**Ques 1:Describe all the data provider objects with sample code**

**Sol 1:**

Data Providers are used for database connectivity. 4 data providers are:

1. **Connection**

Connection String is used to connect with database.It take 4 parameters:-

1.Server Name

2.Database Name

3.Username

4.Password

1. **Command**

Command is used to execute a SQL query to perform operations on a database

1. **Data Reader**

Data reader is used to read data from the database.No manipulation can be done using data reader.Before entering the reader we can modify the data,after entering into reader no changes are allowed

1. **Data Adapter**

It is an interface between database and user.It is used in disconnected architecture.

**Ques 2:Difference between connected and disconnected architecture.**

**Sol 2:**

**Connected Architecture:**

In connected architecture the connection with the database is to be established all the time during operations.All the operations are performed with the open connection.

**Disconnected Architecture:**

In disconnected architecture there is no need to keep connected with the database.The connection is established first,data is fetched from the database,and then the connection is closed.

The operations are performed on the fetched data and then the connection is re-established to make the changes in the database.

**Ques 3:Describe how to improve system performance with the use of database caching**

**Sol 3:**

When connecting with the database it may take time to render the information from the database every time.Using caching once the data is fetched from the database it is saved in the cache and in future the data is fetched through cache thus increasing the speed of execution.

If we are using cache,even if the database is not running in the same machine we can use the data stored in cache.

**Ques 4:What are the differences between DataReader, DataAdapter and DataSet?**

**Sol 4:**

**DataReader**

It is used to fetch records from the database through SQL queries or stored procedures.It holds the connection till the operations are not completed.It fetches one row at a time and returns true if row is not read then it returns false.It can be traversed only in forward direction.

**DataAdapter**

It is used to fetch the data into a DataSet or DataTable.It fetches all rows at once and due to this reason it is slower than DataReader.It can be traversed both in forward and backward direction.The connection is closed as soon as the data is fetched.

**DataSet**

It can hold one or more data tables.It is a disconnected architecture.It contains constructors and methods to perform operations on the data.

**Ques 5:What are the methods of XML dataset objects.**

**Sol 5:**

1. GetXml()

Retrieves XML representation in DataSet in a single string.

1. ReadXml()

Reads XML data from a file,XmlReader or StreamObject to configure data into DataSet.

1. WriteXml()

Write the contents of the DataSet to a file, XmlWriter, or Stream object.