

PGDCA / MCA (I Year)

Term-End Examination

June, 2011

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) Consider a database that contains information about person and skills. At a particular time, the following persons are represented in the database, and their skills are as indicated.

Person	Skill
Vivek	Programming
Aditi	DEO and Programming
Vinay	DEO, Programming, H/W Maintenance
Akash	DEO and H/W Maintenance

For each person the database contains various personal details such as Date of birth, father's name, address email address, telephone no and educational qualifications.

For each skill it contains an identification of the appropriate basic training course, an associated job grade code and other information. Also the database contains the date each person attended each course.

- (i) Identify the entities and the relationships among them. Draw an ERD for the above specifications. 5
 - (ii) Design a Relational structure for this data. 5
 - (iii) Design a Network structure for this data. 5
 - (b) Explain the concept of clustering and secondary indexes with the help of an example. 8
 - (c) Explain the concept of frame-based Representation with the help of an example showing the frames and facets/slots. 7
2. (a) Consider the following Relations : 8
- EMPLOYEE (EMPLOYEE - NAME, STREET, CITY)
- WORKS (EMPLOYEE - NAME, COMPANY - NAME, SALARY)
- Write the SQL statements for the following :
- (i) Find the street and city of all the employees who works in "CICIP Bank".

- (ii) Find the Company Name of all the employees who have salary greater than Rs. 10,000.
- (iii) Find the names of all the Employees who do not work for "ABC Enterprises".
- (iv) Find all the employees-names who works in the PATEL-MARG street of MUMBAI.
- (b) Explain the difference between Cartesian Product and Natural Join Operations with illustrations for each. 7
3. (a) How do you implement a hierarchical data model ? Explain through an illustration. 7
- (b) Explain the concept of Semantic Net with the help of an example which should contain both the one-way link representation as well as the representation of a reverse-link. 8
4. (a) Explain the role of API, RPC and dynamic data exchange (DDE) in the communication process between the heterogenous databases. 7
- (b) Discuss a "B-Tree" with the help of an example. Also, mention its properties. 8

5. Write short notes on the following : 5x3=15
- (a) OODBMS and multimedia databases.
 - (b) Distributed database design.
 - (c) Multilist file organization.
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