

B5.2-R3: OBJECT ORIENTED DATABASE MANAGEMENT SYSTEMS

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) Explain clearly in what way designing an object oriented database is different from relational database.
- b) Under what conditions two objects of the same type are called deep equal? Describe how this equality is different from shallow equal.
- c) What is check pointing? Why is it needed?
- d) State any six salient differences between OLTP and OLAP systems?
- e) How does DBMS exploit the encapsulation in implementing support of ADTs?
- f) Why does the need of encryption still require when a DBMS already supports discretionary and mandatory access control?
- g) What kinds of support are available in Oracle 9i for ORDBMS?

(7x4)

2.

- a) Explain the concepts of serial, non-serial and serializable schedules. State also the rules for equivalence of schedules.
- b) State the advantages of distributed DBMS over a centralized DBMS?
- c) What is meant by nested transaction? Discuss with an example the various operations used in nested transaction.

(6+6+6)

3.

- a) How recovery is handled in distributed system? Discuss with example.
- b) Define distributed join. Explain its representation in relational algebra.
- c) How does the concept of an object in object-oriented model differ from the concept of an entity in the ER diagram?

(6+6+6)

4.

- a) Discuss various types of concept hierarchies by providing two examples for each type.
- b) What are the major functions of OLAP tool? Name any two commercial tools.
- c) How does a DBMS exploit encapsulation in implementing support for Abstract Data Types (ADTs)?

(6+6+6)

5.

- a) Compare ORDBMS and OODBMS with respect to Data sharing, data modelling and data accessing.
- b) How is Chen-Chen methodology used for object oriented design?
- c) What is the purpose of creating an intersection record in mapping object-oriented models to hierarchical networks?

(6+6+6)

6.

- a) Suppose that a data warehouse consists of four dimensions date, spectator, location and game and the two measures count and charge, where charge is the fare that a spectator pays when watching a game on a given date. Spectators may be students, adults or seniors. With each category having its own charge rate. Draw a star schema diagram for the data warehouse and state how many cuboids are needed to build the data cube?
- b) Explain with an example, how parallel queries are executed?
- c) Describe in brief the need of formulative middleware standard like CORBA in distributed object oriented systems.

(6+6+6)

7.

- a) How are large objects such as multimedia objects stored in object-oriented database systems?
- b) What are the typical requirements of clustering in data mining?
- 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)