**9. What are different types of dataguard and their difference.**

There are three types of dataguard setups. PHYSICAL and LOGICA and SNAPSHOT.

**PHYSICAL STANDBY:**

A physical standby database is an exact, block-for-block copy of a primary database. A physical standby is  
maintained as an exact copy through a process called **REDO APPLY**, in which redo data received from a  
primary database is continuously applied to a physical standby database using the database recovery mechanisms. So it will be always in sync with primary.

This Standby database can be opened in read only mode( knows as ACTIVE DATA GUARD), for reporting purpose. Most of the corporations use physical standby for data guard  
configuration.

Physical standby database is suitable for high availability and disaster recovery

**LOGICAL STANDBY:**

The logical standby database is kept synchronized with the primary database through SQL APPLY, which transforms the data in the redo received from the primary database into SQL statements and then executes the SQL statements on the standby database. So it contains same logical information as that of production, but physical structure of data can be different.

Logical standby is suitable for reporting purpose, Where we can do **read, write** operations. ( But we should not modify the standby objects, that exists on primary). This also helps in  near zero down time database upgrade.

**SNAPSHOT STANDBY:**

Snapshot standby is a feature in Oracle 11g that allows doing a read-write operation on the standby database i. e  
we can convert the physical standby database to snapshot standby for testing purpose.  On that, we can do all types of testing (**BOTH READ/WRITE**) or can be used as a development database (which is an exact replication of production ). Once the testing is over we can again convert  
the snapshot database to physical standby. Once it is converted physical standby database, whatever changes were done to the snapshot standby will be reverted.