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CS-06

PGDCA / MCA (I Year)

Term-End Examination

December, 2010

11297

CS-06 : DATABASE MANAGEMENT SYSTEM

Time : 3 hours *Maximum Marks : 75*

*Note : Question number **1** is **compulsory**. Attempt **any three** from the rest.*

1. (a) Assume a Film or movie production house which maintains information about films, actors and studios. Films have a name, year of production duration and the category of the film. Actors have a name, address and contact number. Studios have a owner and a banner. Films are shot in studios which own them. A film is shot in only one studio. Actors are connected to one or more studios but can act in any films which may or may not be owned by the studio. On the basis of the above specifications Design an ERD indicating attributes, keys and the cardinality ratios. **10**

   (b) What is data independence ? Explain, how is data independence achieved, using an example. **5**

(c) What is a multivalued dependency (MVD) ? How is it related to functional dependency ? What do you understand by a Trivial MVD ? Explain using an example explain the normal form based on MVD using example. 10

(d) What do you understand by a knowledge base ? Explain any two representational schemes in knowledge bases using examples for each. 5

2. (a) How does indexed sequential file organisation maintain and retrieve the data ? What are its advantages over sequential organisation ? 8

(b) Explain the concepts of Generalization and Specialization with an example for each. How is a specialized entity different from a weak entity ? 7

3. (a) Explain the "Rule of entity integrity" and "comprehensive sublanguage rule", CODD's Rule, with an example for each. 6

(b) What are the limitations of relational DBMS ? Explain the advantages of distributed and object oriented DBMS over relational DBMS. 7

(c) Explain how is superkey different from a candidate key using an example. 2

4. (a) Why is BCNF a more desirable normal form than lower forms ? Give an example of a relational scheme that is in third normal form but not in BCNF. Also explain using an example why it is not practically feasible always. 7

(b) What are the advantages & disadvantages for distribution of data. Discuss any two issues in design of distributed databases. 8

5. Consider the following relations, where primary keys are underlined. 15

SHOP(SHOP_NO, SH_NAME, SH_ADDRESS)

SHOP_OWNER(OWNER_NAME, OWMER_ADDRESS)

CUSTOMER(C_NAME, C_ADDRESS)

REQUIRES(C_NAME, ITEM)

WAS_STOCK(SHOP_NO, ITEM)

SUPPLIES(SHOP_NO, C_NAME, ITEM, PRICE)

Write SQL for the following.

(a) Retrieve the names of shop owners who supply some item to the address C_133, Karol Bagh, New Delhi.

(b) Retrieve the name & address of customer who has been supplied items of maximum total value.

(c) Retrieve the names of customers who requires the items which have not been supplied. List both the customers and the items.

(d) List the names of shops who has at least 50 items on their stock.

(e) List the shops which stock required items of some customers but supply none.
