**MCQ SECTION**

Q1.Predict the output(SCORE-2)

#include<iostream>

using namespace std;

class B1

{

public:

B1()

{

cout<<"\n In class class B1 constructor";

}  
virtual ~B1()  
{  
cout<<"\n In B1 destructor";      
}

};

class D:public B1

{

public:

D()

{

cout<<"\n In derived class D's constructor";

}  
~D()

{

cout<<"\n In derived class  D's Destructor";

}

};

int main()

{

B1 \*p=new D();  
delete p;  
return 0;

}

**a)In class class B1 constructor**

**In derived class D's constructor**

**In derived class D's Destructor**

**In B1 destructor**

b)In class class B1 constructor

In derived class D's constructor

In B1 destructor

c)prints nothing

d)none of the above

Q2. How will you assign value ‘5’ to the variable ‘x’ inside a member function using this pointer? (SCORE-1)

1. **this->x=5;**

b) this.x=5;

c) x=5;

d) None of the above

Q3.

What is the problem with this code:((SCORE-1)

#include<stdio.h>

int main()

{

    int \*p = new int;

    p = NULL;

    delete p;

}

1. Compiler Error: delete can't be applied on NULL pointer.
2. **Memory leak**
3. Dangling pointer.
4. The program may crash as delete is called for NULL pointer

Q4.C++ supports run time polymorphism with the help of virtual functions, which is called …………….. binding.((SCORE-1)

**A.dynamic binding/late binding**

B.early binding/static binding

C.compile time binding

D.none

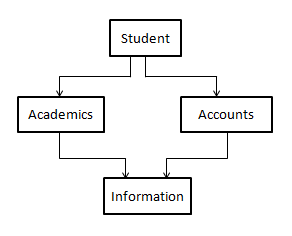
**CODING SECTION**

*PROBLEM STATEMENT\_1(5-marks)*

Create a class ‘student’ with two data-members name and roll\_no .Two classes ‘Academics’ and ‘Accounts’ inherits from class student. Academics class has two data-members marks and grade.  Use its member function to initialize student class data members as well as marks data member of academic class. Display the grade based on the marks secured, in the following way:

* if marks>=90,grade ='A'
* if marks greater than and equal to 75 and less than 90 , grade='B'
* if marks greater than and equal to 60 and less than 75 , grade='C'
* if marks greater than and equal to 45 and less than 60, grade='D'
* else grade='F'

Accounts class has two data-members fees paid and dues. Another class ‘Information’ inherits from class ‘Academics’ and ‘Accounts’ which contain member function to display roll\_no , name, marks, grade, fees and dues of the student.



**Sample Input Test Case 1:**

123 // Roll No

Rahul // Name

75 // Marks

20000// Fees

500 // Dues

**Sample Output Test Case 1:**

123 // Roll No

Rahul // Name

75 // Marks

B // Grade

20000// Fees

500 // Dues

**Explanation:**

**Sample Input:**

First line denotes Roll No of student.

Second line denotes Nameof student.

Third line denotes Marks of student.

Fourth line denotes Grade of student.

Fifth line denotes Fees of student.

Sixth line denotes Dues of student.

**Sample Output:**

Display the Roll no, Name, Marks, Grade, Fees and dues of student.

**<Stub>**

**Head:**

|  |
| --- |
| #include <iostream>  using namespace std;  class student  {  public:  int rollno;  char \*name;  }; |

**Tail:**

|  |
| --- |
| int main()  {  Information i;  i.get();  i.account();  i.info();  return 0;  } |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Testcase0**  **(score-0)**  **(sample)**  **Input**  123  Ayushi  25  50000  200  **Output**  123  Ayushi  25  F  50000  200 | **Testcase1**  **(score-1)**  **Input**  124  Armaan  40  15500  256  **Output**  124  Armaan  40  F  15500  256 | **Testcase2**  **(score-1)**  **Input**  125  Ashish  75  28000  456  **Output**  125  Ashish  75  B  28000  456 | **Testcase3**  **(score-1)**  **Input**  126  Vikram  90  42500  258  **Output**  126  Vikram  90  A  42500  258 | **Testcase4**  **(score-1)**  **Input**  127  Simran  80  10000  236  **Output**  127  Simran  80  B  10000  236 | **Testcase5**  **(score-1)**  **Input**  128  Shrishti  66  12580  256  **Output**  128  Shrishti  66  C  12580  256 |

*PROBLEM STATEMENT\_2(10-marks)*

Lets us consider a situation where a bank administration wants to terminate an employee based on following condition:

a)If employee is a marketing executive whose job is to open accounts then his monthly target should not be less than 20 accounts.

b)If employee is a manager then his monthly target for maintaining funds should not be less than 10 lakh rupees.

Create employee as base class and marketing executive,manager as derived classes.

Choice 1 for marketing executive,2 for manager

**Sample input 1**

1 //choice for input

Parag //name

30 //number of accounts opened

**Sample output 1**

Employee Name=Parag

Employee is a good performer

**Sample input 2**

1 //choice for input

Pragya //name of employee

13 //number of accounts opened

**Sample output 2**

Employee Name=Pragya

Employee should be terminated

**Sample input 3**

3 //choice for input

**Sample output 3**

invalid choice

**Head**

|  |
| --- |
| **#include<iostream>**  **using namespace std;**  **class employee**  **{**  **char emp\_name[20];**  **public:**  **void read\_emp\_name()**  **{**  **// cout<<"Enter name of employee";**  **cin.ignore();**  **cin.getline(emp\_name,20);**    **}**  **void show()**  **{**  **cout<<"Employee Name="<<emp\_name<<endl;**  **}**  **virtual void input()=0;**  **virtual int isunderperformer()=0;**  **};** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Testcases | T1**(score-2)** | T2**(score-3)** | T3**(score-3)** | T4**(score-2)** |
| Sample input | 1  Amit  40 | 1  Sunita manchanda  15 | 2  Arushi walia  2000000 | 3 |
| Sample output | Employee Name=Amit  Employee is a good performer | Employee Name=Sunita Manchanda  Employee should be terminated | Employee Name=Arushi walia  Employee is a good performer | invalid choice |