SRM INSTITUTE OF SCIENCE &TECHNOLOGY,
RAMAPURAM CAMPUS,
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
CONTINUOUS LEARNING ASSESSMENT-1
18CSC202J– Object Oriented Design and Programming

ANSWER KEY SET-B

Part-A (5*1=5 Marks)

1. **Instance of which type of class can't be created?**
   a) Anonymous class
   b) Nested class
   c) Parent class
   d) Abstract class

   Answer: d

2. **What is the output of following code?**

```
int n=10;                    // global
class A()
{
        private : int n;
        public : int m;
        A()
        {
                n=100; m=50;
        }
void disp()
{
        cout<<"n"<<m<<n;
};
```

a) 1050100
b) 1005010
c) n5010
d) n50100

Answer: d

3. **Which member can be considered most secure in the code below?**

```
class A()
{
int a;
private : int b;
protected : int c;
public : int d;
};
```

a) a
b) b
c) c
d) d

Answer: a,b, both a and b

4. Choose the valid class declaration

class A { int x; };

class B { }

public class A { }

object A { int x; };

Answer a

5. _____ diagram in UML shows a complete modelled system at a specific time.

a) Object

b) Class
c).Sequence
d) Collaboration
Answer : a

Part – B (2 X 4 = 8 Marks)

Answer any 2 Questions

6. Describe the benefits and features of object oriented programming.

Benefits:
Maintainable
Reusable
Scalable
Sharing code
Causes less breakage
Features:
Procedure Oriented programming just deals with functional parts of the problem. Programmers need to identify what actions must be taken to solve the problem, step wise step. In other words, the whole focus is on function/procedures.

The Object Oriented Programming approach works on the objects which are data. Which is much closer to real world problems.

Object Oriented Programming

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In object-oriented model, a problem is viewed in terms of the following concepts:

Objects
Classes
Data abstraction
Data encapsulation
Inheritance
Polymorphism
Dynamic binding
Message communication

7. When inline functions are used? Justify with an example
The inline functions are a C++ enhancement feature to increase the execution time of a program. Functions can be instructed to the compiler to make them inline so that the compiler can replace those function definitions wherever those are being called. Compiler replaces the definition of inline functions at compile time instead of referring to function definition at runtime.
NOTE- This is just a suggestion to the compiler to make the function inline, if the function is big (in terms of executable instruction etc) then, the compiler can ignore the "inline" request and treat the function as a normal function.

How to make function inline:
To make any function as inline, start its definitions with the keyword "inline".

Example –
```
Class A
{
 Public:
```

```
}

Class A
{
 Public:
   int add(int a, int b);
 };

 inline int A::add(int a, int b)
 {
   return (a + b);
 }
```

8. Difference between constructor and destructor with suitable example.

S.NO	Constructor	Destructor
1.	Constructor helps to initialize the object of a class.	Whereas a destructor is used to destroy the instances.
2.	It is declared as **Classname(arguments if any){Constructor's Body }**.	Whereas it is declared as **~ ClassName(no arguments){ }**.
3.	Constructor can either accept an argument or not.	While it can't have any arguments.
4.	A constructor is called when an instance or object of a class is created.	It is called while an object of the class is freed or deleted.
5.	Constructor is used to allocate the memory to an instance or object.	While it is used to deallocate the memory of an object of a class.
6.	Constructor can be overloaded.	While it can't be overloaded.

Part – C (1 X 12 = 12 marks)

9. a. Create the class Student and make use of the functions read(), sum(), and print(). To find the sum and average of 5 subjects.

```
#include <iostream>
using namespace std;
class Student
{
public:
        int Read(int a, int b, int c, int d, int e);
        int Sum(void);
   void Print(int S);
private:
         int a,b,c,d,e;
         int Sum;
         float Average;
};
int Student::Read(int aa, int bb, int cc, int dd, int ee)
{
   a=aa;
   b=bb;
   c=cc;
   d=dd;
   e=ee;
}
int Student::Sum(void)
{
        Sum=a+b+c+d+e;
```

```
    c=ee;
}
int Student::Sum(void)
{
        Sum=a+b+c+d+e;
        return Sum;
}
void Student::Print(int S)
{
  Sum=S;
  Average=S/5;
  cout<<"The average is"<<Average;
}
int main()
{
        Student a;
        a.Read(98,98,98,98,58);
        cout << "Value of a is: " << a.Sum();
        a.Print(S);
        return 0;
}
```

b.What is UML and the importance **L? Draw the Use case and Class diagrams for th ine examination System.**

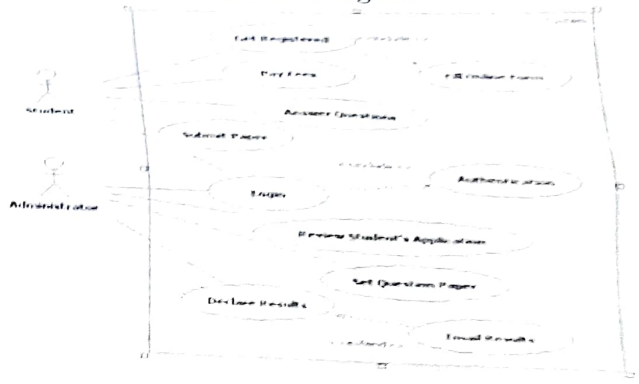
UML:

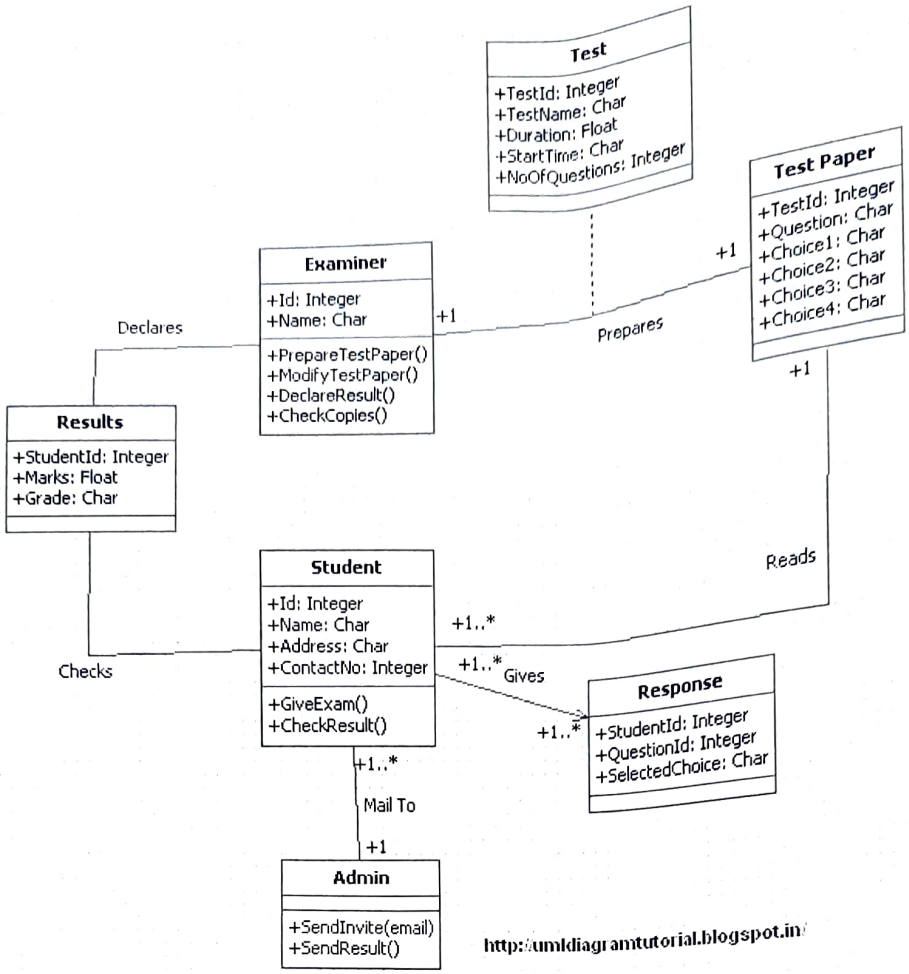
The goal of UML is to provide a sta notation that can be used by all object-oriented methods select and integrate the best elements of precursor n s. UML has been designed for a broad range of appli Hence, it provides constructs for a broad range of sy and activities (e.g., distributed systems, system and deployment).

Importance of UML:

Permits you to specify the structure or behavior of a system. Helps you visualize a system.Provides template that guides you in constructing a system.Helps to understand complex system part by part.Document the decisions that you have made.

Use case diagram





Class diagram

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Hod/CSE