Answer Script

Question No. 01
Why is composite key called composite primary key? Describe with proper explanation. **- 10**
Answer No. 01
Primary key is a combination of unique field to search for or do query in a database. By primary key we can identify a field uniquely in a database. For its unique identifying ability its called a primary key. And, Composite primary key is a combination of two or more primary key. Which means when its not possible to search or do query by single primary key in a database, then we need two or more primary key to identify any record. Because of using two or more primary key, its called composite primary key. Its composite primary key because here two or more primary key are being used so far. Thats why its not only composite key. Its composite primary key. A composite primary key consist of multiple primary key to identify a record and not a single primary key is enough for that. So its called composite primary key, meaning multiple primary key together.

Question No. 02
What is the benefit of using relational database over non-relational database? **- 10**
Answer No. 02
Here are some advantages of relational database over non-relational database: 1. **Efficiency and Performance:** There are primary key, foreign key etc to avoid pitfalls of data redundancy. So there is no risk of same data repetition or incomplete data. Here, relational databases are much more efficient.

2. **Structure and Organization:** Relational databases are written with SQL(Structured Query Language), which is why it's more structured and organized over non-relational databases obviously.

3. **Data Integrity and Consistency:** It supports ACID(Atomicity, Consistency, Isolation, Durability), a set of properties of relational database which gives guarantee on database a reliable database transaction.They ensure that transactions are run correctly, maintain data integrity, prevent interference between concurrent transactions. ACID is very essential in database where data consistency and reliability are critical, such as financial systems

4. **Relationships and Joins:** Relational databases makes easy relation with every entity in a database. Therefore every table connects other table where there is a relation effectively. This helps developer to handle complex dataset for the database in a simple way. It handles complex relationships between entities. Where non-relational database, this feature isn't available.

5. **Querying and Data Manipulation:** Its easier for relational databases compared to non-relational database to manipulate or change any data or record within the whole database. Because there are relations between entites, any changes are changed for all entities over the database. Where non-relational database, its not possible.

Question No. 03

Explain foreign key with proper examples. If foreign key didn't exist, what would be the problem? **- 10**

Answer No. 03

Foreign Key is a field where it creates a relation or link with another tables primary key in database. To implement database more efficiently, foreign key is a must. Without foreign key, there will be no actual relation which is the base of relational database. Foreign key makes a database less complex and easy to handle all the fields and records.

Example:

Student Table :

ROLL	CGPA

01	3.50
02	3.65
03	3.23

Library Table :

ROLL	Quantity of books borrowd
01	5
03	4
02	7

Here, the "ROLL" column in the "Library" table is a foreign key that references the primary key "ROLL" in the "Student" table. The foreign key establishes a link between the “Student” and “Library” tables.

Foreign key create a relation with primary key of another table, and for this reason there are less hassle to deal with the data. Data/records can be changed by only the foreign key which makes the database more powerful.

Without foreign key we will need to change or insert data/record in every table or entity separately, which is more complex and less efficient.

Moreover, without foreign key, there is high chances that the database have multiple pitfalls and many redundant data or record which is not a good practice. It wil cost more proccessing time and extra storage for the database.

So, to make database more efficient and less complex foreign key is necessary to create relation with every tables and entities in a database.

Question No. 04

What is the difference between database and MySQL? **- 10**

Answer No. 04

Database : Database is a collection of data where data are stored as a record and filed organaizely with a relation with most or all of the table or no relation between any table at all. The main work to do for database is to store a vast and huge of data record in a simple and efficient way to use it, change it and get it electrically with the help of technology.

There are two types of database : a) Relational database b) Non-relational database.

MySQL : MySQL is a database software and it is relational types of database. MySQL is a specific software to run and make a database in a structured way with some query. MySQL software support SQL language to give query into it and run it to make a proper database. MySQL is nothing but a database software itself and it is relational type database.

So, Database is storing data in electric mode in a storage which we can get the access of from anywhere on the world. On the other hanbd MySQL is a relational database software platform by which we create, manage, update the database. Database and MySQL is not the same thing.

Question No. 05

Suppose you have to make a table named student. The table will have the fields **- 15**

a. Name
b. Roll
c. Class
d. Blood group
e. Contact No
f. Result
g. Date of Birth
h. Age

Write the datatypes used here.

Answer No. 05

Fields	Data Type
a) Name	VARCHAR
b) ROLL	INT
c) Class	VARCHAR / INT
d) Blood group	VARCHAR
e) Contact No	INT / VARCHAR
f) Result	FLOAT / DOUBLE
g) Date of Birth	DATE
h) Age	INT

Question No. 06

Create a table in MySQL for the student table described in question 5. - **15**

Answer No. 06

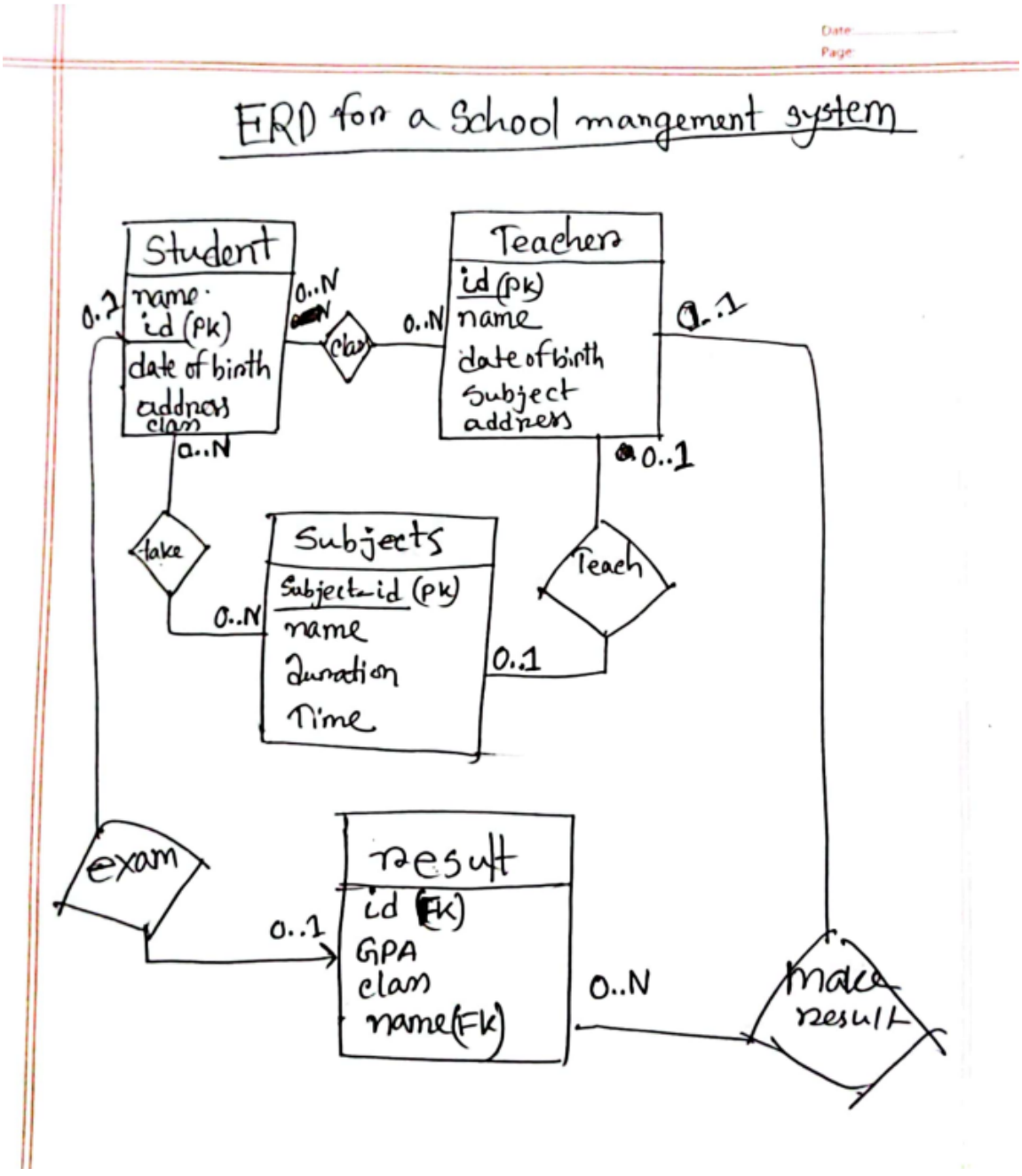
```
CREATE DATABASE assignment;
USE assignment;

CREATE TABLE student(
   Name VARCHAR(50),
   Roll INT,
   Class VARCHAR(20),
   Blood_Group VARCHAR(5),
   Contact_NO VARCHAR(15),
         Result FLOAT(5),
   Date_Of_Birth DATE,
   Age INT
);
```

Question No. 07

Draw a ERD for a School/College management system. **- 20**

Answer No. 07



Question No. 08

Rename the table named student to a name whatever you want. And then delete the table. Write the SQL syntaxes also. **- 10**

Answer No. 08

```
CREATE DATABASE assignment;
USE assignment;
CREATE TABLE student(
        Name VARCHAR(50),
   Roll INT,
   Class VARCHAR(20),
   Blood_Group VARCHAR(5),
   Contact_NO VARCHAR(15),
        Result FLOAT(5),
   Date_Of_Birth DATE,
   Age INT
);
```

RENAME TABLE student to Muktadir;
DROP TABLE Muktadir;