B5.2-R3: OBJECT ORIENTED DATABASE MANAGEMENT SYSTEM

NOTE:

1.	**Answer question 1 and any FOUR questions from 2 to 7.**
2.	**Parts of the same question should be answered together and in the same sequence.**

Time: 3 Hours   **Total Marks: 100**

1.

a) State the difference between transient and persistent objects. How is persistent handled in object oriented database system? Illustrate with an example.

b) What is the difference between overloading and overriding methods? Explain with examples.

c) Discuss the role of OMG in forming standards in Object Oriented Technology.

d) Distinguish between relational database and object oriented database systems.

e) Compare and contrast OLTP with OLAP.

f) What are the roles of stubs and skeleton in CORBA?

g) What is data mining? Give three examples of application where data mining is used, clearly bringing out the differences between database and data mining.

(7x4)

2.

a) Discuss various characteristics of object hierarchy and entity hierarchy?

b) What is JDBC? How does it work? Explain in brief?

c) How does a OODBMS exploit encapsulation in implementing support for Abstract Data Types (ADTs)?

(6+6+6)

3.

a) What is CORBA? Explain in brief the architecture of CORBA with special reference to ORB, IDL and protocols.

b) What are the salient features of active database? How do you model an active database?

c) Briefly discuss the general principles behind the C++ binding of the ODMG standards.

(8+5+5)

4.

a) What is the difference between constrained write and unconstrained write assumptions? Which is more realistic?

b) Discuss, how serializability is used to enforce concurrency control in a database system.

c) What is meant by transaction rollback? Which recovery techniques do not require any rollback?

(7+6+5)

5.

a) Consider the following relations for a database that keeps track of business trips of sales persons in a sales office:

   SALESPERSON(SSN,NAME,START_YEAR,DEPT_NO)
   TRIP(SSN,FROM_CITY,TO_CITY,DEPARTURE_DATE,RETURN_DATE,TRIP_ID)
   EXPENSE(TRIP_ID,ACCOUNT_NO,AMOUNT)

   i)   Print the SSN of salesman who took trips of 'ROME'
   ii) Print the total trip expenses incurred by the salesman with SSN='48548'

b) How the above object-orientation can be supported in SQL? List the Characteristic features of SQL to deal with object orientation.

(8+10)

6.

a) FDBS (Federated Data Base) is an integration of autonomous database system. State whether FDBS is a type of Distributed Database System. Discuss various issues affecting the design of FDBS.

b) SQL Extension and Extension to an OO Programming are two approaches used for Object Query Language. Compare and contrast between "SQL Extension" and "Extension of an OO Programming" language.

c) "Under-estimating multiplicity can restrict the flexibility of an application in object oriented technique." Justify your answer.

(8+5+5)

7.   Write short notes of **any three** of the followings:

a) Database Authorization
b) Virtual Functions and Static Functions
c) Nested Transactions in OODBMS
d) Distributed Updates

(3x6)