TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean

Full Marks: 40
Time: 2 hrs.

BIM / Fourth Semester / IT 220: Database Management System

2015

Candidates are required to answer all the questions in their own words as far as practicable.

Group "A"

Brief Answer Questions: ***[10 × 1 = 10]***

1. Differentiate between generalization and specialization.
2. List any four advantages of relational DBMS.
3. Define one to one relationship.
4. Write SQL syntax to create a VIEW.
5. Why is GROUP BY clause used?
6. What is delete anomaly?
7. Write functions of storage manager.
8. Why is domain constraints required?
9. What is isolated transaction?
10. What is serializability?

Group "B"

Exercise Problems: ***[5 × 4 = 20]***

11. Write down the SQL statements to create following tables(assume appropriate data types) :

    Customers(**customerID,** customerName, phone, date_of_birth)
    Orders(**orderID**, orderDate, deliveryDate, **customerID(FK)**)
    Payments (**paymentID**, paidDate, amount, **orderID(FK)**)

12. Consider the following relations and write the SQL statements to :

    Customers(**customerID,** customerName, phone, date_of_birth)
    Orders(**orderID**, orderDate, deliveryDate, **customerID(FK)**)
    Payments (**paymentID**, paidDate, amount, **orderID(FK)**)

    a. Find the total amount paid by each customer.
    b. Find the list of those customers who has not made any orders till date.

13. Normalize following table:

    Product_details

Pid	Pname	Price	mid	Mname	Address	Phone
1	ABC	1000	101	EFG	Ktm, Bkt	4412
2	XYZ	2000	101	EFG	Bkt	4561
1	ABC	3000	102	MNP	Ltp, Ktm	2341
3	ABC	1000	105	LBD	Brt, Bkt	2169
4	XYZ	1000	105	LBD	Ktm	6635

14. Write algorithm to find closure of attribute sets.

15. Design ER model of a database for a world-wide package delivery company (e.g., DHL or Fed EX). The database must be able to keep track of customers (who ship items) and customers (who receive items); some customers may do both. It is known that every order has a one-time payment. Choose appropriate attributes and list all assumptions made (if any).

Group "C"

Comprehensive Answer Questions: *[2 × 5 = 10]*

16. List functions of concurrency control manager. Explain shadow paging algorithm of database recovery technique.

17. Identify and explain database users.