XAVIER INSTITUTE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY

QUESTION BANK 2 (Chapter 4, 5, 6)

Subject: DBMS Date: 18th September 18
Class/Semester: SE/III

(Chapter 4) (CO3) [5M each]

1. What is the view in SQL, how it is defined? Discuss the problem that may arise when we attempt to update a view. How views are implemented? (Jun-15, 10M) (BTL-4)
2. Write a note on views in SQL. (Dec-15, 5M) (BTL-4)
3. What is view? How it is created and stored? (Jun-16, 10M) (BTL-4)
4. Explain aggregate function with example. (Jun-16, 5M) (BTL-3)
5. Explain Group by clause. (Jun-16, 2M) (BTL-3)
6. Describe view and Trigger. (May-17, 5M) (BTL-4)
7. Explain Recursive queries and Nested queries. (Dec-17, 5M) (BTL-3)
8. Write a short note on: cursors and its types. (Dec-17, 5M)
9. Explain DML and DDL commands with syntax. (May-17, 10M) (BTL-2)
10. Write a short note on: DCL commands (Dec-17, 5M) (BTL-2)
11. Explain the difference between stored procedure and functions in SQL. (Dec-17, 10M) (BTL-4)
12. Consider the following education database.
    Course (course_no, title)
    Offering (course_no, off_no, off_date, location)
    Teacher (course_no, off_no, emp_no)
    Enrolment (course_no, off_no, stud_no, grade)
    Employee (emp_no, emp_name, job)
    Student (stud_no, stud_name,ph_no)
    Write SQL queries for the following statements. (BTL-3)
    i. List all the teachers who conduct the course titled "Database Systems". (Dec-15, 2.5M)
    ii. List all the courses offered in 'Thane' on 15/8/15. (Dec-15, 2.5M)
    iii. Find the course/s enrolled by "Monali". (Dec-15, 2.5M)
    iv. List all the employees who work as a teacher. (Dec-15, 2.5M)

13. Consider the following employee database. (Dec-13, 10M) (BTL-3)
    Employee (empname, street, city, date_of_joining)
    Works (empname, company_name,salary)
    Company (company_name, city)
    Manages (empname, manager_name)
    Write SQL queries for the following statements.
    i. Modify the database so that 'John' now lives in 'Mumbai'. (Dec-13, 2.5M) (Jun-15, 2M) (Jun-16, 2M) (Dec-17, 2.5M)
    ii. Find all employees who joined in the month of October. (Jun-15, 2M) (Jun-16, 2M)

iii. Give all employees of 'ABC Corporation' a 10% raise. (Dec-13, 2.5M) (Jun-16, 2M)
iv. List all employees who live in the same cities as their managers. (Dec-13, 2.5M) (Jun-15, 2M)
v. Find all employees who earn more than average salary of all employees of their company. (Dec-13, 2.5M) (Jun-15, 2M) (Jun-16, 2M)
vi. Give all employees of XYZ Corporation a 15 percent raise. (Jun-15, 2M)
vii. List all employees who live in the same cities as their company city. (Jun-16, 2M)
viii. Find number of employees in each city with date_of_joining as "01-Aug-2017" (Dec-17, 2.5M)
ix. List name of companies starting with letter "A". (Dec-17, 2.5M)
x. Display empname, manager_name, street, city only for employees having manager. (Dec-17, 2.5M)

14. Consider the following relations for a book club:- (Jun-14, 10M) (BTL-3)
Members (Member_Id, Name, Designation, Age)
Books (Book_Id, Booktitle, BookAuthor, Bookpublisher, Bookprice)
Reserves (Member_Id, Book_Id, Date)
Write SQL queries for the following statements:-
i. Find the names of members who are professor older than 50 years.
ii. List the titles of books reserved by professors.
iii. Find ids of members who have reserved books that cost more than rs. 500.
iv. Find the authors and titles of books reserved on 20-09-2012.

15. Consider Insurance Database given below and answer the following queries in SQL. (Dec-14, 10M) (BTL-3)
Person (driver_id, name , address)
Car (license, model, year)
Accident (report_no, adate, location)
Owns (driver_id, license)
Participated (driver_id, license, report_no, damage_amount)
1. Find total number of people who owned cars that are involved in accidents in 2004.
2. Find the number of accidents in which car belonging to 'John Smith' were involved.
3. Add new accident to database.
4. Delete 'Santro' belonging to 'John Smith'.

16. Employees (Empid, Fname, Lname, Email, Phoneno, Hiredate, Jobid, Salary, Mid, Did)
Departments (Did, Dname, Managerid, Locationid)
Locations (Locationid, Streetadd, Postalcode, City)
Write the SQL queries for the following: (may-17, 10M) (BTL-3)
i. List the employees have a manager who works for a department based in the US.
ii. Write a query to display the details of all employees in the finance department.
iii. Give 10% hike to al the Employee working in Did 20.

iv. Write a query to display the information of the employees whose salary is within the range 1000 and 3000.
v. Display the information of the employees whose first name starts with 'R' in descending order of their salary.

17. Explain different integrity constraints. (Dec-13, 10M) (BTL-2)
18. What are triggers? Explain with example. (Dec-14, 10M) (BTL-4)
19. Discuss what is meant by each of the following terms (any 2) (Dec-15, 10M)(BTL-4)
    a. Database Authorization
    b. Referential Integrity
    c. Trigger

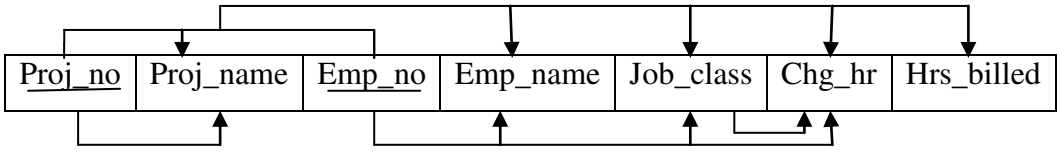
(Chapter 5) (CO4) [5M each]

1. Define normalization? Explain 1NF, 2NF, 3NF and BCNF. (BTL-2)
2. Define normalization? Explain 1NF, 2NF, 3NF with example.(Jun-16, 10M) (BTL-2)
3. Explain need of Normalization along with all the normal forms. (Dec-17, 10M) (BTL-2)
4. Describe BCNF and 4NF in detail. (Dec-15, 10M) (BTL-2)
5. Define functional dependency. (BTL-2)
6. Suppose that we decompose the schema
   R= {A, B, C, E} into
   R1= {A, B, C} and
   R2= {A, D, E}

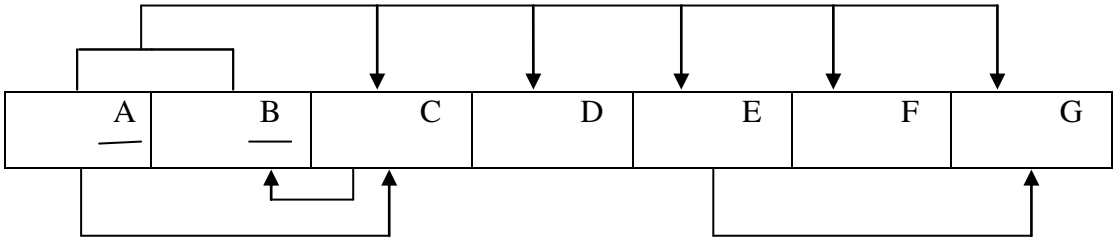
   Show that this decomposition is lossless join decomposition if the following set of functional dependencies hold (Dec-14, 5M) (BTL-3)
   $A \rightarrow BC$ $CD \rightarrow E$
   $B \rightarrow D$ $E \rightarrow A$

7. Consider the following relation
   Car_sale (car#, date_sold, salesman#, commission%, discount_amt)
   Assume that {car#, salesman#} is the primary key. Additional dependencies are
   Date_sold → discount_amt
   Salesman# → commission%
   Based on the given primary key, is this relation in 1NF, 2NF or 3NF? Why or why not? How would you successively normalize it completely? (Dec-14, 10M) (BTL-5)

8. Consider a dependency diagram of relation R and normalize it up to third normal form. (Jun-14, 10M) (BTL-3)

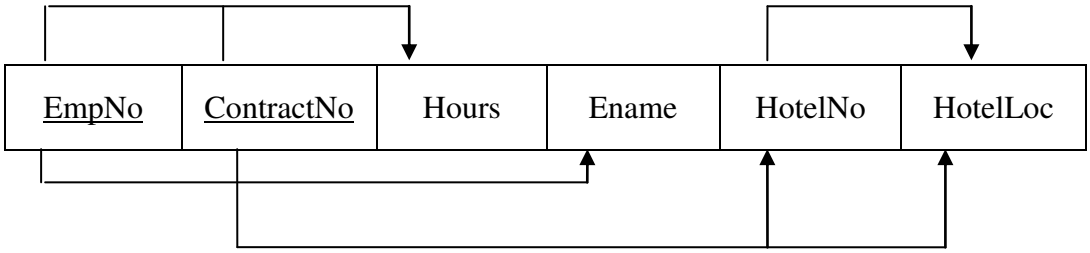


9. Consider a dependency diagram of relation R and normalize it up to third normal form. (Dec-13, 10M) (Jun-15, 10M). or Consider a dependency diagram of relation R and normalize it up to BCNF normal form. (Dec-17, 10M) (BTL-3)



10. Let R1=(company_code, company_name, director #, director_name, {product_name, cost, {cust#,customer_name, address}}) where {} represents a repeating groups. Normalize the above relation to third normal form. (BTL-3)

11. Consider the following dependency diagram of relation R and Normalize till 3NF. (May-17, 10M) (BTL-3)



12. What is closure set of functional dependency? (BTL-2)

13. List all functional dependencies satisfied by the relation. (Dec-13, 5M) (Jun-15, 5M) (BTL-3)

A	B	C
a1	b1	c1
a1	b1	c2
a2	b1	c1
a2	b1	c3

14. List all functional dependencies satisfied by the relation. (Jun-16, 5M) (BTL-3)

X	Y	Z
X1	Y1	Z1
X1	Y2	Z1
X2	Y2	Z1
X2	Y2	Z1

15. Consider the following relation: (Jun-14,10M) (BTL-3)

A	B	C	Tuple#
10	b1	c1	#1
10	b2	c2	#2
11	b4	c1	#3
12	b3	c4	#4
13	b1	c1	#5
14	b3	c4	#6

Given the previous state which of the following dependencies may hold in the above relation? If the dependency cannot hold explain why by specifying the tuples that cause the violation:

i) A → B
ii) B → C
iii) C → B
iv) B → A
v) C → A

(Chapter 6) (CO5) [5M each]

1. Explain different indexing types in database management system.(Dec-17, 10M) (BTL-2)
2. Write a short note on: Hashing techniques. (Dec-17, 5M) (BTL-2)
3. Describe various types of records in file. (BTL-2)
4. Explain file organization in detail. (BTL-2)
5. What is system catalog or metadata? Explain. (Dec-15, 5M) (BTL-2)
6. Explain concept of hashing and its types. (BTL-2)
7. Explain index with example. (BTL-2)
8. Explain concept of single level ordered index. (BTL-2)
9. Explain multilevel index with example. (BTL-2)
10. Explain concept of B trees and B + trees. (BTL-2)
11. Give and explain one example of B tree. (BTL-2)
12. Give and explain one example of B + tree. (BTL-2)

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