Nepal college of information echnology

Assessment

|  |  |  |  |
| --- | --- | --- | --- |
| Level: Bachelor | Semester – Spring | Year : 2013 | |
| Programme: BE-CE-IV | | Full Marks : 100 | |
| Course: Database Management Systems | | Time : 3hrs. | |
| *Candidates are required to give their answers in their own words as far as practicable.* | | |
| *The figures in the margin indicate full marks.* | | |
| Attempt all the questions. | | |

1. a. Give arguments to show how DBMS is more suitable than file processing system. Also mention the disadvantages of DBMS. 8

b. Describe three levels of data abstraction in DBMS. Also describe physical and logical data independence. 7

2. a. Discuss the importance of data normalisation in database design. Also illustrate the process of normalisation (up to 3NF) with an appropriate example. 8

b) How does a logical design of database distinguish with physical design? Draw an ER diagram to design automated restaurant. (consider all required attributes and entities) 7

3. a. When a view can be used in database? Explain the view update operation in brief. 8

b) Name different users of database. Explain the roles and responsibilities of the DBA. 7

4. a. Consider the relational database. (3+3+2)

Employee(Empno, Name, Address)

Project (Pno, Pname)

Workon(Empno, Pno)

The primary key are underlined

Now write the SQL command for the following:

i) Give an SQL DDL definition to create Employee, Project and Workon table (assume your own data types for attributes)

ii) Insert a new record into each tables.

iii) Write sql code to retrieve the name of the employee who are working on a project named “DBMS”.

b) Define the database schema. Explain primary key, candidate key and foreign key. 7

5. a. What do you mean by transaction? What are different transaction states? Describe ACID properties of transaction in brief. 8

b. What do you mean by recovery? Discuss different types of recovery methods. 7

6. a. What are different levels of securities in DBMS? Differentiate between public and private key encryption method. 8

b. What are different file systems used in DBMS. Describe hash algorithm for hash file system. 7

7. Write short notes on (Any two) 2\*5=10

a. Distributed Database

b. Serialization

c. Two-Phase Commit Protocol