

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Backlog), May 2019

B. Tech. (Civil Engineering),

Semester I/II

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

10

- i. A normal C++ operator that acts in special ways on nearly defined data types is said to be

(a) encapsulation (b) classfield (c) overloading (d) polymorphism

- ii. #include<iostream.h>

```
void main()
```

```
{
```

```
int a=2,b=3;
```

```
if(0)
```

```
cout<<a;
```

```
else
```

```
cout<<b;
```

```
}
```

(a) 2 (b) 3 (c) both (a) and (b) (d) Nothing.

- iii. Which of the following approach help us understand better about Real time examples, say Vehicle or Employee of an Organization?

(a) Procedural approach (b) Object Oriented approach (c) Both a and b (d)

None of the mentioned

- iv. Which of the following concepts is used to implement late binding?

(a) Virtual function (b) Operator function (c) Const function (d) Static function

- v. Which one of the following options is correct?

(a) Friend function can access public data members of the class

(b) Friend function can access private data members of the class

(c) Friend function can access protected data members of the class

(d) All of the above

- vi. Which of the following is/are advantage of using object oriented programming?

(a) Code Reusability

(b) Can create more than one instance of a class without interference

- (c) Platform independent
(d) All of the mentioned
- vii. A constructor having a reference to an instance of its own class as an argument is known as
(a) parameterized constructor (b) default constructor (c) copy constructor (d) none of these
- viii. Static member variable is initialized to _____ when the first object of its class is created.
(a) 0 (b) 1 (c) garbage (d) -1.
- ix. Which of the following is an abstract data type?
(a) int (b) double (c) string (d) class
- x. A virtual base class is used when:
(a) different functions in a base and derived class have the same name
(b) the base class has a virtual function that needs to be overridden in the derived class
(c) the identification of a function in a base class is ambiguous due to multiple inheritance.
(d) a base class is used with no body.
- Q.2 Short answer type questions (4 questions @ 2.5 marks) 10
- What is C++?
 - What is Object-Oriented Programming Paradigms? What are the differences between Object Oriented Programming and Procedural Oriented Programming?
 - What is data hiding? What are the different mechanism for protecting data from the external users of a class's objects?
 - What are the differences between Structure and Class.?
- Q.3A What are subscripts in array? How are they written? WAP to read n numbers (n defined by programmer), store them in a one dimensional array and to display the contents of that array on the screen. 05
- Q.3B Write a program for adding of vector (which is object of the class vector) elements. Use dynamic data members instead of arrays for storing vector elements. 05
- Q.4A When do we need to use default arguments in a function? WAP to compute tax. A tax compute function takes two arguments: amount and tax percentage. The default tax percentage is 15% of the income. 05
- Q.4B What is the use of pointers with classes? Discuss two methods with example by which class members can be accessed using pointers. 05
- Q.5A WAP to calculate biggest of two numbers entered through constructor and then use destructor at end of program. 05

Q.5B	WAP to enter and display the student data using single inheritance technique.	05
Q.6A	What is operator overloading? WAP to demonstrate the operation of arithmetic (-) operator overloading function.	05
Q.6B	What is function overloading? Write a program to compute the volume of a cube, cylinder and rectangular box by overloaded the volume () function three times.	05
OR		
Q.6B	What are friend functions? How are they defined? WAP to find biggest from three numbers using friend function.	05
Q.7A	Give a detailed description of the concepts of exception handling with specific reference to the concepts of throwing an exception, exception specification etc. Write a program using a try block to detect and throw an exception if the conditions "divide-by-zero" occurs.	10
OR		
Q.7A	What does polymorphism mean in C++ language? Distinguish between early binding and late binding. WAP to demonstrate the concept of polymorphism applied to the member functions.	10
Q.8A	Define the basic concepts of object oriented programming:	10
	a. Object	1
	b. Class	1
	c. Abstraction	2
	d. Encapsulation	1
	e. Polymorphism	2
	f. Inheritance and its types	1
	g. Dynamic binding	1
	h. Message Passing	1

Q.9A 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.

Q.9B What is a constructor? Whether constructors could be overload? Justify your answer through an example. Write a program to simulate saving account processing in a bank using constructors and also use destructor at the end of the program. 10

OR

Q.9B What is virtual function? What is early binding and late binding and why is late binding preferred? 10
WAP to enter information of a student and display it by using the late binding technique.