

Transaction Statement

Q.1 Which of the following is a sequence of SQL operations which are treated as a single unit of work:

Ans: b

Q.2. Which command performs the end of a successful transaction.

Ans: a

Q.3. You can roll back after performing the commit in MySQL.

Ans: b

Q.4. Suppose we have created a savepoint named Spt1, which of the following commands can be used to rollback the transactions executed after creating the savepoint :

Ans: c

Q.5. Which of the following is the query to apply Read Lock on table **Employees**.

Ans: a

Q.6. Choose the correct command to view the operations currently being performed by MySQL.

Ans: b

Q.7. Which of the following written queries will produce error when working in the same session.

Table: cricket(Id integer, Name varchar, Position varchar, Status integer)

Ans: a

Import / Export

Q.1. Out of the following, what data file can mysql workbench import data from?

1. csv
2. json
3. ORC
4. Protocol
5. Parquet

Ans: d

Q.2. Choose the correct query for importing data, from the following.

Ans: a

Q.3. Before exporting data, we must ensure that:

Ans: c

Q.4. Choose the correct query for Exporting data, from the following.

Ans: b

Normalization

Q.1. What is trivial functional dependency?

Ans: b

Q.2. The rule which states that addition of same attributes to the right side and left side will results in other valid dependency is classified as:

ANS:b

Q.3. A relation R has the following tuples:

Ans: c

Q.4. $R=\{A, B, C, D, E\}$ is the given schema, the FD's for the same are as follows:

$A \rightarrow B$

$A \rightarrow C$

$CD \rightarrow E$

$B \rightarrow D$

$E \rightarrow A$

Identify the illegal relation from the following.

Ans: d

Q.5. $R=\{A, B, C, D, E\}$ is the given schema, the FD's for the same are as follows:

$A \rightarrow B$

$A \rightarrow C$

$CD \rightarrow E$

$B \rightarrow D$

$E \rightarrow A$

Is the relation $CD \rightarrow AC$ legal one?

Ans: a

Q.6. A functional dependency of the form $A \rightarrow B$ is trivial if:

Ans: c

Q.7. Which of the following anomalies can a relation have if it contains data redundancies.

Ans: d

Q.8. Answer the following question with the help of above data. Keep in mind that an employee may be added to various clubs, but only one department.

While creating the database, the column "Clubs" was defined so that null values are not allowed.

A new intern is hired by the company. No departments or clubs are assigned to him beforehand.

What kind of anomaly might occur due to this restriction?

Ans: c

Q.9. Answer the following question with the help of above data. Keep in mind that an employee may be added to various clubs, but only one department.

If the club Fitness Freak is disbanded and the data is not handled properly, what anomaly might occur?

Ans: b

Q.10. Answer the following question with the help of above data. Keep in mind that an employee may be added to various clubs, but only one department.

Gaurav has recently decided to switch to the Tech Team and has put in an official request for department change. What anomaly might occur in the above database if the database manager doesn't realise the one to many relation between employee and clubs?

Ans: a

Q.11. Katherine was the assistant to the DBMS professor at her college. She was given a simple task of converting composite attributes into individual attributes for a table. What normalization is she performing?

Ans: a

Q.12. Which of the following is not required for a table to be in 1NF?

Ans: b

Q.13. Identify which Normal form it doesn't satisfy, and type answer as 3NF, 2NF... separated by commas.

Ans: 1NF

Q.14. For a relation to be in 2NF it has to:

Ans: d

Q.15. For a given table employee, assume an employee can work for multiple teams.

Ans: Non-prime: Emp_age (it is dependent on Emp_id)

Prime attributes: {Emp_id, Team}

Q.18. Which of the following dependencies leads to violation of 3NF.

Ans: c

Q.19. Identify the normal it violates. Also, give the ways to fix them.

Note: Write the normal form(s) comma separated and give the ways to fix them in bullet form from the next line.

Ans: Identify the normal it violates. Also, give the ways to fix them.

Note: Write the normal form(s) comma separated and give the ways to fix them in bullet form from the next line.

Q.20. Consider the following table Book_records with attributes (Book, Author, Genre) and the functional dependencies as:

(Book, Author) → Genre

(Book, Genre) → Author

Author → Genre

Also, the Candidate keys for the table are : (Book, Author) and (Book, Genre)

Ans: b

Transaction

Q.1. When dealing with transactions, any DBMS should be capable of ensuring:

Ans: d

Q.2. Which of the following is a part of ACID properties of transactions?

Ans: e

Q.3. If the system crashes just after the transaction is executed, we don't lose the changes made to the database due to:

Ans: c

Q.4. At which state is transaction considered permanent in the database?

Ans: b

Q.5. In case of any shut down during transaction before commit, which of the following statements is done automatically?

Ans: b

Q.6. If the checks by the database recovery system fails, then the transaction is in which state?

Ans: d

Q.7. The state in which the transaction is, while it's still executing is/are:

Ans: f

Q.8. When a transaction doesn't complete its execution successfully. We call it:

Ans: d

Indexing

Q.1. An index helps to speed up which operation?

Ans: c

Q.2. The index consists of

Ans: c

Q.3. Which of the following is true.

1. Sparse indices can be used only if the relation is stored in sorted order of the search key.
2. It is generally faster to locate a record if we have a dense index rather than a sparse index.

ANS: d

Q.4. Primary index is further divided into dense index and sparse index. Which of the following is true about both.

Ans: a

Q.7. Which of the following indexes is defined on an ordered data file and created on a non-key field?

Ans: d

Q.8 Which of the following will be considered as multi level indexing?

Ans: b

Q.9. Which of the following operations does indexing slows down.

1. DELETE
2. INSERT
3. SELECT
4. READ

Ans: c

Q.10. When the records of the main table are sorted on the basis of search key which is also the primary key, and so is the order of the index table, it's called :

Ans: a

NOSQL

Q.1. NoSQL databases are used usually for handling large volumes of _____ data.

Ans: c

Q.2. What is true for NoSQL database ?

Ans: b

Q.3. NoSQL stands for:

Ans: c

Q.4. NoSQL databases are often referred to as:

Ans: d

Q.5. Most NoSQL databases support automatic _____ meaning that you get high availability and disaster recovery.

Ans: c

Q.6. What do we call a phenomenon when we add more computational power to our existing machine?

Ans: b

Q.7. What are the advantages of NoSQL?

Ans: e

Q.8. What does RDBMS ensures but NoSQL doesn't ?

Ans: c

Q.9. Which of the following is usually not a feature in NoSQL?

Ans: b

Q.10. What are the disadvantages of NoSQL?

Ans: e

Q.11. Redis is a database type based on:

Ans: b

Q.12. Key-value NoSQL, is designed for managing:

Ans: d

Q.13. Key Value database should not be used, if there are:

Ans: a

Q.14. In what database, while recording the data, the timestamp of entering that data is also recorded.

Ans :c

Q.15. What is a unique identifier of the data in a columnar database?

Ans: a

Q.16. Which property of the columnar database makes it apt for a content management system.

Ans: d

Q.17. In Document based NoSQL database, data models contains:

Ans: b

Q.18. Which of the following implements ACID transactions:

Ans: d

Q.19. eBay has many of its projects running on MongoDB, which kind of database is being used?

Ans: c

Q.20. Which of the following databases contains edges and nodes?

Ans: d

Q.21. When we need to store a database of social websites like Facebook, what database should be used?

Ans: b

Q.22. Which of the following can be stored using graph-based NoSQL database?

Ans: a,b,c,d

Q.23. Out of the following, which is an apt reason to use an SQL database?

Ans: c

Q.24. Which of the following databases is ideal for being used for User's session data retrieval?

Ans: c

Q.25. Which situation from the following will be apt to use key-value stores?

Ans: b

Q.26. Which database is a smart choice for data warehousing and big data processing?

Ans: a

Q.27. Which of the following databases will be the best choice to maintain the Images data if required for any sort of project?

Ans: d

Q.28. Out of the following, for which situation a graph based database will be apt?

Ans: a

Database Type

Q.1. Choose the correct option to fill in the blanks.

Database _____ is the logical design of the database, and the database _____ is a snapshot of the data in the database at a given instant in time.

Ans: d

Q.2. Which of the following is TRUE regarding Referential Integrity?

Ans: b

Q.3. Which of the following is true concerning an OODBMS?

Ans: b

Q.4. Which of these is most like a hierarchical database?

Ans: b

Q.5. What is the basic relationship in a hierarchical database?

Ans: d

Q.6. Network models are complicated by physical keys, but the Relation model is :

Ans: a

Q.7. A network structure _____.

Ans: c

Database Optimization

Q.1. A transaction can proceed only after the concurrency control manager _____ the lock to the transaction.

Ans: c

Q.2. Which of the following concurrency control protocols ensure both conflict serializability and free from deadlock?

Ans: a

Q.3. Concurrency control in RDBMS is important for which of the following reasons ?

Ans: c

Q.4. Which of these is are in conflict?

Ans: d

Q.5. Which of the following Concurrency controls is prone to deadlocks.

Ans: b

Q.6. Which of the following is not an advantage of database clustering?

Ans: d

Q.7. Database uses _____ to support deployments with very large data sets by dividing the data over multiple servers.

Ans: b

Q.8. Partitioning of the database is usually committed when:

Ans: c

Q.9. Some of the columns of a relation are at different sites in which of the following techniques?

Ans: c

Q.10. A distributed database is which of the following?

Ans: d

Q.11. Which of the following is true about the process of sharding?

Ans: d

Sql Query Assement

Q.1 Write an SQL query to add a new column "*transaction_type*", for the **transactions** table.

Note: Datatype for transaction_type is VARCHAR(225).

Information about the tables:

Given below is a database of a newly established e-commerce website.

The database contains multiple tables i.e. products, orders, and transactions. The information about required tables is given below

Ans: ALTER TABLE transactions ADD COLUMN transaction_type VARCHAR(225);

DESC transactions;

Q.2. Create the customers table for this database.

The attributes and their respective datatypes are as follows:

Ans: CREATE TABLE customers (

customer_id VARCHAR(20) PRIMARY KEY,

customer_name VARCHAR(225),

phone_no INT,

city VARCHAR(200),

pin_code INT

);

DESC customers;

Q.3. Write an SQL query to print all the details of the products whose seller's name ends with 'n' and contains only seven alphabets.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, and transactions. The information about required tables is given below.

Ans: SELECT * FROM product WHERE seller LIKE '%n' AND LENGTH(seller) = 7;

Q.5. Write an SQL query to show only odd rows from the product table.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, and transactions. The information about required tables is given below

Ans: SELECT * FROM product WHERE item_id % 2 = 1;

Q.6 Make a Clone of the product table(with complete data) and name it to be giftList and print the table schema in ascending order of column name as well.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

ANs: CREATE TABLE giftList LIKE product;

```
INSERT INTO giftList SELECT * FROM product;
```

```
SELECT table_name, column_name, data_type
```

```
FROM information_schema.columns
```

```
WHERE table_name = 'giftList'
```

```
ORDER BY column_name ASC;
```

Q.7. Make a Clone of the **product** table(without data) and name it to be cloneListPro and print the table schema of the table cloneListPro.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: CREATE TABLE cloneListPro LIKE product;

```
SELECT table_name, column_name, data_type
```

```
FROM information_schema.columns
```

```
WHERE table_name = 'cloneListPro';
```

Q.9. Fetch out all the product details of the 7th most expensive product.

Information about the tables:

Given below is a database of a newly established e-commerce website.

The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

ANs: CREATE TABLE cloneListPro LIKE product;

```
SELECT table_name, column_name, data_type
```

```
FROM information_schema.columns
```

```
WHERE table_name = 'cloneListPro';
```

Q.10. Fetch the first 33% records from a product table.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

ANs: SELECT * FROM product ORDER BY price DESC LIMIT 6, 1;

Q.12. Fetch the first 33% records from a product table.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT * FROM product ORDER BY price DESC LIMIT 6, 1;

Q.14. What's the percentage of the products in stock with savings greater than 4000.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT (SELECT COUNT(*) FROM product WHERE youSave > 4000 AND

```
INSTOCK = 'Y') * 100 / (SELECT COUNT(*) FROM product WHERE  
INSTOCK = 'Y')
```

AS percentage

Q.15. Write a MySQL query to display the last 4 records from the product table.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: `SELECT * FROM product LIMIT 20, 4`

Q.16. Problem Statement:

Find the product id and seller name along with count of duplicate entries from the tables given below considering there is no primary key (item_id).

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: `SELECT product_id, seller, COUNT(*) FROM product GROUP BY product_id, seller`

`HAVING COUNT(*) > 1;`

Q.18. What is an Average total saving amount on the products sold by Maple store or Kukreja Telecom Store?

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: `SELECT AVG(TOTAL) FROM (SELECT product_id, SUM(youSave) AS TOTAL`

`FROM product GROUP BY product_id) AS TOTALS WHERE product_id IN`

`(SELECT product_id FROM product WHERE seller = 'Maple store'`
`OR`

```
seller = 'Kukreja Telecom Store');
```

Q.19. For each product, list down the min price of the product and the average percentage of savings available across all the sellers who sell more than one product.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT product_id, p_name, MIN(price),
(AVG(youSave)*100)/SUM(youSave) AS avgP

```
FROM product GROUP BY product_id, p_name HAVING  
COUNT(*)>1;
```

Q.20. Enlist all the customers_id and their name for all the products names.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT DISTINCT product.p_name, customer.customer_id,
customer.customer_name

```
FROM product INNER JOIN orders ON product.product_id =  
orders.product_id
```

```
INNER JOIN customer ON orders.customer_id =  
customer.customer_id;
```

Q.21. Get the product_id and the number of products ordered for each product_id.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT product_id, COUNT(product_id) FROM orders GROUP BY
product_id;

Q.22. Enlist the transaction_status for all products ordered.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT transactions.transaction_id FROM orders

```
LEFT JOIN transactions ON orders.transaction_id =  
transactions.transaction_id;
```

Q.23. List all the product names with their respective payment date and delivery date and sort the output table w.r.t to delivery date.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT distinct product.p_name, orders.payment_date,
orders.est_delivery_date

```
FROM product INNER JOIN orders ON product.product_id =  
orders.product_id
```

```
order by est_delivery_date;
```

Q.24. List all the not completed transaction_status for all order_id.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT o.order_id,o.product_id,o.customer_id,o.transaction_id
FROM orders o

```
LEFT JOIN transactions t ON o.transaction_id=t.transaction_id
```

```
WHERE t.transaction_status='not completed';
```

Q.25. List down the product names along with the details like the time the payment for the order was made and delivery date along with the

transaction status of that product by the customer and sort it according to their respective payment date.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT distinct product.p_name, orders.payment_date,
orders.est_delivery_date ,

transactions.transaction_status

FROM product INNER JOIN orders ON product.product_id =
orders.product_id

INNER JOIN transactions ON orders.transaction_id =
transactions.transaction_id

order by est_delivery_date;

Q.26. Enlist all orders for a customer with “d” in their name.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT customer.customer_name, orders.order_id FROM customer

INNER JOIN orders ON orders.customer_id = customer.customer_id

AND customer.customer_name LIKE '%d%';

Q.27. List total payments received from all customers of the e-commerce website.

Information about the tables:

Given below is a database of a newly established e-commerce website. The database contains multiple tables i.e. products, orders, transactions, and customers. The information about required tables is given below

Ans: SELECT customer.customer_id,SUM(orders.checkout_price) AS
totalpayment

```
FROM customer
```

```
LEFT JOIN orders ON customer.customer_id=orders.customer_id
```

```
GROUP BY customer_id;
```