B5.2-R3: OBJECT ORIENTED DATABASE MANAGEMENT SYSTEMS

NOTE:

1. Answer question 1 and any FOUR from questions 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 persistent and transient objects. How persistence is handled in object oriented (OO) database systems?
    b) Briefly describe E-R model constructs.
    c) Differentiate between overloading and overriding of methods in Object-Oriented programming with suitable examples.
    d) Differentiate between the concept of Data Independence in Distributed DBMS and concept of Data Independence in Centralized DBMS.
    e) Give comparison between On Line Analytical processing (OLAP) and On Line Transaction processing (OLTP).
    f) DAPLEX is a Functional Database Model. Explain.
    g) How does the concept of an object in the object oriented model differ from the concept of an entity in entity relationship model? (7x4)

2. a) Explain the concept of Overriding, Overloading and Late Binding.
    b) Discuss performance issue of OODBMS with the help of examples and explain how performance can be achieved?
    c) Explain the purpose of checkpoint mechanism. How often should checkpoints be performed? (6+6+6)

3. a) What is CORBA? Explain in brief the architecture of CORBA with special reference to ORB, IDL and protocols.
    b) Explain with an example Booch methodology for Object-Oriented (OO) design.
    c) Briefly explain ODMA object model. ([2+6]+6+4)

4. a) What is deadlock? How is deadlock handled using Deadlock prevention and Deadlock Detection Scheme? What is Starvation?
    b) What is the meaning of Nested Transactions in Object-Oriented Database Management System? Discuss various operation used in Nested Transactions. ([2+8+2]+6)

5. a) What are the different architectural approaches of Object Orientation in DBMS? Explain Aggregation with example.
    b) Let O1 and O2 are a composite object that contains the same type of objects. Is O1 identical to O2? Explain. ([8+4]+6)
6. a) What is Distributed Query Processing? Give an approach of Commit Protocol for Distributed Database.
   b) Define Replication and fragmentation of Data. When is it useful to make Replication or Fragmentation of Data?

7. Write short notes on any three of the followings:
   a) Parallel Query Processing
   b) Distinction between Arrays and Pointers
   c) Virtual Functions
   d) Multimedia Database