

## B4.3-R4: 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) Explain the purpose of materialized view with suitable example.
- b) What is active database? How does it differ from object-oriented database?
- c) Generalization and Inheritance are powerful abstraction for sharing similarities among classes while preserving their difference. Explain with an example.
- d) Justify the following statement: Concurrent execution of transactions is more important when data must be fetched from (slow) disk or when transactions are long, and is less important when data is in memory and transactions are very short.
- e) State any six salient differences between OLTP and OLAP systems?
- f) Explain clearly in what way designing an object oriented database is different from relational database?
- g) What do you understand by Object Relational Mapping?

**(7x4)**

**2.**

- a) Object Modeling Technique (OMT) consists of building a model of an application domain and then adding implementation details to it during the design of a system. Discuss the various stages of OMT.
- b) Object oriented languages vary in their support of advanced object oriented concepts. Explain the various features of object oriented languages that vary among languages.

**(10+8)**

**3.**

- a) Discuss the architectures of Object Oriented DBMS.
- b) How would you handle Specialization and Generalization in Object Relational Data Model? Illustrate with example.

**(9+9)**

**4.**

- a) What are advantages and disadvantages of Object Oriented Development?
- b) What is the difference between static and dynamic service invocation mechanisms in CORBA? Comment on the advantages and disadvantages of each.
- c) What is polymorphism in object oriented programming? What are the advantages of it?

**(6+6+6)**

**5.**

- a) Give architectural differences between Object Oriented Database Management and Object Relational Database Management with respect to following concepts: data modeling and querying, backup and recovery, performance, customizing data types.
- b) Explain the XML Model with its components.

**(9+9)**

**6.**

- a) What is object serialization? How is the concept linked to object-persistence? How does a persistent programming language help in object-oriented databases?
- b) Explain the limitations of Relational Data Model.
- c) How does the concept of an object in the object-oriented model differ from the concept of an entity in the entity-relationship model?

**(6+6+6)**

**7.**

- a) What is the content of XML documents? What is specified by Document type Declaration (DTD)?
- b) What kinds of support are available in Oracle 9i for ORDBMS?
- c) State the new kinds of data types supported in object-database system. Give an example for each and discuss how the example situation would be handled if only RDBMS were available.

**(6+6+6)**