

JK LAKSHMIPAT UNIVERSITY, JAIPUR
INSTITUTE OF ENGINEERING AND TECHNOLOGY

Retest Examination, February 2022
BCA- Semester I

Roll No.

COURSE CODE: CS1116

Time: 1.5 hours

COURSE TITLE: Database Management and Applications

Max. Marks: 30

Q.1 a) An organization has employees and departments. Employees are recruited and posted in various departments. The departments are headed by their heads, who are also the employees of the organization. The service record of the employee kept with the human resource department of the organization maintains personnel information of employee like name, personal-id, salary, date of joining, date of birth, salary, skill, qualifications, blood group etc. The HR department also keep the statistics of various departments that exists in the organization. The higher authority decides to post the employees in the departments. With the help of suitable assumption draw an ER model representing entities, relationships, attributes and cardinalities.

b) Which is stronger normal form BCNF or 3NF. Justify with the help of suitable example.
(6+4) marks

Q.2 a) Write a SQL queries for the following schemas:-

Salesman(salesman_id, name, city, commission)

Customer(customer_id, name, city, grade, salesman_id)

Orders(order_id, purch_amt, ord_date, customer_id, salesman_id)

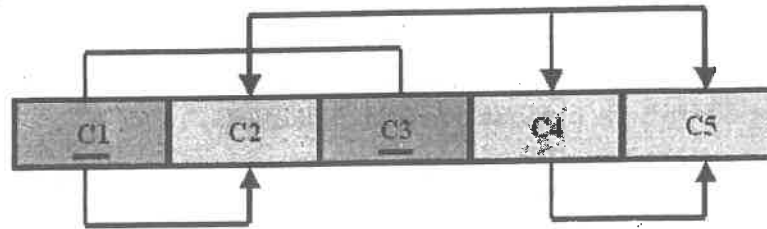
- i. Write a SQL query to find the salespersons and customers who live in same city. Return customer name, salesperson name and salesperson city.
 - ii. Write a SQL query to find all the customers along with the salesperson who works for them. Return customer name, and salesperson name.
 - iii. Write a SQL query to find those sales people who generated orders for their customers but not located in the same city. Return ord_no, cust_name, customer_id (orders table), salesman_id (orders table).
- b) With the help of suitable example, explain the concept of integrity constraints. How the concept of primary key, foreign key helps in defining integrity constraints.
(6+4) marks

Q.3 a) Examine the table shown below.

staffNo	branchNo	branchAddress	name	position	hoursPerWeek
S4555	B002	City Center Plaza, Seattle, WA 98122	Ellen Layman	Assistant	16
S4555	B004	16 - 14th Avenue, Seattle, WA 98128	Ellen Layman	Assistant	9
S4612	B002	City Center Plaza, Seattle, WA 98122	Dave Sinclair	Assistant	14
S4612	B004	16 - 14th Avenue, Seattle, WA 98128	Dave Sinclair	Assistant	10

- Why is this table not in 2NF?
- Describe and illustrate the process of normalizing the data shown in this table to third normal form (3NF).
- Identify the primary, (alternate) and foreign keys in your 3NF relations.

b) Given the dependency diagram shown in the following Figure, answer the following questions:



Identify and discuss each of the indicated dependencies in the figure.

(6+4) marks