

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular/Backlog), November 2017

B. Tech. in Computer Science Engg.(CSE), (CSE-RedHat), (CSE-MBA)/Electrical
Engg.(EE)/Electronics and Communication Engg.(ECE), (ECE-RedHat)
Semester I

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 Objective type multiple choice questions (10 questions @ 1 mark)

10

i. Which of the following accesses the seventh element stored in array?

- (a) array[6];
- (b) array[7];
- (c) array(7);
- (d) array;

ii. The data elements in structure are also known as what?

- (a) objects
- (b) members
- (c) datas
- (d) none of the mentioned

iii. What is the output of this program?

```
#include <iostream.h>
int main()
{
    int n = 15;
    for ( ; ; )
        cout << n;
    return 0;
}
```

- (a) error
- (b) 15
- (c) infinite times of printing n
- (d) none of the mentioned

- iv. Modularity is the benefit of _____ characteristic of OOP.
 - (a) Polymorphism
 - (b) Encapsulation
 - (c) Inheritance
 - (d) All of the above
- v. In OOP languages, all of the processing and functionality has been moved to
 - (a) the objects
 - (b) the class
 - (c) class members
 - (d) all of the above
- vi. Object is
 - (a) collection of classes
 - (b) collection of members
 - (c) instance of class
 - (d) similar to classes
- vii. Static member functions _____.
 - (a) can be used without an instantiation of an object
 - (b) can only access static data
 - (c) A and B
 - (d) Neither A nor B
- viii. Inheritance is useful for producing a software, which is
 - (a) instantaneous
 - (b) unpredictable
 - (c) reusable
 - (d) none of these
- ix. Polymorphism means
 - (a) one class, multiple methods
 - (b) multiple classes, multiple methods
 - (c) one interface, multiple methods
 - (d) multiple interfaces, multiple methods
- x. Virtual functions _____.
 - (a) Must be friend of the base class
 - (b) Must be static member of the base class which must be defined
 - (c) Must be non-static member of the base class which must be defined
 - (d) Must be static member of the base class which need not be defined

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

10

- i. What is the output of this program?

```
#include <iostream.h>
void fun(int x, int y)
{
    x = 20;
    y = 10;
}
int main()
{
```

```

int x = 10;
fun(x, x);
cout << x;
return 0;
}

```

ii. What is the output of this program?

```

#include <iostream.h>
int main ()
{

int n;

for (n = 5; n > 0; n--)

{

cout << n;

if (n == 3)

break;

}

return 0;

}

```

iii. Describe inline function in C++ with example.

iv. Define Object-oriented programming. Give any five applications of OOP.

Q.3A	Write a program illustrates the use of the static member functions in checking the number of objects created for a class.	05
Q.3B	Write a program to create student class, read and print N student's details.	05
Q.4A	Write a program to display information about faculties. Allocate memory for the objects dynamically.	05
Q.4B	Write a program to add two complex number using the concept of passing and returning objects in member function.	05
Q.5A	What is function overloading? How is it a desirable feature of C++? Write a program to calculate and display the sum of given integers, float and double numbers using function overloading technique. (Passing more than one arguments to the functions).	05
Q.5B	Which operators cannot be overloaded? Give a programming example that overloads assignment (=) operator with its use.	05

- Q.6A Explain public, private and protected access specifiers and show their visibility when they are inherited as public, private and protected. 05
- Q.6B What is a friend class? Write a program to swap two numbers using friend classes. 05

OR

- Q.6B Can you explicitly call a constructor from main()? If yes, how? Write a program defines a class called Point that stores the x and y coordinates of a point. The class uses parameterized constructor for initializing the class objects. 05

- Q.7A What is the role of virtual functions in late binding of the program? Write a program to apply the arithmetic operations (+, *) on the given integers through various functions based on late binding. 05

- Q.7B Write a program that has a class *employee* inherited by two classes - *contract* and *permanent*. 05

OR

- Q.7B Write a program that uses multi-level inheritance to implement classes- *node*, *server*, and *device*. 05

- Q.8A Explain following with an example : 10

- Manipulators
- Default arguments
- Copy constructor
- Destructor
- Message passing

- Q.9A Explain friend function and list sum of the special properties of friend function. Write a program that adds two numbers belonging to different classes. Demonstrate the use of friend function in one class that is a member function of the second class. 10

- Q.9B What is meant by exceptions? How an exception is handled in C++? Bring out the advantages of using various exception handling mechanisms. Write a program that performs calculator operations and throws exception if an attempts is made to divide a number by zero or if invalid operator is applied. 10

OR

- Q.9B Write a C++ program using classes and objects to simulate result preparation system for 20 students. The data available for each student includes roll no. name and marks in 3 subjects. The percentage marks and grades are to be calculated from the above information. 10

The percentage marks are the average and the grade is calculated as follows:

Percentage Marks	Grade
<50	'F'
>=50<60	'D'
>=60<75	'C'
>=75<90	'B'
>=90<100	'A'