

Roll No.....

CSE202: Object Oriented Programming

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

Q.1A Attempt all questions (10 questions @ 1 mark)

10

- i. Which of the following Paradigm is followed by Object Oriented Language Design?
(a) Process-Oriented Model
(b) Data Controlling access to code.
(c) Both a and b
(d) None of the mentioned
- ii. If an array is declared as `int arr[50]`, how many elements can it holds?
(a) 49 (b) 50 (c) 51 (d) 0
- iii. Which type of statement helps to jump from one part of the program to another depending on whether a particular condition is satisfied or not?
(a) Conditional branching (b) Loops (c) Iterative (d) None of these
- iv. `*(&num)` is equivalent to writing
(a) `&num` (b) `*num` (c) `num` (d) none of these
- v. Data structure that can store related information of different data types together is called
(a) Array (b) String (c) Structure (d) All of these
- vi. Where should you initialize a static data member?
(a) In `main()`
(b) Inside class
(c) In member function
(d) After class definition
- vii. To have a pointer to class member you must declare it in which section?



- (a) Public (b) Private (c) Protected (d) Any of these
- viii. Which members of a class can friend functions access?
(a) Public (b) Private (c) Protected (d) Any of these
- ix. In private inheritance, public members of the base class become _____ members of the derived class.
(a) Public (b) Private (c) Protected (d) None of these
- x. What happens when a class with parameterized constructors and having no default constructor is used in a program and we create an object that needs a zero-argument constructor?
(a) Compile-time error (b) Preprocessing error (c) Runtime error (d) none of the mentioned

Q.2 Short answer type questions (4 questions @ 2.5 marks)

10

- i. What is Object-Oriented Programming Paradigms? List a few areas of application of OOP technology.
- ii. What happens when a protected member is inherited in private mode and public mode?
- iii. What are the difference between structure and class?
- iv. What is the output of this program?

```
#include<iostream.h>
#include<conio.h>
class base
{
    public:
    virtual void show()
    {
        cout<<"\n Base class show:";
    }
    void display()
    {
        cout<<"\n Base class display:" ;
    }
};

class drive: public base
{
    public:
    void display()
    {
        cout<<"\n Drive class display:";
    }
    void show()
```

```

    {
        cout<<"\n Drive class show:";
    }
};

void main()
{
    clrscr();
    base obj1;
    base *p;
    cout<<"\n\t P points to base:\n" ;

    p=&obj1;
    p->display();
    p->show();

    cout<<"\n\n\t P points to drive:\n";
    drive obj2;
    p=&obj2;
    p->display();
    p->show();
    getch();
}

```



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|------|--|----|
| Q.3A | What is data hiding? What are the different mechanism for protecting data from the external users of a class's objects? | 05 |
| Q.3B | When will you make a function inline? Why? Write an inline function for finding the largest from three numbers. | 05 |
| Q.4A | When do we need to use default arguments in a function? Write a program to find simple interest where rate is default argument in function. | 05 |
| Q.4B | Write short note on static member function. Write a program to illustrate the use of the static member functions, in checking the number of objects created for a class. | 05 |
| Q.5A | How objects of the class can be define using array? WAP to enter the records of required number of employees and display the records using array declaration of class's objects. | 05 |
| Q.5B | What is the use of pointers with classes? WAP to enter the data of a student and display it using indirection operator and structure operator. | 05 |

Q.6A What is operator overloading? List the operators that can not be overloaded. 05
WAP to demonstrate the operation of arithmetic assignment (+=) operator overloading function.

Q.6B What is the role of virtual functions in late binding of the program? WAP to 05
enter information of a student and display it by using the late binding technique.

OR

Q.6B What is function overloading? WAP to calculate and display the sum of given 05
integers, float and double numbers using function overloading technique.
(passing more than one arguments to the functions)

Q.7A Explain the keywords: try, catch and throw used for exception handling. WAP 10
to illustrate integer type of execution and a corresponding catch statement having integer type as argument

OR

Q.7A What are friend functions? How a common friend function to two different 10
classes can be declared? Write a program to find the sum of two entered complex numbers from two different classes and display the sum using a common friend function to two classes

Q.8A Define the basic concepts of object oriented programming: 10

- a. Object 1
- b. Class 1
- c. Abstraction 1
- d. Encapsulation 1
- e. Polymorphism 2
- f. Inheritance 2
- g. Dynamic binding 1
- h. Message Passing 1

Q.9A What are constructors and destructors? What are the characteristics of a 10
constructor? WAP to illustrate the copy constructor for the object of class account containing customer_name, acct_number, and balance as data members.

Q.9B Define a class to represent a book in a library includes the following members: 10

Data Members:

Book Number; Book Name; Author; Publisher; Price;
No. Of copies; No of copies issued.

Member functions:

- To assign initial values
- to issue a book after checking for its availability.
- To return a book.
- To display book information.

OR

Q.9B What are the differences between inheriting a class with public and private visibility mode? Write a program is to create a hybrid class called DC2, from the multilevel inheritance taking the path from the base class BC1 and its derived class DC1. And the hybrid class DC2 also inherits some of the features of another base class BC2. 10

