

Old

Total No. of Pages -2

Roll No.

IIIrd SEMESTER

B.Tech.[IT]

SUPPLEMENTARY EXAM

(FEB-2018)

IT-206 OBJECT ORIENTED TECHNOLOGY

Time: 3:00 Hours

Max. Marks : 70

Note: Assume suitable missing data, if any.

Ques.1 (a) Write a program to accept an integer number. Find out prime and non prime numbers. (7)

(b) Draw use case diagram with use case scenario of Library management system. Also identify the final set of classes. (7)

Ques.2 (a) What are the process that are involved in key abstraction ? Explain the detailed mechanism. (7)

(b) Write a program to declare a class with three data members. Declare overloaded Constructors with no arguments, one arguments, two arguments and three arguments. Pass values in object declaration statement. Create four objects and pass values in such a way that the entire four constructors are executed one by one. (7)

OR

Ques.3 (a) Discuss the Functional modelling technique proposed by Raumbagh and describe how it is different from UML? (7)

(b) Write a program that displays Employee information working in cab company. Develop a base class employee and route and salary classes as derived classes. Find chidamber metrics for the classes. (7)

Ques.4(a) Explain all features of dynamic modelling in detail? (7)

(b) Write a program to concatenate two strings using operator overloading (without using inbuilt functions). (7)

OR

Ques.5 (a) Draw a DFD for Book fair using event partitioning approach. (7)

(b) What is the role of database in programming. How object oriented databases changed the evolution of object oriented programming. Explain in detail. (7)

Ques.6(a) Explain all types of object oriented testing. (7)

(b) What is destructor. Explain different types of Constructor. (7)

Ques. 7 Write short note on any two (7x2=14)

a) Data Hiding

b) Polymorphism and its types

c) Difference between methodologies used by Raumbagh, Jacobsan and Booch

-END-

Total No. of Pages 2
3rd SEMESTER
SUPPLEMENTARY EXAMINATION

Roll No.....

B.Tech. (CSE)

Feb-2019

SE203 Object Oriented Programming

Max. Marks: 40

Time: 3:00 Hours

Note: Answer any five question. Question No. 1 is compulsory.
Assume suitable missing data, if any.

Q1. Answer all the following questions:

[12]

- (a) Compare the OOP Language and structured programming language
- (b) Define constructor and give example
- (c) What is Abstract class? Explain
- (d) List the operators which are not possible to overload.
- (e) How to protect the data with private inheritance?
- (f) Explain the guidelines for defining template.

Q2. Answer all the following questions:

[3, 4]

- (a) Give the structure of a C++ Program.
- (b) Demonstrate encapsulation and polymorphism.

Q3. Answer all the following questions:

[3,4]

- (a) Explain about scope resolution operator?
- (b) Illustrate the dynamic initialization of objects for long term fixed deposit system program.

Q4. Answer all the following questions:

[3, 4]

- (a) Distinguish between call by value and call by address with an example
- (b) Write a program to exchange values between two classes using friend classes

Q5. Answer all the following questions:

[3, 4]

- (a) Explain two ways of converting an object of one class to an object of another?
- (b) Differentiate between derived constructor and base constructor.

P.T.O

Q6. Describe the three different inheritance behaviors achieved through the use of
pure virtual, ordinary virtual and non virtual functions? [7]

Q7. Answer all the following questions: [3, 4]
(a) Write a c++ Program to add two integers, two floats and two complex numbers
using class templates.
(b) Explain about the sequential and random access file operations

-END-

Total No. of Pages 2
3rd SEMESTER
SUPPLEMENTARY EXAMINATION

Roll No.....
B.Tech. (CSE)
Feb-2019

SE203 Object Oriented Programming

Time: 3:00 Hours

Max. Marks: 40

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Assume suitable missing data, if any.

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- (c) What is Abstract class? Explain
- (d) List the operators which are not possible to overload.
- (e) How to protect the data with private inheritance?
- (f) Explain the guidelines for defining template.

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- (b) Demonstrate encapsulation and polymorphism.

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- (b) Illustrate the dynamic initialization of objects for long term fixed deposit system program.

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P.T.O

- 93 -

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- (a) Write a c++ Program to add two integers, two floats and two complex numbers using class templates.
- (b) Explain about the sequential and random access file operations

-END-

Total No. of Pages -1

Roll No.

III SEMESTER

B.Tech.[IT]

SUPPLEMENTARY PAPER

(FEB-2019)

IT 203 OBJECT ORIENTED PROGRAMMING

Time:3hrs.

Max. Marks: 40

Note: Q1 is compulsory. Attempt any FOUR out of the rest.

Assume suitable missing data, if any.

Q1. Answer the following

2x6

- a) Write a program to find the length of a string using operator overloading
- b) Differentiate between Java application vs applet
- c) Differentiate between Call by value vs call by reference
- d) Differentiate between Class and structure
- e) What is dynamic and static binding in C++?
- f) What is the role of :: in inheritance?

Q2. a) Explain the methods to overload operators. Why is it required? Overload the << and >> operators.

3

b) What is a friend function? Explain the concept of friend function and friend class in detail with an example. Also discuss inheritance in case of a friend function giving reasons for your answer.

4

Q3 a) Write a program to declare a class 'student', consisting of data members roll_no and stud_name. Write the member functions accept() to accept and display() to display the data for 10 students.

3

b) What is java applet? Give its properties in detail. Give an example of the same by creating a basic applet which will print the string "Hello User" on the screen.

4

Q4. Answer the following with examples

- a) "Java is a pure object oriented programming language". Explain
- b) Write a program to show the use of virtual-base class.

3

4

Q5. Answer the following with examples.

- a) What is the role of a nested class? How to use it?
- b) How does runtime polymorphism occur in C++?

3

4

Q6 a) Write a program to show the role of this keyword in C++. Explain.

3

b) Explain exception handling in C++. How is an exception rethrown? Also explain the concept of multiple catch and catch all.

4

Q7 a) Explain templates and its types with detailed example.

3

b) What is initialiser list and discuss its role in constructor calls in multilevel inheritance in C++ with examples.

4

Total No. of Pages 02

Roll No.....

3rd SEMESTER

B.Tech.

END SEMESTER EXAMINATION

Nov./Dec.-2019

PAPER CODE: CO 203 Object Oriented Programming

Time: 3:00 Hours

Max. Marks : 40

Note: Answer five questions. Question No. 1 is compulsory.

Assume suitable missing data, if any.

Q1. Answer all the following questions: [12]

- [a] Explain array of pointers with suitable example.
- [b] Explain extraction and insertion operator.
- [c] When scope resolution operator is used?
- [d] What precautions should we take while at the time of function overloading?
- [e] What do you mean by abstract class?
- [f] What is type casting and when is it used?

Q2. [a] What is OOP? State advantages of OOP. [3]

[b] Explain this pointer with suitable example. [4]

Q3. [a] Explain Class Template with suitable example. How overloading of template functions is resolved? [3]

[b] Write a C++ program using operator overloading to check whether given number is prime or not. [4]

Q4. [a] What is Copy Constructor? Describe merits and demerits of it. [3]

[b] Write a C++ program to read a file and count the no. of vowels and consonants. [4]

Q5. [a] Write a program that catches all type of exceptions. [3]

[b] Illustrate with C++ program the execution of constructor and destructor when single inheritance is involved. [4]

Q6. [a] When do we make a function pure virtual Function? [3]

[b] What is virtual function? Why do we need virtual Function? [4]

Q7. [a] What are streams in C++? Explain C++'s predefined streams.

[3]

[b] What are the major features of Java Programming Language?

[4]

Old

Total no. of pages 2

Roll No:.....

THIRD SEM

B.TECH(CO/SE)

END SEM EXAMINATION

NOV. 2018

CO/SE-201 OBJECT ORIENTED PROGRAMMING

Time: 3 Hours

Max. Marks : 70

Note : Answer any five questions

Assume suitable missing data, if any.

- | |
|--|
| <p>Q1. (a) Explain parameterised constructor. Give suitable code to explain 7
 (b) What is type conversion? Write suitable code for conversion from basic to class type. 7</p> <p>Q2. (a) How many keywords are there in C++? Explain any 3 keywords of C++. 7
 (b) What is the different type of inheritance? explain 7</p> <p>Q3 (a) Explain the use of inline function. Give suitable example. 7
 (b) What is function overloading? Write a program to overload function area using function overloading. 7</p> <p>Q4. (a) Explain call by value and call by reference. 7
 (b) Write a program to add, show details of faculty using inheritance where class "emp" is inherited by class "faculty" 7</p> <p>Q5 (a) Give the meaning of the following terms: 9
 i) Abstraction;
 ii) Encapsulation;
 iii) Data hiding.
 (b) Explain visibility modes protected available in C++ along with their purpose. 5</p> <p>Q6. (a) What are the rules for naming identifier? 5
 (b) How the virtual functions are declared in C++. 6
 (c) List operators which can't be overloaded 3</p> |
|--|

Q7. Write short notes on any two :-

14

- (a) Friend function
- (b) Templates
- (c) Pure virtual function
- (d) Features of Java

Total No. of Pages: 01

3RD SEMESTER

MID SEMESTER EXAMINATION

Roll No.....

B.Tech.(CSE)

(Sept - 2019)

CO 203: Object Oriented Programming

Max. Marks: 30

Time: 1:30 Hours

Note: Answer all questions.

Assume suitable missing data, if any.

- Q 1. Differentiate between characteristics of procedure-oriented programming and object-oriented programming languages. (4)
- Q 2. List the operators that cannot be overloaded through member function and friend function. (3)
- Q 3. What is inline function? Explain situations where inline expansion may not work. (3)
- Q 4. Write a C++ 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. (5)
- Q 5. Write a C++ program to keep a track of number of objects created, number of objects destroyed, and number of active objects in a program. (5)
- Q 6. Explain virtual base class with suitable example. (5)
- Q 7. Write a C++ program to add two complex numbers using classes and operator overloading. (5)

Total No. of Pages

Roll No.

III SEMESTER

B.Tech.[IT]

SUPPLEMENTARY PAPER

(FEB-2020)

IT 203 OBJECT ORIENTED PROGRAMMING

Max. Marks: 40

Time:3hrs.

Note: Q1 is compulsory. Attempt any FOUR out of the rest.

Assume suitable missing data, if any.

2x6

Q1. Answer the following

- a) Write a program to concatenate two strings using operator overloading
- b) Differentiate between Java application vs applet
- c) Differentiate between inheritance and containership
- d) Differentiate between Class and union
- e) What is dynamic and static binding in C++?
- f) What is the role of :: in inheritance?

Q2. a) Explain the methods to overload operators. Why is it required? Overload the << and >> operators. 3

b) What is a friend function? Explain the concept of friend function and friend class in detail with an example. Also discuss inheritance in case of a friend function giving reasons for your answer. 4

Q3 a) Write a java program to declare a class 'student', consisting of data members roll_no and stud_name.

Write the member functions accept() to accept and display() to display the data for 10 students. 3

b) What is java applet? Give its properties in detail. Give an example of the same by creating a basic applet which will print the string "Hello User" on the screen. 4

Q4. Answer the following with examples

- a) Explain the concept of bytecode in detail with life stages of a java code. 3
- b) Write a program to show the use of virtual base class. 4

Q5. Answer the following with examples.

- a) What is the role of a nested class? How to use it? 3
- b) How does runtime polymorphism occur in C++? 4

Q6 a) Write a program to show the role of this keyword in C++. Explain. 3

b) Explain exception handling in C++. How is an exception rethrown? Also explain the concept of multiple catch and catch all. 4

Q7 a) Explain templates and its types with detailed example. 3

b) What is initialiser list and discuss its role in constructor calls in multilevel inheritance in C++ with examples. 4

Total No. of Pages 1

Roll No.

III SEMESTER

B.Tech.[IT]

MID SEM EXAM

(SEPT-2019)

IT 203 OBJECT ORIENTED PROGRAMMING

Time: 1.5 hrs.

Max. Marks: 30

Note: Assume suitable missing data, if any. Give examples wherever required.

Q1. Answer the following

[3x3]

- What is static in data members and member functions? Explain
- Differentiate between Call by value vs call by reference using 'object as argument' concept.
- How to invoke a private constructor?

Q2.

- Differentiate between Class and structure with examples from each. [3]
- What is the role of :: in inheritance? [3]
- Can destructors be overloaded? Why or why not. [3]

Q3.

- What is operator overloading and which feature of OOP does it represent? Explain with example of overloading delete operator and << operator. [3]
- Write a program to show the use of virtual base class. [3]

Q4.

- What is the role of a nested class? How to use it? [3]
- What is initialiser list and discuss its role in constructor calls in multilevel inheritance in C++ with examples. [3]

Total No. of Pages: 1
3RD SEMESTER
MID SEMESTER EXAMINATION

Roll No.....
B.Tech.(CSE)
(Sept– 2018)

SE 203: Object Oriented Programming

Time: 1:30 Hours

Max. Marks: 30

Note: Answer all questions.

Assume suitable missing data, if any.

- Q 1.** What is a static data member? How they are used in static functions.
Explain with suitable illustration. (3)
- Q 2.** What is a namespace? (2)
- Q 3.** List the operators that cannot be overloaded. (2)
- Q 4.** What is inline function? Explain situations where inline expansion may not work. (3)
- Q 5.** Explain the Object Oriented programming concepts. (5)
- Q 6.** List the characteristics of a constructor. Write a C++ program to define a suitable parameterized constructor with default values for the class distance with data members feet and inches. (5)
- Q 7.** Explain copy constructor with suitable C++ coding. (4)
- Q 8.** Write a C++ program to create a class called STRING and implement the following operations. Display the results after every operation by overloading the operator.
- STRING s1 = "HELLO"
- STRING s2 = "WORLD"
- STIRNG s3 = s1 + s2 ; (Use copy constructor) (6)

-END-

Time: 1:30 Hours

Max. Marks :30

Note: All questions are compulsory.

Assume suitable missing data, if any.

Q1. Answer the following with the help of examples. 2x5

- What are 'new' and 'delete' in c++? Explain their purpose with proper syntax.
- What is the role of 'const' and '&' symbol in case of copy constructor?
- Can a destructor be called explicitly? Justify your answer (Yes/No) with an example.
- What is a friend function? Can it be inherited? Why or why not?
- What is a class variable in C++? Give an example..

Q2. a) Name the operator(s) which cannot be overloaded. Also name operator(S) which cannot be overloaded using friend function and the reason behind it. 2.5b) Write a c++ program to overload the '+' operator to concatenate two strings (i.e. $s3 = s1 + s2$; where s_i is the object of a class. 2.5Q3. What is the concept of a virtual base class and an abstract class? Where are they used? Explain in detail with the help of an example of each. 5Q4. a) What are templates in C++? Write a program for defining a function template (taking 'T' type argument(s) and an integer value) which calculates the max of two numbers and returns the maximum of the two after multiplying it with the integer value passed as argument. For example to say $\max(2,7,5)$ should return 35 and $\max(1.1, 5.6, 2)$ should return 11.2. 5

b) Predict the output:

2.5x2

I)

```
#include <iostream>
using std::printf;
#include<iostream>
using namespace std;
class X{
public:
    int i,j;
    X();
    X(int x);
    X(int x, int y);
    ~X();
};

X::X(int x):i(x),j(23)
{printf("X:X(int)\n");cout<<i<<endl;}
X::X(int x, int y): X(x+y) {
    printf("X::X(int,int)\n");}
X::X():X(44,11) {printf("X:X()\n");}
X::~X() {printf("X::~X()\n");}
```

```
int main(void
){
    X x;
```

II)

```
#include <iostream>
using namespace std;

class A
{
    int x;
public:
    A() { cout << "A's constructor called "
    << endl; }
};

class B
{
    static A a;
public:
    B() { cout << "B's constructor called "
    << endl; }
    static A getA() { return a; }
};

A B::a;

int main()
{
    B b1, b2, b3;
    A a = b1.getA();

    return 0;
}
```

END

SE 203: Object Oriented Programming

Time: 1:30 Hours

Max. Marks: 30

Note: Answer all questions.

Assume suitable missing data, if any.

- Q 1.** Differentiate between characteristics of procedure-oriented programming and object-oriented programming languages. (4)
- Q 2.** List the operators that cannot be overloaded through member function and friend function. (3)
- Q 3.** What is inline function? Explain situations where inline expansion may not work. (3)
- Q 4.** Write a C++ 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. (5)
- Q 5.** Write a C++ program to keep a track of number of objects created, number of objects destroyed, and number of active objects in a program. (5)
- Q 6.** Explain virtual base class with suitable example. (5)
- Q 7.** Write a C++ program to convert class time with data members as hrs and mins into class minutes with data member as totalminutes. (5)

Calculate the following:

- i) Average waiting time and average turn-around Time using SJF preemptive scheduling mechanism.
- ii) Assume time quantum to be 1 unit of time. Calculate average waiting time and average turn-around time using Round-Robin Scheduling.

Q5. What is mutual exclusion? How mutual exclusion is achieved in peterson's solution? Explain by giving proper structure of process Pi and Pj. [5]

OR

What is inter-process communication? Compare and contrast two fundamental models of inter-process communication. [5]

-END-

IT 203 OBJECT ORIENTED PROGRAMMING

Time: 3hrs.

Max. Marks: 40

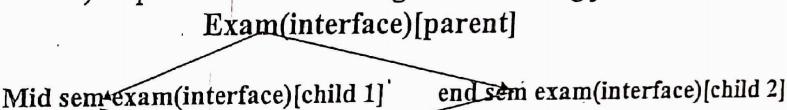
Note: Assume suitable missing data, if any. Give examples wherever required.
Attempt any 5. All carry equal marks.

Q1. A) Explain Java applets in detail. Create an applet using any 4 functions from Graphics class. 4

B) What is an exception? Define the user defined exception class 'MyException'. Override the what() function in the class which will print "weight is over 100kgs" for a commodity's weight if its value exceeds 100. The value of the commodity will be entered by user. 4

Q2. A) What are the different catch blocks? Why and how to rethrow an exception? 4

B) Implement the following scenario using java code: 4



Mid sem exam(interface)[child 1] end sem exam(interface)[child 2]

IT_BRANCH(class)

DTU (Class): containing the main() function.

Include functions in each class/interface and show the use of each in detail. 2x4

Q3 A) what is the difference between

- i) Local class vs inheritance vs containership
- ii) Static vs dynamic binding
- iii) new operator vs operator new
- iv) abstract class vs virtual base class

Q4. A) implement the following using friend concept. Class IT_student, class mechanical_student. 4

Class IT_student: Name , age, marks,roll: [private] Public functions: Get() -> input from user Show()-> output on screen	Class mechanical_student: Name , age, marks,roll: [private] Public functions: Get() -> input from user Show()-> output on screen
--	--

Add the following concepts to the program:

- i) a friend function add() to add marks of both students(IT,Mech) and display the output.

ii) to make mechanical_student class friend class of IT_student and vice versa so that show() functions of each class can first display its own details and then other class's details. I.e. IT's show() will display details of IT student first and then mechanical student's details and vice versa.

B) What are packages in java. Explain in detail with an example. 4

Q5. A) what is the concept of templates? Explain with example from each category in detail. 4

B) What is run-time polymorphism? Explain in detail. 4

Q6 A) Explain the java architecture and the lifecycle of a java code in detail. 4

B) Explain and predict the output : 4
1x4

i)

```
#include<iostream>
using namespace std;

class Test
{
    int value;
public:
    Test(int v = 0) { value = v; }
    int getValue() { return value; }
};

int main()
{
    const Test t;
    cout << t.getValue();
    return 0;
}
```

ii)

```
#include <iostream>
using namespace std;
class A
{
public:
    void print() { cout << "A::print()"; }
};

class B : private A
{
public:
    void print() { cout << "B::print()"; }
};
class C : public B
{
public:
    void print() { A::print(); }
};

int main()
{
    C b;
    b.print();
}
```

iii)

```
#include <iostream>
using std::cout;
class Test
{
public:
    Test();
    ~Test();
};

Test::Test()
{
    cout << "Constructor is
executed\n";
}

Test::~Test()
{
    cout << "Destructor is
executed\n";
}

int main()
{
    delete new Test();
    return 0;
}
```

iv)

```
#include<stdio.h>
int fun()
{
    static int num = 40;
    return num--;
}

int main()
{
    for(fun(); fun(); fun())
    {
        printf("%d ", fun());
    }
    getchar();
    return 0;
}
```

--END

2K12/CO/126

Roll No.....

B.Tech. (COE & SE)

(September - 2013)

Total No. of Pages 1

3RD SEMESTER

MID SEMESTER EXAMINATION

COE/SE 201

Object Oriented Programming

Time: 1:30 Hours

Max. Marks: 20

Note: Answer all the questions.

Assume suitable missing data, if any.

Q1 (a) How does object oriented approach differ from object based approach? ✓ 2

Q1 (b) Differentiate between overloading and overriding with an example. ✓ 2

Q1 (c) State TRUE or FALSE. 1

Member functions defined inside a class specifier become inline functions by default. ✓

Q2 Write a program for the following problem statement using the concept of multi level inheritance along with the output.

- i. Class **student** stores the roll_number. ✓
- ii. Class **test** stores the marks obtained in two subjects. ✓
- iii. Class **result** contains the total marks obtained in the test. ✓
- iv. Class **result** will inherit the details of marks obtained in **test** & roll_number from **student**. ✓ 5

Q3 Explain the concept of type conversion in detail. Discuss with the help of example. 13 5

Q4 Define a class to represent a bank account. Include the following members:

Data Members	Member Functions
Name of the depositor	To assign initial values
Account Number	To deposit an amount
Type of account	To withdraw an amount after checking the balance
Balance amount in the account	To display name and balance

Write a main program to test the program. 5

Total no. of pages 1
THIRD SEM

Roll No:.....
B.TECH(CO)

MID SEMESTER EXAMINATION

SEPTEMBER 2014

SE-201/CO-201 OBJECT ORIENTED PROGRAMMING

Time: 1 Hour 30 min.

Max. Marks : 20

Note : Answer all questions
Assume suitable missing data, if any.

- Q1. (a) Explain different types of constructors and destructors. Give suitable examples for each. 3
(b) Write a program to explain the inline function 2
- Q2. (a) How does main() function in C++ differ from main() in C? What is the need of *<iostream>*? 2
(b) Explain the following with examples
(i) Pointer to member
(ii) Static data members & member functions 3
- Q3 (a) What are the important features of OOP? 2
(b) What is operator overloading? Write a program to overload addition operator to add two matrices. 3
- Q4. (a) How many keywords are there in C++. Explain any 4 (other than 32 keywords in C). 2
(b) Differentiate between implicit and explicit type conversion. How the type conversion from "Class to Basic type" is done? 3
- Q5 (a) What is a friend function? What is the difference between member function as friendly function and general function as friendly function? 3
(b) Explain different visibility modes available in C++. 2

- 34 P = A :: & m;

THIRD SEMESTER**B.Tech.(SE)****MID SEMESTER EXAMINATION****SEPTEMBER-2010****SW- 201 OBJECT ORIENTED PROGRAMMING****Time: 1 Hour 30 Minutes****Max. Marks : 20**

Note : Answer any **FOUR** questions.

Assume suitable missing data, if any.

- 1[a] What is object oriented programming. How is it different from the procedure oriented programming? 3
- 1[b] What are the principal advantages of an object-oriented programming paradigm? 2
- 2[a] What is a class? How does it accomplish data hiding? 3
- 2[b] When do we declare a member of a class static? 2
- 3 Write short notes on constructors and destructors. 5
- 4[a] What are the different forms of Inheritance? 3
- 4[b] Explain the Ambiguity resolution in Inheritance. 2
- 5 Create a class called time that has separate member data for hours, minutes and seconds. One constructor should initialize this data to 0, and another should initialize it to fixed values. A member function should display it as in 10:52:37 format. The final member functions should add two objects of type time passed as arguments.

A main () program should create two initialized time objects, and one that is not initialized. Then it should add the two initialized values together, leaving the result in the third time variable. Finally it should display the value of this third variable.