RDBMS

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Q1] A] σ (company-name = "state bank of India") (works)

B] $\Pi_{\text{person-name}}$ [σ (company-name = 'Bank of Baroda') $\wedge$ (salary > 50000) (works)]

C] $\Pi_{\text{lives[person-name, lives[city]}}$ (σ (company name = 'Punjab National Bank') $\wedge$ (salary > 50231) $\wedge$ (lives[person-name] = works[person name]) (lives x work)

D] $\Pi_{\text{lives[person-name]}}$ (σ (located-in[company name] = works[company-name]) $\wedge$ (located-in[city] = lives[city] $\wedge$ (lives[person-name] = works[person name]) (works x lives x located-in)

E] SELECT E1. person-name
FROM lives AS e1, lives AS e2, manages AS M
WHERE
e1. person-name = m. person-name and
m. manager-name = e2. person-name and
e1. street = e2. street and
e1. city = e2. street.

F] SELECT Works. person-name
FROM WORKS
WHERE Works. company-name != "Canara Bank".

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G] SELECT lines.person-name
FROM lines AS L, WORKS AS W
WHERE L.city = "Mathera" and W.company-name
= "Yes Bank".

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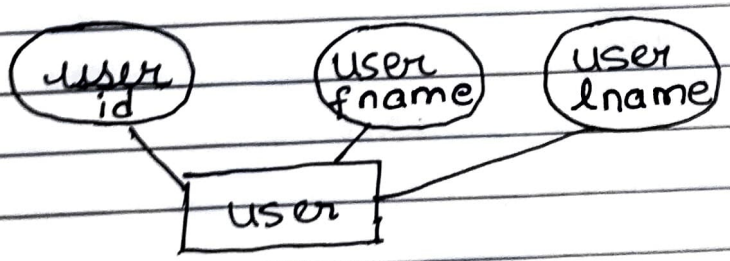
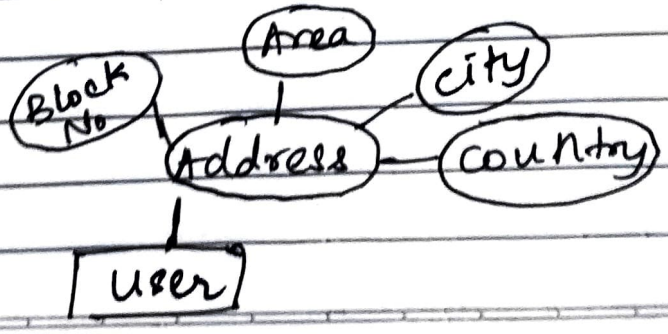
Q.2(A) What is an attribute? Explain different types of attribute with examples

Ans: Attributes are descriptive properties owned by each entity of an entity set. They basically are a property of an entity set.
An entity may contain n number of attributes.
There are various types of attributes.
They are as follows :

(i) Simple Attribute
→ Simple Attributes are those attributes which can not be further divided.
Ex :



(ii) Composed Attributes
→ Composed Attributes are those attributes which consist of various simple attributes
Ex.



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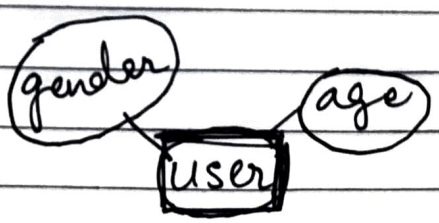
(iii) Single Valued Attributes :
→ These attributes can take only one value for a given entity.

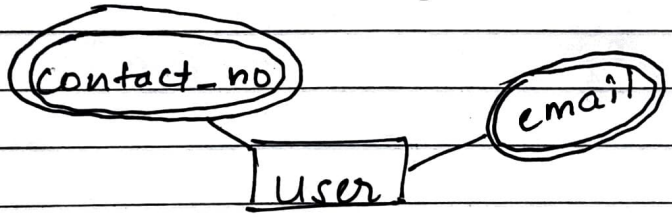
Ex :



{ Here, gender and age can take only single entry

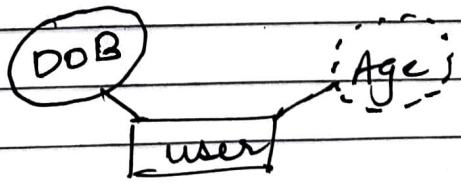
(iv) Multivalued Attributes
→ These attributes can take more than one value for a given entity

Ex :



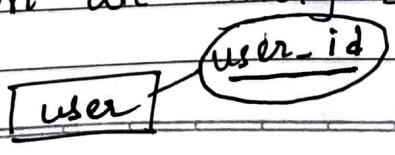
{ As one user can have more than one email id and ph. no.

(v) Derived Attributes
→ These Attributes are derived from other attributes
Ex : Age can be derived from Date of Birth



{ Here Age is Derived from DOB

(vi) Key Attributes
→ These Attributes can identify an entity uniquely in an entity set
Ex :



{ Here, user_id is unique for each user

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Q2) B) What is views in SQL?

Ans → View is a single table that contains rows and columns, derived from other base tables or already defined views.

→ Views is basically a virtual table which doesnot physically exist; however it is created using SQL statements.

→ It is used to hide complexity of query from user.

→ In SQL, views are defined using the command CREATE VIEW. The view is given a view name, a list of attribute names and a query to specify the contents of view.

Ex:- CREATE VIEW viewname AS
SELECT COLUMN 1, COLUMN 2
FROM TABLENAME
WHERE COLUMN NAME = SOME CONDITION;

→ Updating of views is complicated and can lead to ambiguity because in general, update on a view defined on a single table without any aggregate function can be mapped to an update on the underlying base table

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→ On the other hand, for some view involving joins, an update operation may be mapped to update operations on the underlying base relation in multiple ways. As a result, DBMS can not determine which of the update is necessary.

→ Whenever, an ~~view~~ update on the view is mapped to more than one update on the underlying base table then certain procedure should be carried out for knowing, which update is the most likely one.

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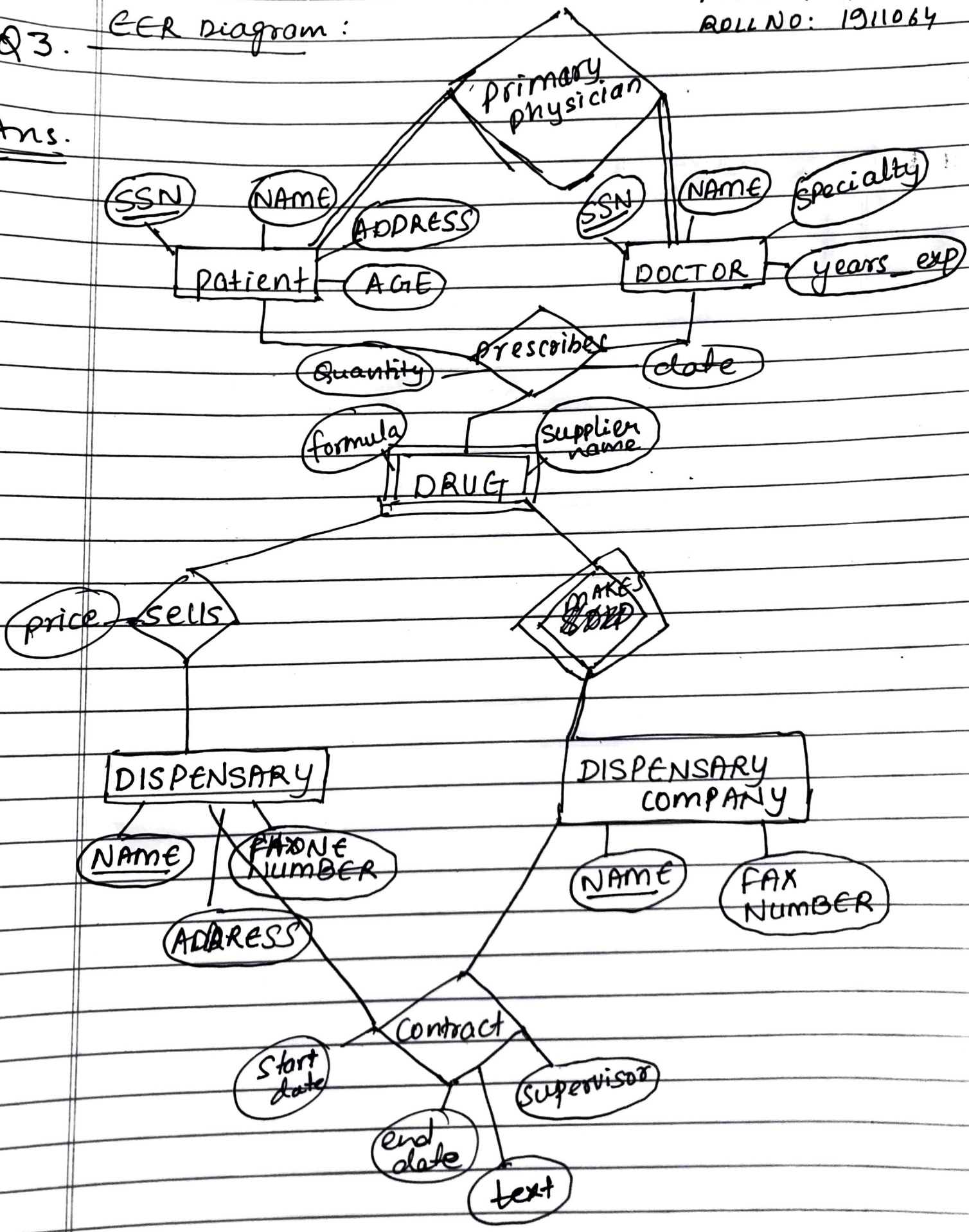
Q3. — ER Diagram :

Ans.



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Relational Model :