Mohamed
Enter Account Number: 123456789
Enter Depositor amount: 3000
```

```
Bank Account Statement:
Depositor Name: Mohamed
Account Number: 123456789
Balance: 3000 SR
How many operations you do on your account? 2
```

```
Press 1 for depositing money
Press 2 for withdrawing money:
```

```
1
Enter deposit amount: 1500
```

```
Bank Account Statement:
Depositor Name: Mohamed
Account Number: 123456789
Balance: 4500 SR
Press 1 for depositing money
Press 2 for withdrawing money:
```

```
2
Enter withdrawn amount: 400
```

```
Bank Account Statement:
Depositor Name: Mohamed
Account Number: 123456789
Balance: 4100 SR
See you soon!
```

<pre> #include <iostream> #include <string> using namespace std; class bank { private: int acc, bal, cash, withdraw; string name; public: void input(); void display(); void input1(); void credit(); }; void bank::input() { cout<<"Enter Depositor Name: "; cin>>name; cout<<"Enter Account Number: "; cin>>acc; cout<<"Enter Depositor amount: "; cin>>bal; } void bank::display() { cout<<"\n \t\t Bank Account Statement: "; cout<<"\n Depositor Name: \t"<<name; cout<<"\n Account Number: \t"<<acc; cout<<"\n Balance:\t \t "<<bal<<" SR"; } void bank::input1() { cout<<"Enter deposit amount: "; cin>>cash; bal=bal+cash; } void bank::credit() { cout<<"Enter withdrawn amount: "; cin>>withdraw; bal=bal-withdraw; } </pre>	<pre> int main() { int i,n,ch; bank obj; obj.input(); obj.display(); cout<<"\n How many operations you do on your account? "; cin>>n; for(i=1; i<=n; i++) { cout<<"\n Press 1 for depositing money \n Press 2 for withdrawing money: \n"; cin>>ch; switch(ch) { case 1: obj.input1(); obj.display(); break; case 2: obj.credit(); obj.display(); break; default: cout<<"\nYou enter a wrong number!"; } } cout<<"\nSee you soon!" ; return 0; } </pre>
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