Roll No:

BTECH
(SEM V) THEORY EXAMINATION 2023-24
OBJECT ORIENTED SYSTEM DESIGN

TIME: 3 HRS   **M.MARKS: 100**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   **Attempt *all* questions in brief.**   **2 x 10 = 20**

Q no.	Question	Marks	CO
a.	Describe the features of object-oriented languages ?	2	1
b.	Differentiate between structured approach and object oriented approach.	2	1
c.	What is UML ?	2	2
d.	Describe generalization	2	2
e.	What are the three models in OMT ?	2	3
f.	What do you mean by the optimization of design ?	2	3
g.	Write a C++ program to calculate the value of sin (x).	2	4
h.	Explain typecasting in C++..	2	4
i.	Differentiate between public and private member function.	2	5
j.	Explain static data and static function member.	2	5

SECTION B

2.   **Attempt any *three* of the following:**   **10 x 3 = 30**

a.	What do you understand by object-oriented technology ? Discuss the pros and cons of object-oriented technology with suitable example.	10	1
b.	What do you understand by architectural modeling ? Explain its various concepts and diagrams with suitable example	10	2
c.	What do you mean by documentation? What are the various considerations in documentation designing? Explain.	10	3
d.	Describe briefly the term namespace, identifiers, variables constants, enum.	10	4
e.	Construct a C++ program depicting the concept of multiple inheritance.	10	5

SECTION C

3.   **Attempt any *one* part of the following:**   **10 x 1 = 10**

a.	Discuss the concept of encapsulation with suitable example.	10	1
b.	What do you mean by polymorphism ? Explain it with an example.	10	1

4.   **Attempt any *one* part of the following:**   **10 x 1 = 10**

a.	Explain class and object diagrams with examples.	10	2
b.	Prepare a portion of an object diagram for a library book checkout system that shows the date a book is due and the late charges for an overdue book as derived objects.	10	2

5.   **Attempt any *one* part of the following:**   **10 x 1 = 10**

a.	Describe the structured analysis and structured design approach with an example.	10	3
b.	How do you map the object-oriented concepts using non-object oriented languages ? Explain with an example.	10	3

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6.	Attempt any *one* part of the following:	10 x 1 = 10	
a.	Explain friend function with example.	10	4
b.	Discuss virtual function. How it is different from pure virtual function? Write a program in C++ for it.	10	4

7.	Attempt any *one* part of the following:	10 x 1 = 10	
a.	Design a class using C++ to create a singly linked list.	10	5
b.	Define constructor. How constructor is different from normal member function. Explain with example.	10	5