

ID#14974

---

## DATABASE SYSTEM THEORY

SALMAN KHAN

ID#14974

SEMESTER 4<sup>th</sup>

PROGRAM BS (cs)

**Q1: Which attributes in the following table is a candidate key? Assume that no more data will ever be added to this table.**

**Ans:**

**Candidate key;** The minimal set of attributes which can uniquely identify a tuple is known as candidate key.

For example, STUD\_NO in STUDENT relation.

The value of the candidate key is unique and non-null for every tuple ... For example, {STUD\_NO, COURSE\_NO} is a composite candidate key for relation STUDENT\_COURSE. Therefore, ID and Cell are candidate keys

---

## Q2: What is data redundancy and data integrity?

**Ans:**

**Data Redundancy:** is defined, the storing of the same data in multiple locations. This redundancy leads to higher storage and access cost. In addition, it may lead to data inconsistency.

**Data Integrity:**

It refers to the accuracy and consistency of data over its lifecycle. Every time data is processed there is a risk that it can get corrupted so maintaining data integrity means make sure the data remains intact and unchanged.

## Q3: How a multivalued composite attribute is represented in a conceptual model .Show with example?

**Ans:**A multivalued attribute can have more than one value at a time for an attribute .For example, the skills of a surgeon is a

---

multivalued attribute since a surgeon can have more than one skills. Another common example is the address field, which can have multiple values like zip code, street address, state, etc.

## EMPLOYEE

{Employee\_address (house no, city, state,postal\_code)}

**Q4: How is there 'reduced maintenance' in database approach?**

**Ans:**

It is one of the advantages of database approach that stored data can be changed frequently for variety of reasons, the system will provide modification to a data without modifying the program and it's also provides us a way to reduce the maintenance of the program.

**Q5: how are the following represented using ER diagram**

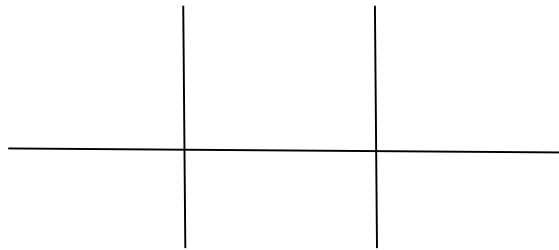
**Mandatory one, mandatory many, optional one, optional many?**



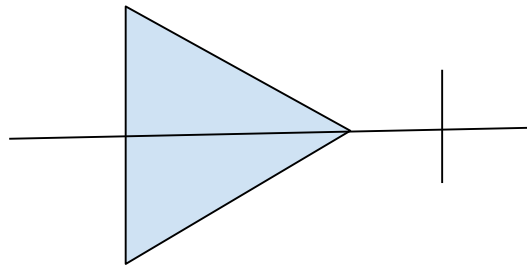
**ANS:**

/

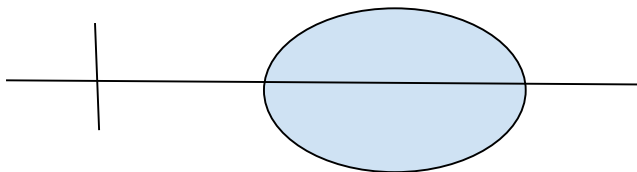
MANDATORY ONE

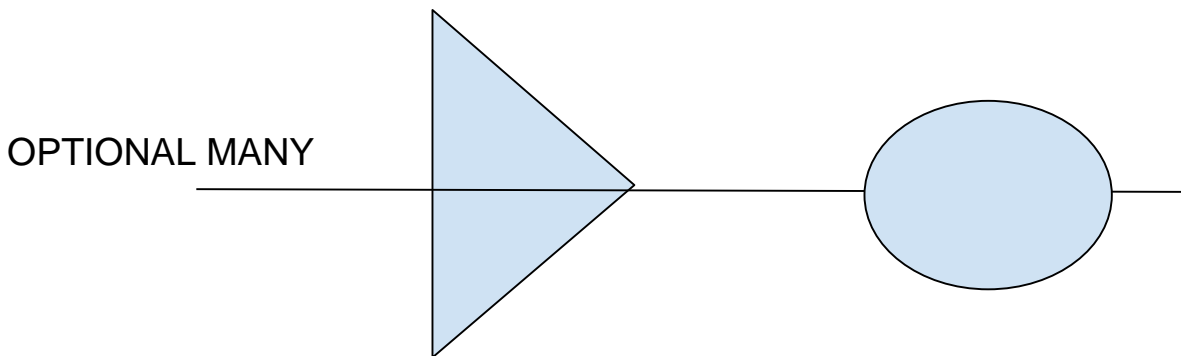


MANDATORY MANY



OPTIONAL ONE





**Q6: Why is there an explicit need of backup in database approach?**

**Ans:**

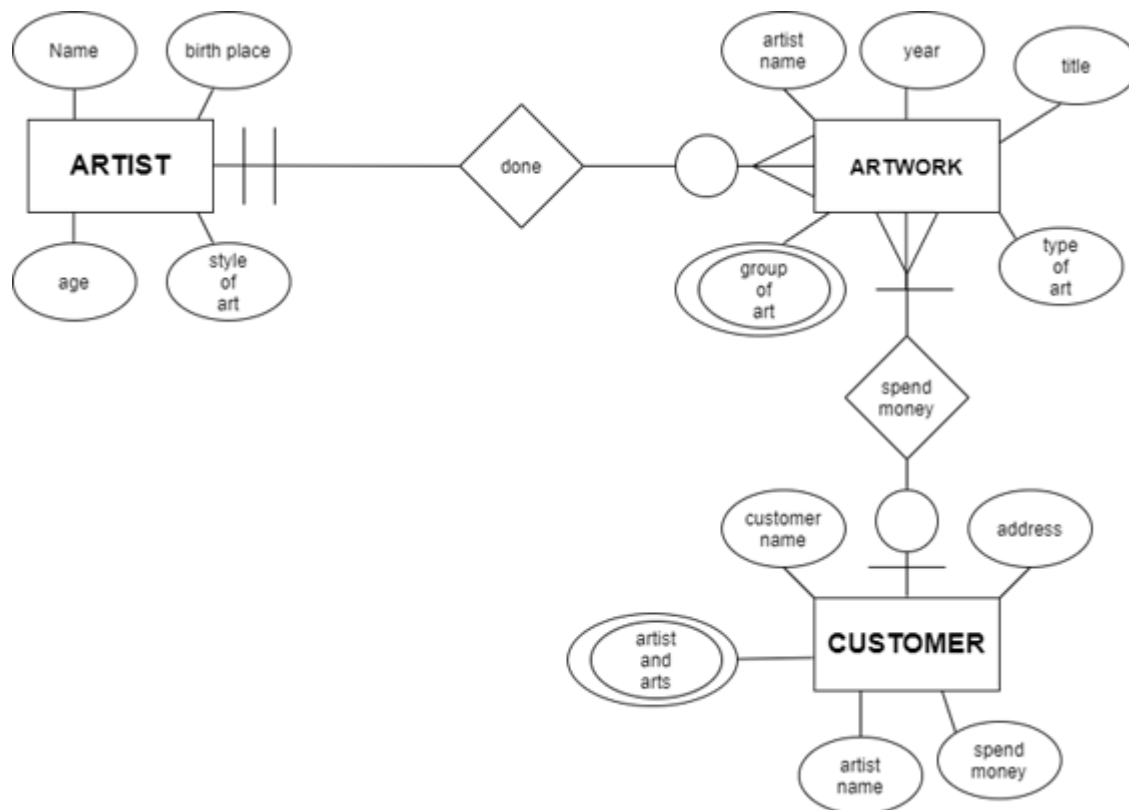
Because for a centralized shared database to be accurate and available all times, a comprehensive procedure is required to be developed and used for providing backup copies of data and for restoring a database when damage occurs.

ID#14974

Q 2; Draw an ERD from the following business rules use proper notations for the type of attributes.

Ans:(a)

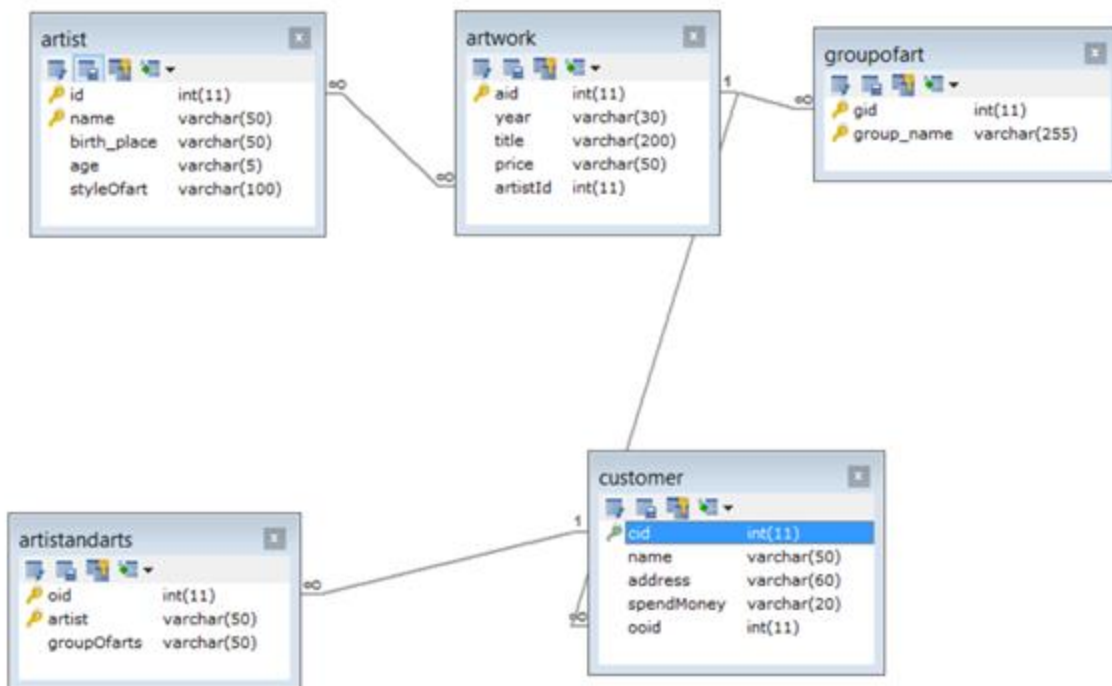
ERD



ID#14974

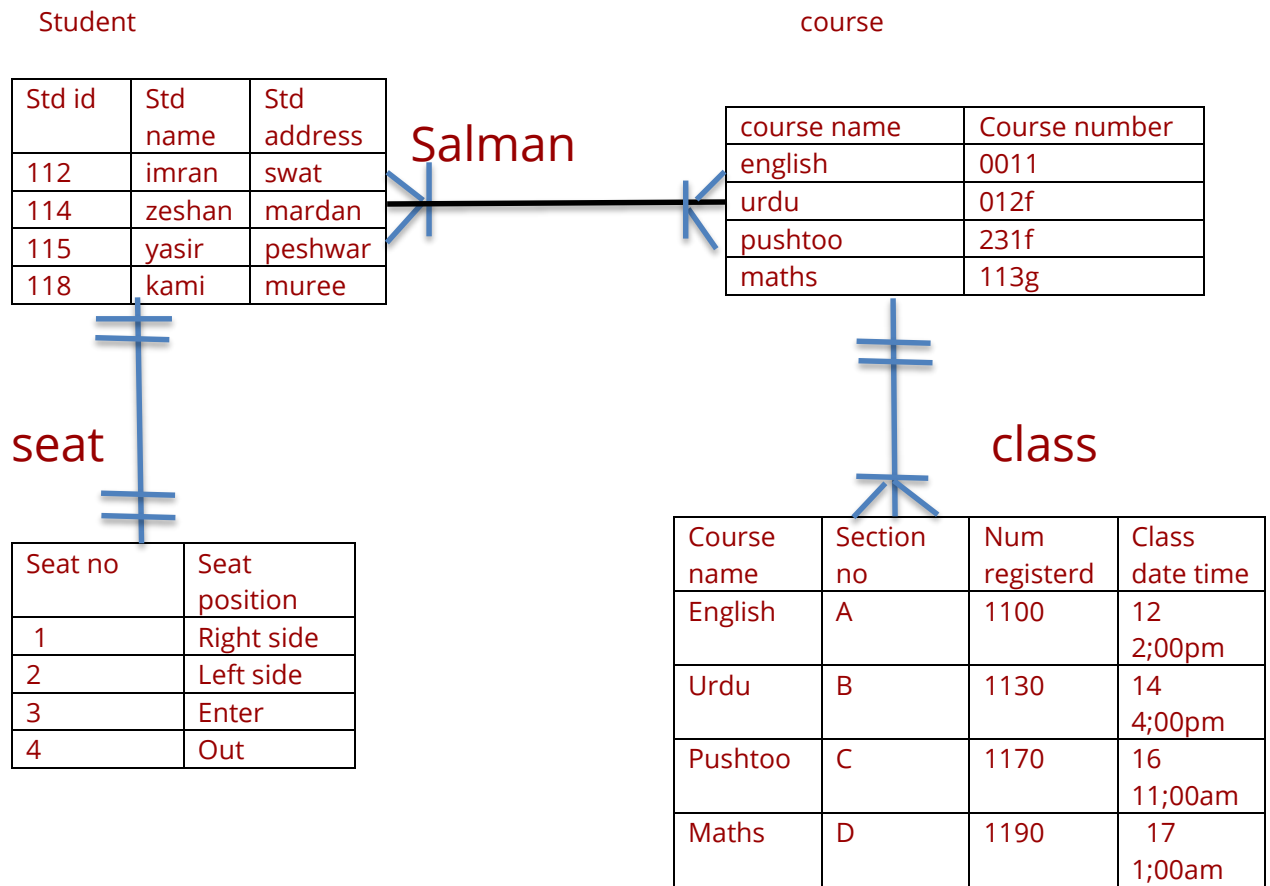
Ans:(b)

Schema:



Q3:

Ans:





ID#14974

