# United International University (UIU)

## Dept. of Computer Science & Engineering (CSE)

Mid Term Exam, Trimester: Fall 2022
Course Code: CSE-3521, Course Title: Database Management Systems
Total Marks: 30, Duration: 1 hour 45 minutes

**Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules.**

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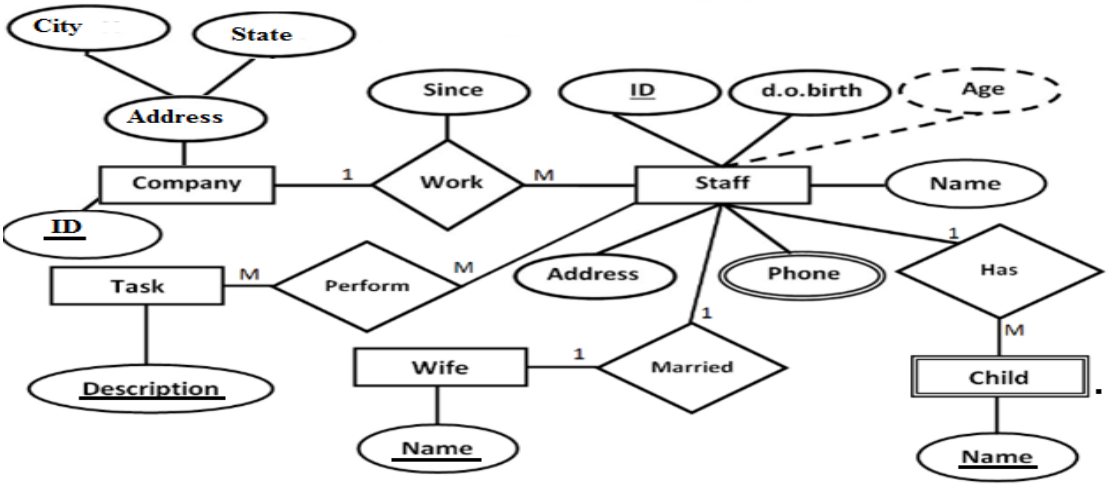
|---|---|---|
| 1. | a) "We can have multiple super keys and candidate keys for a table, however the primary key can be only one for a specific relation" . Do you agree with this statement? If yes, justify your answer.<br><br>b) Consider the scenario for Online Inventory sales management system:<br><br>A salesperson may manage many other salespeople. A salesperson is managed by only one salespeople. Salesperson is having an unique ID, name, and can have multiple projects in their work. A salespeople only have item details. A salesperson can be an agent for many customers. A customer is managed by one salespeople. Customers have an ID, name, address and phone number. No customer with the same phone number will be accepted. A customer can place many orders. An order can be placed by one customer. An order lists many inventory items. Order is having an order ID which is unique, amount and payment method. An inventory item may be listed on many orders. Many salesperson assemble an inventory item.<br><br>Design an ER diagram for the scenario. | 2+8 |
| 2. | Draw the corresponding schema of the ER diagram given below.<br>  <br><br>Figure 1: Entity Relationship Diagram of a Company. | 6 |

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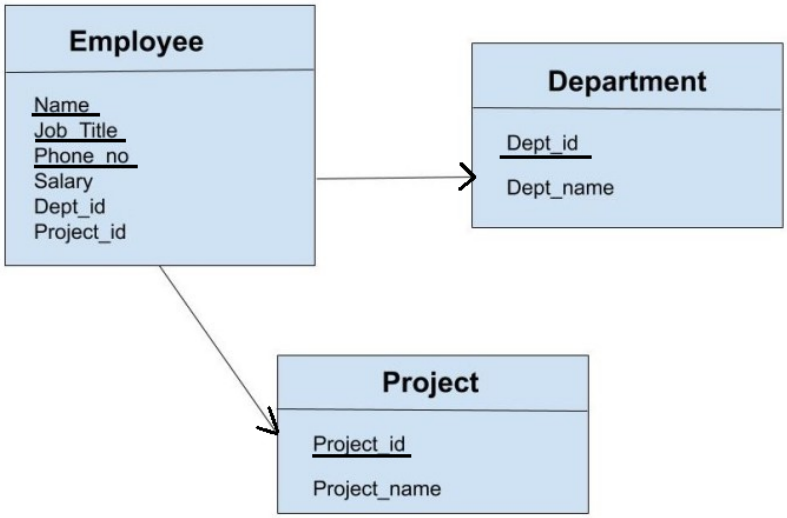
|---|---|---|
| 3. | a) Write down the difference between “where” and “having” clause in SQL.<br>b) Suppose a database for the following table has already been created. Now write the sql command to add two foreign keys in the appointment table from patient and doctor table.<br>**Patient** ( ID, name, address, phone)<br>**Doctor** ( name, designation, location, chamber_address, fee)<br>**Appointment**( date, serial_number, payment)<br><br>c) Use the following schema to answer the queries (I-III)<br>  <br><br>I. Show the full name of those employees whose salary is greater than 20000 but not more than 50000 and also working as manager.<br>II. Write a query to find out the 3rd, 4th and 5th maximum salary holder name along with their department name where the project ID is having an odd digit as 2nd last character.<br>III. Find out the project name where we have employees having average salary greater than 15000 and having at least one phone number and having “ts” in their name. | 2+2<br>+6 |
| 4 | Consider the following relations for question (a) and (b):<br>**Book_details**<br>Name \| ID \| year \| type \| Publisher_id<br>ABC \| 1532 \| 1997 \| comedy \| 45<br>YTD \| 5637 \| 2000 \| Horror \| 62<br>WKH \| 7594 \| 1885 \| Drama \| 62<br><br>**Publisher** | 2+2 |

| ID | Name | location |
|---|---|---|
| 45 | OUYG | Sylhet |
| 62 | DHJK | Chittagong |
| 87 | OUYT | Dhaka |

a)

I. Write relational algebra for the following query:
Show all the book information except the year of publication along with publisher name where the publisher has some location and ID is greater than 50.

II. Show the output relation:
∏publisher.ID, Book.name, year ( ( (σ year<2000 (Book) ) X ( σ location = chittagong (Publisher) ) )