**1. What is the difference between the parent and child tables, and why?**

Ans -Table DEPT contains primary key DEPTNO(PK) and Table EMP contains DEPTNO(FK) as foreign key. Hence TABLE DEPT is parent table and TABLE EMP is cchild table.

Child table and parent table has relation between them, as such they have one column common among both. Table which consists primary key is called Parent Table and table which consist foreign key is called child table.

**2. What are the four components of a database management system?**

Ans – Hardware, Software, Data , Users

**3. What is the distinction between SQL and SQL plus?**

Ans-

SQL is the query language used for communication with SQL Databases.  
SQL\* Plus is a command line tool with which you can send SQL queries to the server.

SQL is a language which is invented by IBM.  
SQL \* Plus is a tool to use SQL language for a database from Oracle corporation.

SQL can be simply used to ask queries, i.e. it involves DML, DDL and DCL.  
SQL \* Plus is command line tool which doesn’t involve DML, DDL and DCL.

In SQL, there is no continuation character.  
Whereas, in SQL \* Plus there is a continuation character.

Keywords cannot be abbreviated in SQL.  
But keywords can be abbreviated in SQL\*Plus.

SQL uses functions to manipulate the data.  
SQL \* plus uses commands to manipulate the data.

**4. What is the definition of normalization?**

Ans- Normalization is splitting large table in to smaller tables for better understanding.

**5. Give examples of 1NF, 2NF, 3NF, and BCNF**

1 NF Example – Singe attribute, Unique column name, Same attributes value in column

2NF Example – following 1NF, No Partial Dependency

Subject Table

|  |  |  |
| --- | --- | --- |
| **roll\_no** | **name** | **subject** |
| 101 | Akon | OS |
| 101 | Akon | CN |
| 103 | Ckon | Java |
| 102 | Bkon | C |
| 102 | Bkon | C++ |

|  |  |  |
| --- | --- | --- |
| **subject\_id** | **subject\_name** | **teacher** |
| 1 | Java | Java Teacher |
| 2 | C++ | C++ Teacher |
| 3 | Php | Php Teacher |

Score Table

|  |  |  |  |
| --- | --- | --- | --- |
| **score\_id** | **student\_id** | **subject\_id** | **marks** |
| 1 | 10 | 1 | 70 |
| 2 | 10 | 2 | 75 |
| 3 | 11 | 1 | 80 |

3 NF Example – Following 2NF, No transitive dependency

Score Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **score\_id** | **student\_id** | **subject\_id** | **exam\_ID** | **marks** |
| **1** | **10** | **1** |  | **70** |
| **2** | **10** | **2** |  | **75** |
| **3** | **11** | **1** |  | **80** |

|  |  |  |
| --- | --- | --- |
| **exam\_id** | **exam\_name** | **total\_marks** |
| **1** | **Workshop** | **200** |
| **2** | **Mains** | **70** |
| **3** | **Practicals** | **30** |

**Exam Table**

BCNF Example- Following 3 NF, A → B, A should be a super key

Student Table

|  |  |
| --- | --- |
| **student\_id** | **p\_id** |
| 101 | 1 |
| 101 | 2 |

Professor Table

|  |  |  |
| --- | --- | --- |
| **p\_id** | **professor** | **subject** |
| 1 | P.Java | Java |
| 2 | P.Cpp | C++ |