**What are the components of physical database structure of Oracle database?**Oracle database is comprised of three types of files. One or more datafiles, two are more redo log files, and one or more control files.

**What are the components of logical database structure of Oracle database?**   
There are tablespaces and database's schema objects.

**What is a tablespace?**   
A database is divided into Logical Storage Unit called tablespaces. A tablespace is used to grouped related logical structures together.

**What is SYSTEM tablespace and when is it created?**   
Every Oracle database contains a tablespace named SYSTEM, which is automatically created when the database is created. The SYSTEM tablespace always contains the data dictionary tables for the entire database.

**Explain the relationship among database, tablespace and data file ?**  
Each databases logically divided into one or more tablespaces one or more data files are explicitly created for each tablespace.

**What is schema?**   
A schema is collection of database objects of a user.

**What are Schema Objects?**   
Schema objects are the logical structures that directly refer to the database's data. Schema objects include tables, views, sequences, synonyms, indexes, clusters, database triggers, procedures, functions packages and database links.

**Can objects of the same schema reside in different tablespaces?**   
Yes.

**Can a tablespace hold objects from different schemes?**   
Yes.

**What is Oracle table?**   
A table is the basic unit of data storage in an Oracle database. The tables of a database hold all of the user accessible data. Table data is stored in rows and columns.

**What is an Oracle view?**   
A view is a virtual table. Every view has a query attached to it. (The query is a SELECT statement that identifies the columns and rows of the table(s) the view uses.)

**What is Partial Backup ?**   
A Partial Backup is any operating system backup short of a full backup, taken while the database is open or shut down.

**What is Mirrored on-line Redo Log ?**

A mirrored on-line redo log consists of copies of on-line redo log files physically located on separate disks, changes made to one member of the group are made to all members.

**What is Full Backup ?**   
A full backup is an operating system backup of all data files, on-line redo log files and control file that constitute ORACLE database and the parameter.

**Can a View based on another View ?**   
Yes.

**Can a Tablespace hold objects from different Schemes ?**   
Yes.

**Can objects of the same Schema reside in different tablespace ?**   
Yes.

**What is the use of Control File ?**   
When an instance of an ORACLE database is started, its control file is used to identify the database and redo log files that must be opened for database operation to proceed. It is also used in database recovery.

**Do View contain Data ?**   
Views do not contain or store data.

**What are the Referential actions supported by FOREIGN KEY integrity constraint ?**   
UPDATE and DELETE Restrict - A referential integrity rule that disallows the update or deletion of referenced data. DELETE Cascade - When a referenced row is deleted all associated dependent rows are deleted.

**What are the type of Synonyms?**   
There are two types of Synonyms Private and Public.

**What is a Redo Log ?**   
The set of Redo Log files YSDATE,UID,USER or USERENV SQL functions, or the pseudo columns LEVEL or ROWNUM.

**What is an Index Segment ?**   
Each Index has an Index segment that stores all of its data.

**Explain the relationship among Database, Tablespace and Data file?**   
Each databases logically divided into one or more tablespaces one or more data files are explicitly created for each tablespace

**What are the different type of Segments ?**   
Data Segment, Index Segment, Rollback Segment and Temporary Segment.

**What are Clusters ?**   
Clusters are groups of one or more tables physically stores together to share common columns and are often used together.

**What is an Integrity Constrains ?**   
An integrity constraint is a declarative way to define a business rule for a column of a table.

**What is an Index ?**   
An Index is an optional structure associated with a table to have direct access to rows, which can be created to increase the performance of data retrieval. Index can be created on one or more columns of a table.

**What is an Extent ?**   
An Extent is a specific number of contiguous data blocks, obtained in a single allocation, and used to store a specific type of information.

**What is a View ?**   
A view is a virtual table. Every view has a Query attached to it. (The Query is a SELECT statement that identifies the columns and rows of the table(s) the view uses.)

**What is Table ?**   
A table is the basic unit of data storage in an ORACLE database. The tables of a database hold all of the user accessible data. Table data is stored in rows and columns.

**Can a view based on another view?**Yes.

**What are the advantages of views?**   
- Provide an additional level of table security, by restricting access to a predetermined set of rows and columns of a table.  
- Hide data complexity.  
- Simplify commands for the user.  
- Present the data in a different perspective from that of the base table.  
- Store complex queries.

**What is an Oracle sequence?**   
A sequence generates a serial list of unique numbers for numerical columns of a database's tables.

**What is a synonym?**   
A synonym is an alias for a table, view, sequence or program unit.

**What are the types of synonyms?**   
There are two types of synonyms private and public.

**What is a private synonym?**   
Only its owner can access a private synonym.

**What is a public synonym?**   
Any database user can access a public synonym.

**What are synonyms used for?**   
- Mask the real name and owner of an object.  
- Provide public access to an object  
- Provide location transparency for tables, views or program units of a remote database.  
- Simplify the SQL statements for database users.

**What is an Oracle index?**   
An index is an optional structure associated with a table to have direct access to rows, which can be created to increase the performance of data retrieval. Index can be created on one or more columns of a table.

**How are the index updates?**   
Indexes are automatically maintained and used by Oracle. Changes to table data are automatically incorporated into all relevant indexes.

**What is a Tablespace?**   
A database is divided into Logical Storage Unit called tablespace. A tablespace is used to grouped related logical structures together

**What is Rollback Segment ?**   
A Database contains one or more Rollback Segments to temporarily store "undo" information.

**What are the Characteristics of Data Files ?**   
A data file can be associated with only one database. Once created a data file can't change size. One or more data files form a logical unit of database storage called a tablespace.

**How to define Data Block size ?**   
A data block size is specified for each ORACLE database when the database is created. A database users and allocated free database space in ORACLE data blocks. Block size is specified in INIT.ORA file and can’t be changed latter.

**What does a Control file Contain ?**   
A Control file records the physical structure of the database. It contains the following information.   
Database Name  
Names and locations of a database's files and redolog files.  
Time stamp of database creation.

**What is difference between UNIQUE constraint and PRIMARY KEY constraint ?**

A column defined as UNIQUE can contain Nulls while a column defined as PRIMARY KEY can't contain Nulls.

**What is Index Cluster ?**   
A Cluster with an index on the Cluster Key

**When does a Transaction end ?**   
When it is committed or Rollbacked.

**What is the effect of setting the value "ALL\_ROWS" for OPTIMIZER\_GOAL parameter of the ALTER SESSION command ? What are the factors that affect OPTIMIZER in choosing an Optimization approach ?**   
Answer The OPTIMIZER\_MODE initialization parameter Statistics in the Data Dictionary the OPTIMIZER\_GOAL parameter of the ALTER SESSION command hints in the statement.

**What is the effect of setting the value "CHOOSE" for OPTIMIZER\_GOAL, parameter of the ALTER SESSION Command ?**   
The Optimizer chooses Cost\_based approach and optimizes with the goal of best throughput if statistics for atleast one of the tables accessed by the SQL statement exist in the data dictionary. Otherwise the OPTIMIZER chooses RULE\_based approach.

**How does one create a new database? (for DBA)**   
One can create and modify Oracle databases using the Oracle "dbca" (Database Configuration Assistant) utility. The dbca utility is located in the $ORACLE\_HOME/bin directory. The Oracle Universal Installer (oui) normally starts it after installing the database server software.   
One can also create databases manually using scripts. This option, however, is falling out of fashion, as it is quite involved and error prone. Look at this example for creating and Oracle 9i database:   
CONNECT SYS AS SYSDBA  
ALTER SYSTEM SET DB\_CREATE\_FILE\_DEST='/u01/oradata/';  
ALTER SYSTEM SET DB\_CREATE\_ONLINE\_LOG\_DEST\_1='/u02/oradata/';  
ALTER SYSTEM SET DB\_CREATE\_ONLINE\_LOG\_DEST\_2='/u03/oradata/';  
CREATE DATABASE;

**What database block size should I use? (for DBA)**   
Oracle recommends that your database block size match, or be multiples of your operating system block size. One can use smaller block sizes, but the performance cost is significant. Your choice should depend on the type of application you are running. If you have many small transactions as with OLTP, use a smaller block size. With fewer but larger transactions, as with a DSS application, use a larger block size. If you are using a volume manager, consider your "operating system block size" to be 8K. This is because volume manager products use 8K blocks (and this is not configurable).

**What are the different approaches used by Optimizer in choosing an execution plan ?**   
Rule-based and Cost-based.

**What does ROLLBACK do ?**   
ROLLBACK retracts any of the changes resulting from the SQL statements in the transaction.

**How does one coalesce free space ? (for DBA)**   
SMON coalesces free space (extents) into larger, contiguous extents every 2 hours and even then, only for a short period of time.   
SMON will not coalesce free space if a tablespace's default storage parameter "pctincrease" is set to 0. With Oracle 7.3 one can manually coalesce a tablespace using the ALTER TABLESPACE ... COALESCE; command, until then use:  
SQL> alter session set events 'immediate trace name coalesce level n';  
Where 'n' is the tablespace number you get from SELECT TS#, NAME FROM SYS.TS$;   
You can get status information about this process by selecting from the SYS.DBA\_FREE\_SPACE\_COALESCED dictionary view.

**How does one prevent tablespace fragmentation? (for DBA)**   
Always set PCTINCREASE to 0 or 100.  
Bizarre values for PCTINCREASE will contribute to fragmentation. For example if you set PCTINCREASE to 1 you will see that your extents are going to have weird and wacky sizes: 100K, 100K, 101K, 102K, etc. Such extents of bizarre size are rarely re-used in their entirety. PCTINCREASE of 0 or 100 gives you nice round extent sizes that can easily be reused. E.g.. 100K, 100K, 200K, 400K, etc.   
  
Use the same extent size for all the segments in a given tablespace. Locally Managed tablespaces (available from 8i onwards) with uniform extent sizes virtually eliminates any tablespace fragmentation. Note that the number of extents per segment does not cause any performance issue anymore, unless they run into thousands and thousands where additional I/O may be required to fetch the additional blocks where extent maps of the segment are stored.

**Where can one find the high water mark for a table? (for DBA)**   
There is no single system table, which contains the high water mark (HWM) for a table. A table's HWM can be calculated using the results from the following SQL statements:   
SELECT BLOCKS  
FROM DBA\_SEGMENTS  
WHERE OWNER=UPPER(owner) AND SEGMENT\_NAME = UPPER(table);  
ANALYZE TABLE owner.table ESTIMATE STATISTICS;  
SELECT EMPTY\_BLOCKS  
FROM DBA\_TABLES  
WHERE OWNER=UPPER(owner) AND SEGMENT\_NAME = UPPER(table);  
Thus, the tables' HWM = (query result 1) - (query result 2) - 1   
NOTE: You can also use the DBMS\_SPACE package and calculate the HWM = TOTAL\_BLOCKS - UNUSED\_BLOCKS - 1.

**What is COST-based approach to optimization ?**   
Considering available access paths and determining the most efficient execution plan based on statistics in the data dictionary for the tables accessed by the statement and their associated clusters and indexes.

**What does COMMIT do ?**   
COMMIT makes permanent the changes resulting from all SQL statements in the transaction. The changes made by the SQL statements of a transaction become visible to other user sessions transactions that start only after transaction is committed.

**How are extents allocated to a segment? (for DBA)**   
Oracle8 and above rounds off extents to a multiple of 5 blocks when more than 5 blocks are requested. If one requests 16K or 2 blocks (assuming a 8K block size), Oracle doesn't round it up to 5 blocks, but it allocates 2 blocks or 16K as requested. If one asks for 8 blocks, Oracle will round it up to 10 blocks.   
Space allocation also depends upon the size of contiguous free space available. If one asks for 8 blocks and Oracle finds a contiguous free space that is exactly 8 blocks, it would give it you. If it were 9 blocks, Oracle would also give it to you. Clearly Oracle doesn't always round extents to a multiple of 5 blocks.   
The exception to this rule is locally managed tablespaces. If a tablespace is created with local extent management and the extent size is 64K, then Oracle allocates 64K or 8 blocks assuming 8K-block size. Oracle doesn't round it up to the multiple of 5 when a tablespace is locally managed.

**Can one rename a database user (schema)? (for DBA)**   
No, this is listed as Enhancement Request 158508. Workaround:   
Do a user-level export of user A  
create new user B  
Import system/manager fromuser=A touser=B  
Drop user A

Define Transaction ?A Transaction is a logical unit of work that comprises one or more SQL statements executed by a single user.

**What is Read-Only Transaction ?**   
A Read-Only transaction ensures that the results of each query executed in the transaction are consistant with respect to the same point in time.

What is a deadlock ? Explain .   
Two processes wating to update the rows of a table which are locked by the other process then deadlock arises. In a database environment this will often happen because of not issuing proper row lock commands. Poor design of front-end application may cause this situation and the performance of server will reduce drastically.  
These locks will be released automatically when a commit/rollback operation performed or any one of this processes being killed externally.

**What is a Schema ?**   
The set of objects owned by user account is called the schema.

**What is a cluster Key ?**   
The related columns of the tables are called the cluster key. The cluster key is indexed using a cluster index and its value is stored only once for multiple tables in the cluster.

**What is Parallel Server ?**   
Multiple instances accessing the same database (Only In Multi-CPU environments)

**What are the basic element of Base configuration of an oracle Database ?**   
It consists of  
one or more data files.  
one or more control files.  
two or more redo log files.  
The Database contains  
multiple users/schemas  
one or more rollback segments  
one or more tablespaces  
Data dictionary tables  
User objects (table,indexes,views etc.,)  
The server that access the database consists of  
SGA (Database buffer, Dictionary Cache Buffers, Redo log buffers, Shared SQL pool)  
SMON (System MONito)  
PMON (Process MONitor)  
LGWR (LoG Write)  
DBWR (Data Base Write)  
ARCH (ARCHiver)  
CKPT (Check Point)  
RECO  
Dispatcher  
User Process with associated PGS

**What is clusters ?**   
Group of tables physically stored together because they share common columns and are often used together is called Cluster.

**What is an Index ? How it is implemented in Oracle Database ?**   
An index is a database structure used by the server to have direct access of a row in a table. An index is automatically created when a unique of primary key constraint clause is specified in create table comman (Ver 7.0)

**What is a Database instance ? Explain**   
A database instance (Server) is a set of memory structure and background processes that access a set of database files.  
The process can be shared by all users. The memory structure that are used to store most queried data from database. This helps up to improve database performance by decreasing the amount of I/O performed against data file.

**What is the use of ANALYZE command ?**   
To perform one of these function on an index, table, or cluster:  
- To collect statistics about object used by the optimizer and store them in the data dictionary.  
- To delete statistics about the object used by object from the data dictionary.  
- To validate the structure of the object.  
- To identify migrated and chained rows of the table or cluster.

**What is default tablespace ?**   
The Tablespace to contain schema objects created without specifying a tablespace name.

**What are the system resources that can be controlled through Profile ?**   
The number of concurrent sessions the user can establish the CPU processing time available to the user's session the CPU processing time available to a single call to ORACLE made by a SQL statement the amount of logical I/O available to the user's session the amout of logical I/O available to a single call to ORACLE made by a SQL statement the allowed amount of idle time for the user's session the allowed amount of connect time for the user's session.

**What is Tablespace Quota ?**   
The collective amount of disk space available to the objects in a schema on a particular tablespace.

**What are the different Levels of Auditing ?**   
Statement Auditing, Privilege Auditing and Object Auditing.

**What is Statement Auditing ?**   
Statement auditing is the auditing of the powerful system privileges without regard to specifically named objects.

**What are the database administrators utilities available ?**   
SQL \* DBA - This allows DBA to monitor and control an ORACLE database. SQL \* Loader - It loads data from standard operating system files (Flat files) into ORACLE database tables. Export (EXP) and Import (imp) utilities allow you to move existing data in ORACLE format to and from ORACLE database.

**How can you enable automatic archiving ?**   
Shut the database  
Backup the database  
Modify/Include LOG\_ARCHIVE\_START\_TRUE in init.ora file.  
Start up the database.

**What are roles? How can we implement roles ?**   
Roles are the easiest way to grant and manage common privileges needed by different groups of database users. Creating roles and assigning provides to roles. Assign each role to group of users. This will simplify the job of assigning privileges to individual users.

**What are Roles ?**   
Roles are named groups of related privileges that are granted to users or other roles.

**What are the use of Roles ?**   
REDUCED GRANTING OF PRIVILEGES - Rather than explicitly granting the same set of privileges to many users a database administrator can grant the privileges for a group of related users granted to a role and then grant only the role to each member of the group.   
DYNAMIC PRIVILEGE MANAGEMENT - When the privileges of a group must change, only the privileges of the role need to be modified. The security domains of all users granted the group's role automatically reflect the changes made to the role.  
SELECTIVE AVAILABILITY OF PRIVILEGES - The roles granted to a user can be selectively enable (available for use) or disabled (not available for use). This allows specific control of a user's privileges in any given situation.  
APPLICATION AWARENESS - A database application can be designed to automatically enable and disable selective roles when a user attempts to use the application.

**What is Privilege Auditing ?**   
Privilege auditing is the auditing of the use of powerful system privileges without regard to specifically named objects.

What is Object Auditing ? Object auditing is the auditing of accesses to specific schema objects without regard to user.

**What is Auditing ?**   
Monitoring of user access to aid in the investigation of database use.

How does one see the uptime for a database? (for DBA )Look at the following SQL query:   
SELECT to\_char (startup\_time,'DD-MON-YYYY HH24: MI: SS') "DB Startup Time"  
FROM sys.v\_$instance;  
Marco Bergman provided the following alternative solution:   
SELECT to\_char (logon\_time,'Dy dd Mon HH24: MI: SS') "DB Startup Time"  
FROM sys.v\_$session  
WHERE Sid=1 /\* this is pmon \*/  
/  
Users still running on Oracle 7 can try one of the following queries:   
Column STARTED format a18 head 'STARTUP TIME'  
Select C.INSTANCE,  
to\_date (JUL.VALUE, 'J')  
|| to\_char (floor (SEC.VALUE/3600), '09')  
|| ':'  
-- || Substr (to\_char (mod (SEC.VALUE/60, 60), '09'), 2, 2)  
|| Substr (to\_char (floor (mod (SEC.VALUE/60, 60)), '09'), 2, 2)  
|| '.'  
|| Substr (to\_char (mod (SEC.VALUE, 60), '09'), 2, 2) STARTED  
from SYS.V\_$INSTANCE JUL,  
SYS.V\_$INSTANCE SEC,  
SYS.V\_$THREAD C  
Where JUL.KEY like '%JULIAN%'  
and SEC.KEY like '%SECOND%';  
Select to\_date (JUL.VALUE, 'J')  
|| to\_char (to\_date (SEC.VALUE, 'SSSSS'), ' HH24:MI:SS') STARTED  
from SYS.V\_$INSTANCE JUL,  
SYS.V\_$INSTANCE SEC  
where JUL.KEY like '%JULIAN%'  
and SEC.KEY like '%SECOND%';  
select to\_char (to\_date (JUL.VALUE, 'J') + (SEC.VALUE/86400), -Return a DATE  
'DD-MON-YY HH24:MI:SS') STARTED  
from V$INSTANCE JUL,  
V$INSTANCE SEC  
where JUL.KEY like '%JULIAN%'  
and SEC.KEY like '%SECOND%';

**Where are my TEMPFILES, I don't see them in V$DATAFILE or DBA\_DATA\_FILE? (for DBA )**  
Tempfiles, unlike normal datafiles, are not listed in v$datafile or dba\_data\_files. Instead query v$tempfile or dba\_temp\_files:   
SELECT \* FROM v$tempfile;  
SELECT \* FROM dba\_temp\_files;

**How do I find used/free space in a TEMPORARY tablespace? (for DBA )**  
Unlike normal tablespaces, true temporary tablespace information is not listed in DBA\_FREE\_SPACE. Instead use the V$TEMP\_SPACE\_HEADER view:   
SELECT tablespace\_name, SUM (bytes used), SUM (bytes free)  
FROM V$temp\_space\_header  
GROUP BY tablespace\_name;

**What is a profile ?**   
Each database user is assigned a Profile that specifies limitations on various system resources available to the user.

**How will you enforce security using stored procedures?**   
Don't grant user access directly to tables within the application. Instead grant the ability to access the procedures that access the tables. When procedure executed it will execute the privilege of procedures owner. Users cannot access tables except via the procedure.

**How can one see who is using a temporary segment? (for DBA )**  
For every user using temporary space, there is an entry in SYS.V$\_LOCK with type 'TS'.   
All temporary segments are named 'ffff.bbbb' where 'ffff' is the file it is in and 'bbbb' is first block of the segment. If your temporary tablespace is set to TEMPORARY, all sorts are done in one large temporary segment. For usage stats, see SYS.V\_$SORT\_SEGMENT   
From Oracle 8.0, one can just query SYS.v$sort\_usage. Look at these examples:   
select s.username, u."USER", u.tablespace, u.contents, u.extents, u.blocks  
from sys.v\_$session s, sys.v\_$sort\_usage u  
where s.addr = u.session\_addr  
/  
select s.osuser, s.process, s.username, s.serial#,  
Sum (u.blocks)\*vp.value/1024 sort\_size  
from sys.v\_$session s, sys.v\_$sort\_usage u, sys.v\_$parameter VP  
where s.saddr = u.session\_addr  
and vp.name = 'db\_block\_size'  
and s.osuser like '&1'  
group by s.osuser, s.process, s.username, s.serial#, vp.value  
/

**How does one get the view definition of fixed views/tables?**   
Query v$fixed\_view\_definition. Example: SELECT \* FROM v$fixed\_view\_definition WHERE view\_name='V$SESSION';

**What are the dictionary tables used to monitor a database spaces ?**   
DBA\_FREE\_SPACE  
DBA\_SEGMENTS  
DBA\_DATA\_FILES.

**How can we specify the Archived log file name format and destination?**   
By setting the following values in init.ora file. LOG\_ARCHIVE\_FORMAT = arch %S/s/T/tarc (%S - Log sequence number and is zero left paded, %s - Log sequence number not padded. %T - Thread number lef-zero-paded and %t - Thread number not padded). The file name created is arch 0001 are if %S is used. LOG\_ARCHIVE\_DEST = path.

**What is user Account in Oracle database?**   
An user account is not a physical structure in Database but it is having important relationship to the objects in the database and will be having certain privileges.

**When will the data in the snapshot log be used?**   
We must be able to create a after row trigger on table (i.e., it should be not be already available) After giving table privileges. We cannot specify snapshot log name because oracle uses the name of the master table in the name of the database objects that support its snapshot log. The master table name should be less than or equal to 23 characters. (The table name created will be MLOGS\_tablename, and trigger name will be TLOGS name).

**What dynamic data replication?**   
Updating or Inserting records in remote database through database triggers. It may fail if remote database is having any problem.

**What is Two-Phase Commit ?**   
Two-phase commit is mechanism that guarantees a distributed transaction either commits on all involved nodes or rolls back on all involved nodes to maintain data consistency across the global distributed database. It has two phase, a Prepare Phase and a Commit Phase.

**How can you Enforce Referential Integrity in snapshots ?**   
Time the references to occur when master tables are not in use. Peform the reference the manually immdiately locking the master tables. We can join tables in snopshots by creating a complex snapshots that will based on the master tables.

**What is a SQL \* NET?**   
SQL \*NET is ORACLE's mechanism for interfacing with the communication protocols used by the networks that facilitate distributed processing and distributed databases. It is used in Clint-Server and Server-Server communications.

**What is a SNAPSHOT ?**   
Snapshots are read-only copies of a master table located on a remote node which is periodically refreshed to reflect changes made to the master table.

**What is the mechanism provided by ORACLE for table replication ?**   
Snapshots and SNAPSHOT LOGs

**What is snapshots?**   
Snapshot is an object used to dynamically replicate data between distribute database at specified time intervals. In ver 7.0 they are read only.

**What are the various type of snapshots?**   
Simple and Complex.

**Describe two phases of Two-phase commit ?**   
Prepare phase - The global coordinator (initiating node) ask a participants to prepare (to promise to commit or rollback the transaction, even if there is a failure) Commit - Phase - If all participants respond to the coordinator that they are prepared, the coordinator asks all nodes to commit the transaction, if all participants cannot prepare, the coordinator asks all nodes to roll back the transaction.

**What is snapshot log ?**   
It is a table that maintains a record of modifications to the master table in a snapshot. It is stored in the same database as master table and is only available for simple snapshots. It should be created before creating snapshots.

**What are the benefits of distributed options in databases?**   
Database on other servers can be updated and those transactions can be grouped together with others in a logical unit.  
Database uses a two phase commit.

**What are the options available to refresh snapshots ?**   
COMPLETE - Tables are completely regenerated using the snapshots query and the master tables every time the snapshot referenced.  
FAST - If simple snapshot used then a snapshot log can be used to send the changes to the snapshot tables.  
FORCE - Default value. If possible it performs a FAST refresh; Otherwise it will perform a complete refresh.

**What is a SNAPSHOT LOG ?**  
A snapshot log is a table in the master database that is associated with the master table. ORACLE uses a snapshot log to track the rows that have been updated in the master table. Snapshot logs are used in updating the snapshots based on the master table.

**What is Distributed database ?**   
A distributed database is a network of databases managed by multiple database servers that appears to a user as single logical database. The data of all databases in the distributed database can be simultaneously accessed and modified.

**How can we reduce the network traffic?**   
- Replication of data in distributed environment.  
- Using snapshots to replicate data.  
- Using remote procedure calls.

**Differentiate simple and complex, snapshots ?**   
- A simple snapshot is based on a query that does not contains GROUP BY clauses, CONNECT BY clauses, JOINs, sub-query or snashot of operations.  
- A complex snapshots contain atleast any one of the above.

**What are the Built-ins used for sending Parameters to forms?**   
You can pass parameter values to a form when an application executes the call\_form, New\_form, Open\_form or Run\_product.

**Can you have more than one content canvas view attached with a window?**   
Yes. Each window you create must have atleast one content canvas view assigned to it. You can also create a window that has manipulated content canvas view. At run time only one of the content canvas views assign to a window is displayed at a time.

**Is the After report trigger fired if the report execution fails?**   
Yes.

**Does a Before form trigger fire when the parameter form is suppressed?**   
Yes.

What is SGA?The System Global Area in an Oracle database is the area in memory to facilitate the transfer of information between users. It holds the most recently requested structural information between users. It holds the most recently requested structural information about the database. The structure is database buffers, dictionary cache, redo log buffer and shared pool area.

**What is a shared pool?**   
The data dictionary cache is stored in an area in SGA called the shared pool. This will allow sharing of parsed SQL statements among concurrent users.

What is mean by Program Global Area (PGA)? It is area in memory that is used by a single Oracle user process.

**What is a data segment?**   
Data segment are the physical areas within a database block in which the data associated with tables and clusters are stored.

**What are the factors causing the reparsing of SQL statements in SGA?**   
Due to insufficient shared pool size.  
Monitor the ratio of the reloads takes place while executing SQL statements. If the ratio is greater than 1 then increase the SHARED\_POOL\_SIZE.

**What are clusters?**   
Clusters are groups of one or more tables physically stores together to share common columns and are often used together.

**What is cluster key?**   
The related columns of the tables in a cluster are called the cluster key.

**Do a view contain data?**   
Views do not contain or store data.

**What is user Account in Oracle database?**   
A user account is not a physical structure in database but it is having important relationship to the objects in the database and will be having certain privileges.

**How will you enforce security using stored procedures?**   
Don't grant user access directly to tables within the application. Instead grant the ability to access the procedures that access the tables. When procedure executed it will execute the privilege of procedures owner. Users cannot access tables except via the procedure.

**What are the dictionary tables used to monitor a database space?**   
DBA\_FREE\_SPACE  
DBA\_SEGMENTS  
DBA\_DATA\_FILES.

**Can a property clause itself be based on a property clause?**   
Yes

**If a parameter is used in a query without being previously defined, what diff. exist between. report 2.0 and 2.5 when the query is applied?**   
While both reports 2.0 and 2.5 create the parameter, report 2.5 gives a message that a bind parameter has been created.

What are the sql clauses supported in the link property sheet?  
Where start with having.

**What is trigger associated with the timer?**   
When-timer-expired.

**What are the trigger associated with image items?**   
When-image-activated fires when the operators double clicks on an image itemwhen-image-pressed fires when an operator clicks or double clicks on an image item

**What are the different windows events activated at runtimes?**   
When\_window\_activated  
When\_window\_closed  
When\_window\_deactivated  
When\_window\_resized  
Within this triggers, you can examine the built in system variable system. event\_window to determine the name of the window for which the trigger fired.

**When do you use data parameter type?**   
When the value of a data parameter being passed to a called product is always the name of the record group defined in the current form. Data parameters are used to pass data to products invoked with the run\_product built-in subprogram.

**What is difference between open\_form and call\_form?**   
when one form invokes another form by executing open\_form the first form remains displayed, and operators can navigate between the forms as desired. when one form invokes another form by executing call\_form, the called form is modal with respect to the calling form. That is, any windows that belong to the calling form are disabled, and operators cannot navigate to them until they first exit the called form.

**What is new\_form built-in?**   
When one form invokes another form by executing new\_form oracle form exits the first form and releases its memory before loading the new form calling new form completely replace the first with the second. If there are changes pending in the first form, the operator will be prompted to save them before the new form is loaded.

**What is the "LOV of Validation" Property of an item? What is the use of it?**   
When LOV for Validation is set to True, Oracle Forms compares the current value of the text item to the values in the first column displayed in the LOV. Whenever the validation event occurs. If the value in the text item matches one of the values in the first column of the LOV, validation succeeds, the LOV is not displayed, and processing continues normally. If the value in the text item does not match one of the values in the first column of the LOV, Oracle Forms displays the LOV and uses the text item value as the search criteria to automatically reduce the list.

**What is the diff. when Flex mode is mode on and when it is off?**   
When flex mode is on, reports automatically resizes the parent when the child is resized.

**What is the diff. when confine mode is on and when it is off?**   
When confine mode is on, an object cannot be moved outside its parent in the layout.

**What are visual attributes?**   
Visual attributes are the font, color, pattern proprieties that you set for form and menu objects that appear in your application interface.

**Which of the two views should objects according to possession?**   
view by structure.

**What are the two types of views available in the object navigator(specific to report 2.5)?**   
View by structure and view by type .

**What are the vbx controls?**   
Vbx control provide a simple method of building and enhancing user interfaces. The controls can use to obtain user inputs and display program outputs.vbx control where originally develop as extensions for the ms visual basic environments and include such items as sliders, rides and knobs.

**What is the use of transactional triggers?**   
Using transactional triggers we can control or modify the default functionality of the oracle forms.

**How do you create a new session while open a new form?**   
Using open\_form built-in setting the session option Ex. Open\_form('Stocks ',active, session). when invoke the multiple forms with open form and call\_form in the same application, state whether the following are true/False

**What are the ways to monitor the performance of the report?**   
Use reports profile executable statement. Use SQL trace facility.

**If two groups are not linked in the data model editor, What is the hierarchy between them?**   
Two group that is above are the left most rank higher than the group that is to right or below it

An open form can not be execute the call\_form procedure if you chain of called forms has been initiated by another open form?True

**Explain about horizontal, Vertical tool bar canvas views?**   
Tool bar canvas views are used to create tool bars for individual windows. Horizontal tool bars are display at the top of a window, just under its menu bar. Vertical Tool bars are displayed along the left side of a window

What is the purpose of the product order option in the column property sheet?  
To specify the order of individual group evaluation in a cross products.

**What is the use of image\_zoom built-in?**   
To manipulate images in image items.

**How do you reference a parameter indirectly?**   
To indirectly reference a parameter use the NAME IN, COPY 'built-ins to indirectly set and reference the parameters value' Example name\_in ('capital parameter my param'), Copy ('SURESH','Parameter my\_param')

**What is a timer?**   
Timer is an "internal time clock" that you can programmatically create to perform an action each time the times.

**What are the two phases of block coordination?**   
There are two phases of block coordination: the clear phase and the population phase. During, the clear phase, Oracle Forms navigates internally to the detail block and flushes the obsolete detail records. During the population phase, Oracle Forms issues a SELECT statement to repopulate the detail block with detail records associated with the new master record. These operations are accomplished through the execution of triggers.

**What are Most Common types of Complex master-detail relationships?**   
There are three most common types of complex master-detail relationships:  
master with dependent details  
master with independent details  
detail with two masters

**What is a text list?**   
The text list style list item appears as a rectangular box which displays the fixed number of values. When the text list contains values that can not be displayed, a vertical scroll bar appears, allowing the operator to view and select undisplayed values.

**What is term?**   
The term is terminal definition file that describes the terminal form which you are using r20run.

**What is use of term?**   
The term file which key is correspond to which oracle report functions.

**What is pop list?**   
The pop list style list item appears initially as a single field (similar to a text item field). When the operator selects the list icon, a list of available choices appears.

**What is the maximum no of chars the parameter can store?**   
The maximum no of chars the parameter can store is only valid for char parameters, which can be upto 64K. No parameters default to 23Bytes and Date parameter default to 7Bytes.

**What are the default extensions of the files created by library module?**   
The default file extensions indicate the library module type and storage format .pll - pl/sql library module binary

**What are the Coordination Properties in a Master-Detail relationship?**   
The coordination properties are  
Deferred  
Auto-Query  
These Properties determine when the population phase of block  
coordination should occur.

**How do you display console on a window ?**   
The console includes the status line and message line, and is displayed at the bottom of the window to which it is assigned.To specify that the console should be displayed, set the console window form property to the name of any window in the form. To include the console, set console window to Null.

**What are the different Parameter types?**   
Text ParametersData Parameters

**State any three mouse events system variables?**   
System.mouse\_button\_pressedSystem.mouse\_button\_shift

**What are the types of calculated columns available?**   
Summary, Formula, Placeholder column.

**Explain about stacked canvas views?**   
Stacked canvas view is displayed in a window on top of, or "stacked" on the content canvas view assigned to that same window. Stacked canvas views obscure some part of the underlying content canvas view, and or often shown and hidden programmatically.

**How does one do off-line database backups? (for DBA )**  
Shut down the database from sqlplus or server manager. Backup all files to secondary storage (eg. tapes). Ensure that you backup all data files, all control files and all log files. When completed, restart your database.  
Do the following queries to get a list of all files that needs to be backed up:   
select name from sys.v\_$datafile;  
select member from sys.v\_$logfile;  
select name from sys.v\_$controlfile;  
Sometimes Oracle takes forever to shutdown with the "immediate" option. As workaround to this problem, shutdown using these commands:   
alter system checkpoint;  
shutdown abort  
startup restrict  
shutdown immediate  
Note that if you database is in ARCHIVELOG mode, one can still use archived log files to roll forward from an off-line backup. If you cannot take your database down for a cold (off-line) backup at a convenient time, switch your database into ARCHIVELOG mode and perform hot (on-line) backups.

**What is the difference between SHOW\_EDITOR and EDIT\_TEXTITEM?**   
Show editor is the generic built-in which accepts any editor name and takes some input string and returns modified output string. Whereas the edit\_textitem built-in needs the input focus to be in the text item before the built-in is executed.

**What are the built-ins that are used to Attach an LOV programmatically to an item?**   
set\_item\_property  
get\_item\_property  
(by setting the LOV\_NAME property)

**How does one do on-line database backups? (for DBA )**  
Each tablespace that needs to be backed-up must be switched into backup mode before copying the files out to secondary storage (tapes). Look at this simple example.   
ALTER TABLESPACE xyz BEGIN BACKUP;  
! cp xyfFile1 /backupDir/  
ALTER TABLESPACE xyz END BACKUP;  
It is better to backup tablespace for tablespace than to put all tablespaces in backup mode. Backing them up separately incurs less overhead. When done, remember to backup your control files. Look at this example:  
ALTER SYSTEM SWITCH LOGFILE; -- Force log switch to update control file headers   
ALTER DATABASE BACKUP CONTROLFILE TO '/backupDir/control.dbf';  
NOTE: Do not run on-line backups during peak processing periods. Oracle will write complete database blocks instead of the normal deltas to redo log files while in backup mode. This will lead to excessive database archiving and even database freezes.

**How does one backup a database using RMAN? (for DBA )**  
The biggest advantage of RMAN is that it only backup used space in the database. Rman doesn't put tablespaces in backup mode, saving on redo generation overhead. RMAN will re-read database blocks until it gets a consistent image of it. Look at this simple backup example.   
rman target sys/\*\*\* nocatalog   
run {   
allocate channel t1 type disk;  
backup   
format '/app/oracle/db\_backup/%d\_t%t\_s%s\_p%p'  
( database );   
release channel t1;   
}  
Example RMAN restore:   
rman target sys/\*\*\* nocatalog   
run {  
allocate channel t1 type disk;  
# set until time 'Aug 07 2000 :51';  
restore tablespace users;   
recover tablespace users;   
release channel t1;   
}  
The examples above are extremely simplistic and only useful for illustrating basic concepts. By default Oracle uses the database controlfiles to store information about backups. Normally one would rather setup a RMAN catalog database to store RMAN metadata in. Read the Oracle Backup and Recovery Guide before implementing any RMAN backups.   
Note: RMAN cannot write image copies directly to tape. One needs to use a third-party media manager that integrates with RMAN to backup directly to tape. Alternatively one can backup to disk and then manually copy the backups to tape.

**What are the different file extensions that are created by oracle reports?**   
Rep file and Rdf file.

**What is strip sources generate options?**   
Removes the source code from the library file and generates a library files that contains only pcode. The resulting file can be used for final deployment, but can not be subsequently edited in the designer.ex. f45gen module=old\_lib.pll userid=scott/tiger strip\_source YES output\_file

**How does one put a database into ARCHIVELOG mode? (for DBA )**  
The main reason for running in archivelog mode is that one can provide 24-hour availability and guarantee complete data recoverability. It is also necessary to enable ARCHIVELOG mode before one can start to use on-line database backups. To enable ARCHIVELOG mode, simply change your database startup command script, and bounce the database:   
SQLPLUS> connect sys as sysdba  
SQLPLUS> startup mount exclusive;  
SQLPLUS> alter database archivelog;  
SQLPLUS> archive log start;  
SQLPLUS> alter database open;  
NOTE1: Remember to take a baseline database backup right after enabling archivelog mode. Without it one would not be able to recover. Also, implement an archivelog backup to prevent the archive log directory from filling-up.   
NOTE2: ARCHIVELOG mode was introduced with Oracle V6, and is essential for database point-in-time recovery. Archiving can be used in combination with on-line and off-line database backups.   
NOTE3: You may want to set the following INIT.ORA parameters when enabling ARCHIVELOG mode: log\_archive\_start=TRUE, log\_archive\_dest=... and log\_archive\_format=...   
NOTE4: You can change the archive log destination of a database on-line with the ARCHIVE LOG START TO 'directory'; statement. This statement is often used to switch archiving between a set of directories.   
NOTE5: When running Oracle Real Application Server (RAC), you need to shut down all nodes before changing the database to ARCHIVELOG mode.

**What is the basic data structure that is required for creating an LOV?**   
Record Group.

**How does one backup archived log files? (for DBA )**  
One can backup archived log files using RMAN or any operating system backup utility. Remember to delete files after backing them up to prevent the archive log directory from filling up. If the archive log directory becomes full, your database will hang! Look at this simple RMAN backup script:   
RMAN> run {  
2> allocate channel dev1 type disk;  
3> backup  
4> format '/app/oracle/arch\_backup/log\_t%t\_s%s\_p%p'  
5> (archivelog all delete input);  
6> release channel dev1;  
7> }

**Does Oracle write to data files in begin/hot backup mode? (for DBA )**  
Oracle will stop updating file headers, but will continue to write data to the database files even if a tablespace is in backup mode.   
In backup mode, Oracle will write out complete changed blocks to the redo log files. Normally only deltas (changes) are logged to the redo logs. This is done to enable reconstruction of a block if only half of it was backed up (split blocks). Because of this, one should notice increased log activity and archiving during on-line backups.

What is the Maximum allowed length of Record group Column?Record group column names cannot exceed 30 characters.

**Which parameter can be used to set read level consistency across multiple queries?**   
Read only

**What are the different types of Record Groups?**   
Query Record Groups  
NonQuery Record Groups  
State Record Groups

**From which designation is it preferred to send the output to the printed?**   
Previewer

**What are difference between post database commit and post-form commit?**   
Post-form commit fires once during the post and commit transactions process, after the database commit occurs. The post-form-commit trigger fires after inserts, updates and deletes have been posted to the database but before the transactions have been finalized in the issuing the command. The post-database-commit trigger fires after oracle forms issues the commit to finalized transactions.

**What are the different display styles of list items?**   
Pop\_listText\_listCombo box

Which of the above methods is the faster method? performing the calculation in the query is faster.

**With which function of summary item is the compute at options required?**   
percentage of total functions.

**What are parameters?**   
Parameters provide a simple mechanism for defining and setting the valuesof inputs that are required by a form at startup. Form parameters are variables of type char,number,date that you define at design time.

**What are the three types of user exits available ?**   
Oracle Precompiler exits, Oracle call interface, NonOracle user exits.

**How many windows in a form can have console?**   
Only one window in a form can display the console, and you cannot change the console assignment at runtime.

**What is an administrative (privileged) user? (for DBA )**  
Oracle DBAs and operators typically use administrative accounts to manage the database and database instance. An administrative account is a user that is granted SYSOPER or SYSDBA privileges. SYSDBA and SYSOPER allow access to a database instance even if it is not running. Control of these privileges is managed outside of the database via password files and special operating system groups. This password file is created with the orapwd utility.

**What are the two repeating frame always associated with matrix object?**   
One down repeating frame below one across repeating frame.

**What are the master-detail triggers?**  
On-Check\_delete\_masterOn\_clear\_detailsOn\_populate\_details

**How does one connect to an administrative user? (for DBA )**  
If an administrative user belongs to the "dba" group on Unix, or the "ORA\_DBA" (ORA\_sid\_DBA) group on NT, he/she can connect like this:   
connect / as sysdba  
No password is required. This is equivalent to the desupported "connect internal" method.   
A password is required for "non-secure" administrative access. These passwords are stored in password files. Remote connections via Net8 are classified as non-secure. Look at this example:   
connect sys/password as sysdba

**How does one create a password file? (for DBA )**  
The Oracle Password File ($ORACLE\_HOME/dbs/orapw or orapwSID) stores passwords for users with administrative privileges. One needs to create a password files before remote administrators (like OEM) will be allowed to connect.   
Follow this procedure to create a new password file:   
. Log in as the Oracle software owner   
. Runcommand: orapwd file=$ORACLE\_HOME/dbs/orapw$ORACLE\_SID password=mypasswd   
. Shutdown the database (SQLPLUS> SHUTDOWN IMMEDIATE)   
. Edit the INIT.ORA file and ensure REMOTE\_LOGIN\_PASSWORDFILE=exclusive is set.   
. Startup the database (SQLPLUS> STARTUP)   
NOTE: The orapwd utility presents a security risk in that it receives a password from the command line. This password is visible in the process table of many systems. Administrators needs to be aware of this!

**Is it possible to modify an external query in a report which contains it?**   
No.

**Does a grouping done for objects in the layout editor affect the grouping done in the data model editor?**   
No.

**How does one add users to a password file? (for DBA )**  
One can select from the SYS.V\_$PWFILE\_USERS view to see which users are listed in the password file. New users can be added to the password file by granting them SYSDBA or SYSOPER privileges, or by using the orapwd utility. GRANT SYSDBA TO scott;

**If a break order is set on a column would it affect columns which are under the column?**   
No

**Why are OPS$ accounts a security risk in a client/server environment? (for DBA)**  
If you allow people to log in with OPS$ accounts from Windows Workstations, you cannot be sure who they really are. With terminals, you can rely on operating system passwords, with Windows, you cannot.   
If you set REMOTE\_OS\_AUTHENT=TRUE in your init.ora file, Oracle assumes that the remote OS has authenticated the user. If REMOTE\_OS\_AUTHENT is set to FALSE (recommended), remote users will be unable to connect without a password. IDENTIFIED EXTERNALLY will only be in effect from the local host. Also, if you are using "OPS$" as your prefix, you will be able to log on locally with or without a password, regardless of whether you have identified your ID with a password or defined it to be IDENTIFIED EXTERNALLY.

**Do user parameters appear in the data modal editor in 2.5?**   
No

**Can you pass data parameters to forms?**   
No

**Is it possible to link two groups inside a cross products after the cross products group has been created?**   
no

**What are the different modals of windows?**   
Modalless windows  
Modal windows

**What are modal windows?**   
Modal windows are usually used as dialogs, and have restricted functionality compared to modelless windows. On some platforms for example operators cannot resize, scroll or iconify a modal window.

What are the different default triggers created when Master Deletes Property is set to Non-isolated? Master Deletes Property Resulting Triggers  
----------------------------------------------------  
Non-Isolated(the default) On-Check-Delete-Master  
On-Clear-Details  
On-Populate-Details

What are the different default triggers created when Master Deletes Property is set to isolated? Master Deletes Property Resulting Triggers  
---------------------------------------------------  
Isolated On-Clear-Details  
On-Populate-Details

**What are the different default triggers created when Master Deletes Property is set to Cascade?**   
Master Deletes Property Resulting Triggers  
---------------------------------------------------  
Cascading On-Clear-Details  
On-Populate-Details  
Pre-delete

**What is the diff. bet. setting up of parameters in reports 2.0 reports2.5?**   
LOVs can be attached to parameters in the reports 2.5 parameter form.

**What are the difference between lov & list item?**   
Lov is a property where as list item is an item. A list item can have only one column, lov can have one or more columns.

What is the advantage of the library?Libraries provide a convenient means of storing client-side program units and sharing them among multiple applications. Once you create a library, you can attach it to any other form, menu, or library modules. When you can call library program units from triggers menu items commands and user named routine, you write in the modules to which you have attach the library. When a library attaches another library, program units in the first library can reference program units in the attached library. Library support dynamic loading-that is library program units are loaded into an application only when needed. This can significantly reduce the run-time memory requirements of applications.

**What is lexical reference? How can it be created?**   
Lexical reference is place\_holder for text that can be embedded in a sql statements. A lexical reference can be created using & before the column or parameter name.

**What is system.coordination\_operation?**   
It represents the coordination causing event that occur on the master block in master-detail relation.

What is synchronize? It is a terminal screen with the internal state of the form. It updates the screen display to reflect the information that oracle forms has in its internal representation of the screen.

**What use of command line parameter cmd file?**   
It is a command line argument that allows you to specify a file that contain a set of arguments for r20run.

**What is a Text\_io Package?**   
It allows you to read and write information to a file in the file system.

**What is forms\_DDL?**   
Issues dynamic Sql statements at run time, including server side pl/SQl and DDL

**How is link tool operation different bet. reports 2 & 2.5?**   
In Reports 2.0 the link tool has to be selected and then two fields to be linked are selected and the link is automatically created. In 2.5 the first field is selected and the link tool is then used to link the first field to the second field.

**What are the different styles of activation of ole Objects?**   
In place activationExternal activation

**How do you reference a Parameter?**   
In Pl/Sql, You can reference and set the values of form parameters using bind variables syntax. Ex. PARAMETER name = '' or :block.item = PARAMETER Parameter name

**What is the difference between object embedding & linking in Oracle forms?**   
In Oracle forms, Embedded objects become part of the form module, and linked objects are references from a form module to a linked source file.

**Name of the functions used to get/set canvas properties?**   
Get\_view\_property, Set\_view\_property

**What are the built-ins that are used for setting the LOV properties at runtime?**   
get\_lov\_property  
set\_lov\_property

**What are the built-ins used for processing rows?**   
Get\_group\_row\_count(function)  
Get\_group\_selection\_count(function)  
Get\_group\_selection(function)  
Reset\_group\_selection(procedure)  
Set\_group\_selection(procedure)  
Unset\_group\_selection(procedure)

**What are built-ins used for Processing rows?**   
GET\_GROUP\_ROW\_COUNT(function)  
GET\_GROUP\_SELECTION\_COUNT(function)  
GET\_GROUP\_SELECTION(function)  
RESET\_GROUP\_SELECTION(procedure)  
SET\_GROUP\_SELECTION(procedure)  
UNSET\_GROUP\_SELECTION(procedure)

**What are the built-in used for getting cell values?**   
Get\_group\_char\_cell(function)  
Get\_groupcell(function)  
Get\_group\_number\_cell(function)

**What are the built-ins used for Getting cell values?**   
GET\_GROUP\_CHAR\_CELL (function)  
GET\_GROUPCELL(function)  
GET\_GROUP\_NUMBET\_CELL(function)

**Atleast how many set of data must a data model have before a data model can be base on it?**   
Four

**To execute row from being displayed that still use column in the row which property can be used?**   
Format trigger.

**What are different types of modules available in oracle form?**   
Form module - a collection of objects and code routines Menu modules - a collection of menus and menu item commands that together make up an application menu library module - a collection of user named procedures, functions and packages that can be called from other modules in the application

What is the remove on exit property? For a modelless window, it determines whether oracle forms hides the window automatically when the operators navigates to an item in the another window.

**What is WHEN-Database-record trigger?**   
Fires when oracle forms first marks a record as an insert or an update. The trigger fires as soon as oracle forms determines through validation that the record should be processed by the next post or commit as an insert or update. c generally occurs only when the operators modifies the first item in the record, and after the operator attempts to navigate out of the item.

**What is a difference between pre-select and pre-query?**   
Fires during the execute query and count query processing after oracle forms constructs the select statement to be issued, but before the statement is actually issued. The pre-query trigger fires just before oracle forms issues the select statement to the database after the operator as define the example records by entering the query criteria in enter query mode.Pre-query trigger fires before pre-select trigger.

**What are built-ins associated with timers?**   
find\_timercreate\_timerdelete\_timer

**What are the built-ins used for finding object ID functions?**   
Find\_group(function)  
Find\_column(function)

**What are the built-ins used for finding Object ID function?**   
FIND\_GROUP(function)  
FIND\_COLUMN(function)

**Any attempt to navigate programmatically to disabled form in a call\_form stack is allowed?**   
False

**Use the Add\_group\_row procedure to add a row to a static record group 1. true or false?**   
False

What third party tools can be used with Oracle EBU/ RMAN? (for DBA)The following Media Management Software Vendors have integrated their media management software packages with Oracle Recovery Manager and Oracle7 Enterprise Backup Utility. The Media Management Vendors will provide first line technical support for the integrated backup/recover solutions.   
Veritas NetBackup  
EMC Data Manager (EDM)  
HP OMNIBack II  
IBM's Tivoli Storage Manager - formerly ADSM  
Legato Networker  
ManageIT Backup and Recovery  
Sterling Software's SAMS:Alexandria - formerly from Spectralogic  
Sun Solstice Backup

**Why and when should one tune? (for DBA)**  
One of the biggest responsibilities of a DBA is to ensure that the Oracle database is tuned properly. The Oracle RDBMS is highly tunable and allows the database to be monitored and adjusted to increase its performance. One should do performance tuning for the following reasons:   
The speed of computing might be wasting valuable human time (users waiting for response); Enable your system to keep-up with the speed business is conducted; and Optimize hardware usage to save money (companies are spending millions on hardware). Although this FAQ is not overly concerned with hardware issues, one needs to remember than you cannot tune a Buick into a Ferrari.

**How can a break order be created on a column in an existing group? What are the various sub events a mouse double click event involves?**   
By dragging the column outside the group.

**What is the use of place holder column? What are the various sub events a mouse double click event involves?**   
A placeholder column is used to hold calculated values at a specified place rather than allowing is to appear in the actual row where it has to appear.

**What is the use of hidden column? What are the various sub events a mouse double click event involves?**   
A hidden column is used to when a column has to embed into boilerplate text.

**What database aspects should be monitored? (for DBA)**  
One should implement a monitoring system to constantly monitor the following aspects of a database. Writing custom scripts, implementing Oracle's Enterprise Manager, or buying a third-party monitoring product can achieve this. If an alarm is triggered, the system should automatically notify the DBA (e-mail, page, etc.) to take appropriate action.   
Infrastructure availability:   
. Is the database up and responding to requests   
. Are the listeners up and responding to requests   
. Are the Oracle Names and LDAP Servers up and responding to requests   
. Are the Web Listeners up and responding to requests   
  
Things that can cause service outages:   
. Is the archive log destination filling up?   
. Objects getting close to their max extents   
. User and process limits reached   
  
Things that can cause bad performance:   
See question "What tuning indicators can one use?".

**Where should the tuning effort be directed? (for DBA)**  
Consider the following areas for tuning. The order in which steps are listed needs to be maintained to prevent tuning side effects. For example, it is no good increasing the buffer cache if you can reduce I/O by rewriting a SQL statement. Database Design (if it's not too late):  
Poor system performance usually results from a poor database design. One should generally normalize to the 3NF. Selective denormalization can provide valuable performance improvements. When designing, always keep the "data access path" in mind. Also look at proper data partitioning, data replication, aggregation tables for decision support systems, etc.   
Application Tuning:  
Experience showed that approximately 80% of all Oracle system performance problems are resolved by coding optimal SQL. Also consider proper scheduling of batch tasks after peak working hours.   
Memory Tuning:  
Properly size your database buffers (shared pool, buffer cache, log buffer, etc) by looking at your buffer hit ratios. Pin large objects into memory to prevent frequent reloads.   
Disk I/O Tuning:  
Database files needs to be properly sized and placed to provide maximum disk subsystem throughput. Also look for frequent disk sorts, full table scans, missing indexes, row chaining, data fragmentation, etc  
Eliminate Database Contention:  
Study database locks, latches and wait events carefully and eliminate where possible. Tune the Operating System:  
Monitor and tune operating system CPU, I/O and memory utilization. For more information, read the related Oracle FAQ dealing with your specific operating system.

**What are the various sub events a mouse double click event involves? What are the various sub events a mouse double click event involves?**   
Double clicking the mouse consists of the mouse down, mouse up, mouse click, mouse down & mouse up events.

**What are the default parameter that appear at run time in the parameter screen? What are the various sub events a mouse double click event involves?**   
Destype and Desname.

**What are the built-ins used for Creating and deleting groups?**   
CREATE-GROUP (function)  
CREATE\_GROUP\_FROM\_QUERY(function)  
DELETE\_GROUP(procedure)

**What are different types of canvas views?**   
Content canvas views  
Stacked canvas views  
Horizontal toolbar  
vertical toolbar.

What are the different types of Delete details we can establish in Master-Details?  
Cascade  
Isolate  
Non-isolate

**What is relation between the window and canvas views?**   
Canvas views are the back ground objects on which you place the interface items (Text items), check boxes, radio groups etc.,) and boilerplate objects (boxes, lines, images etc.,) that operators interact with us they run your form . Each canvas views displayed in a window.

**What is a User\_exit?**   
Calls the user exit named in the user\_exit\_string. Invokes a 3Gl program by name which has been properly linked into your current oracle forms executable.

**How is it possible to select generate a select set for the query in the query property sheet?**   
By using the tables/columns button and then specifying the table and the column names.

**How can values be passed bet. precompiler exits & Oracle call interface?**   
By using the statement EXECIAFGET & EXECIAFPUT.

**How can a square be drawn in the layout editor of the report writer?**   
By using the rectangle tool while pressing the (Constraint) key.

**How can a text file be attached to a report while creating in the report writer?**   
By using the link file property in the layout boiler plate property sheet.

**How can I message to passed to the user from reports?**   
By using SRW.MESSAGE function.

**Does one need to drop/ truncate objects before importing? (for DBA)**  
Before one import rows into already populated tables, one needs to truncate or drop these tables to get rid of the old data. If not, the new data will be appended to the existing tables. One must always DROP existing Sequences before re-importing. If the sequences are not dropped, they will generate numbers inconsistent with the rest of the database. Note: It is also advisable to drop indexes before importing to speed up the import process. Indexes can easily be recreated after the data was successfully imported.

**How can a button be used in a report to give a drill down facility?**   
By setting the action associated with button to Execute pl/sql option and using the SRW.Run\_report function.

**Can one import/export between different versions of Oracle? (for DBA)**  
Different versions of the import utility is upwards compatible. This means that one can take an export file created from an old export version, and import it using a later version of the import utility. This is quite an effective way of upgrading a database from one release of Oracle to the next.   
Oracle also ships some previous catexpX.sql scripts that can be executed as user SYS enabling older imp/exp versions to work (for backwards compatibility). For example, one can run $ORACLE\_HOME/rdbms/admin/catexp7.sql on an Oracle 8 database to allow the Oracle 7.3 exp/imp utilities to run against an Oracle 8 database.

**What are different types of images?**   
Boiler plate imagesImage Items

**Can one export to multiple files?/ Can one beat the Unix 2 Gig limit? (for DBA)**  
From Oracle8i, the export utility supports multiple output files. This feature enables large exports to be divided into files whose sizes will not exceed any operating system limits (FILESIZE= parameter). When importing from multi-file export you must provide the same filenames in the same sequence in the FILE= parameter. Look at this example:   
exp SCOTT/TIGER FILE=D:\F1.dmp,E:\F2.dmp FILESIZE=10m LOG=scott.log  
Use the following technique if you use an Oracle version prior to 8i:   
Create a compressed export on the fly. Depending on the type of data, you probably can export up to 10 gigabytes to a single file. This example uses gzip. It offers the best compression I know of, but you can also substitute it with zip, compress or whatever.   
# create a named pipe  
mknod exp.pipe p  
# read the pipe - output to zip file in the background  
gzip < exp.pipe > scott.exp.gz &  
# feed the pipe  
exp userid=scott/tiger file=exp.pipe ...

**What is bind reference and how can it be created?**   
Bind reference are used to replace the single value in sql, pl/sql statements a bind reference can be created using a (:) before a column or a parameter name.

**How can one improve Import/ Export performance? (for DBA)**  
EXPORT:   
  
. Set the BUFFER parameter to a high value (e.g. 2M)   
. Set the RECORDLENGTH parameter to a high value (e.g. 64K)   
. Stop unnecessary applications to free-up resources for your job.   
. If you run multiple export sessions, ensure they write to different physical disks.   
. DO NOT export to an NFS mounted filesystem. It will take forever.   
IMPORT:   
  
. Create an indexfile so that you can create indexes AFTER you have imported data. Do this by setting INDEXFILE to a filename and then import. No data will be imported but a file containing index definitions will be created. You must edit this file afterwards and supply the passwords for the schemas on all CONNECT statements.   
. Place the file to be imported on a separate physical disk from the oracle data files   
. Increase DB\_CACHE\_SIZE (DB\_BLOCK\_BUFFERS prior to 9i) considerably in the init$SID.ora file   
. Set the LOG\_BUFFER to a big value and restart oracle.   
. Stop redo log archiving if it is running (ALTER DATABASE NOARCHIVELOG;)   
. Create a BIG tablespace with a BIG rollback segment inside. Set all other rollback segments offline (except the SYSTEM rollback segment of course). The rollback segment must be as big as your biggest table (I think?)  
. Use COMMIT=N in the import parameter file if you can afford it   
. Use ANALYZE=N in the import parameter file to avoid time consuming ANALYZE statements   
. Remember to run the indexfile previously created

**Give the sequence of execution of the various report triggers?**   
Before form , After form , Before report, Between page, After report.

**What are the common Import/ Export problems? (for DBA )**  
ORA-00001: Unique constraint (...) violated - You are importing duplicate rows. Use IGNORE=NO to skip tables that already exist (imp will give an error if the object is re-created).  
ORA-01555: Snapshot too old - Ask your users to STOP working while you are exporting or use parameter CONSISTENT=NO  
ORA-01562: Failed to extend rollback segment - Create bigger rollback segments or set parameter COMMIT=Y while importing  
IMP-00015: Statement failed ... object already exists... - Use the IGNORE=Y import parameter to ignore these errors, but be careful as you might end up with duplicate rows.

**Why is it preferable to create a fewer no. of queries in the data model?**   
Because for each query, report has to open a separate cursor and has to rebind, execute and fetch data.

Where is the external query executed at the client or the server?At the server.

**Where is a procedure return in an external pl/sql library executed at the client or at the server?**   
At the client.

**What is coordination Event?**   
Any event that makes a different record in the master block the current record is a coordination causing event.

**What is the difference between OLE Server & Ole Container?**   
An Ole server application creates ole Objects that are embedded or linked in ole Containers ex. Ole servers are ms\_word & ms\_excel. OLE containers provide a place to store, display and manipulate objects that are created by ole server applications. Ex. oracle forms is an example of an ole Container.

What is an object group? An object group is a container for a group of objects; you define an object group when you want to package related objects, so that you copy or reference them in other modules.

**What is an LOV?**   
An LOV is a scrollable popup window that provides the operator with either a single or multi column selection list.

**At what point of report execution is the before Report trigger fired?**   
After the query is executed but before the report is executed and the records are displayed.

**What are the built -ins used for Modifying a groups structure?**   
ADD-GROUP\_COLUMN (function)  
ADD\_GROUP\_ROW (procedure)  
DELETE\_GROUP\_ROW(procedure)

**What is an user exit used for?**   
A way in which to pass control (and possibly arguments ) form Oracle report to another Oracle products of 3 GL and then return control ( and ) back to Oracle reports.

**What is the User-Named Editor?**   
A user named editor has the same text editing functionality as the default editor, but, because it is a named object, you can specify editor attributes such as windows display size, position, and title.

**My database was terminated while in BACKUP MODE, do I need to recover? (for DBA)**  
If a database was terminated while one of its tablespaces was in BACKUP MODE (ALTER TABLESPACE xyz BEGIN BACKUP;), it will tell you that media recovery is required when you try to restart the database. The DBA is then required to recover the database and apply all archived logs to the database. However, from Oracle7.2, you can simply take the individual datafiles out of backup mode and restart the database.   
ALTER DATABASE DATAFILE '/path/filename' END BACKUP;  
One can select from V$BACKUP to see which datafiles are in backup mode. This normally saves a significant amount of database down time.   
Thiru Vadivelu contributed the following:  
From Oracle9i onwards, the following command can be used to take all of the datafiles out of hot backup mode:   
ALTER DATABASE END BACKUP;  
The above commands need to be issued when the database is mounted.

**What is a Static Record Group?**   
A static record group is not associated with a query, rather, you define its structure and row values at design time, and they remain fixed at runtime.

**What is a record group?**   
A record group is an internal Oracle Forms that structure that has a column/row framework similar to a database table. However, unlike database tables, record groups are separate objects that belong to the form module which they are defined.

**My database is down and I cannot restore. What now? (for DBA )**  
Recovery without any backup is normally not supported, however, Oracle Consulting can sometimes extract data from an offline database using a utility called DUL (Disk UnLoad). This utility reads data in the data files and unloads it into SQL\*Loader or export dump files. DUL does not care about rollback segments, corrupted blocks, etc, and can thus not guarantee that the data is not logically corrupt. It is intended as an absolute last resort and will most likely cost your company a lot of money!!!

**I've lost my REDOLOG files, how can I get my DB back? (for DBA)**  
The following INIT.ORA parameter may be required if your current redo logs are corrupted or blown away. Caution is advised when enabling this parameter as you might end-up losing your entire database. Please contact Oracle Support before using it. \_allow\_resetlogs\_corruption = true

**What is a property clause?**   
A property clause is a named object that contains a list of properties and their settings. Once you create a property clause you can base other object on it. An object based on a property can inherit the setting of any property in the clause that makes sense for that object.

**What is a physical page ? & What is a logical page ?**   
A physical page is a size of a page. That is output by the printer. The logical page is the size of one page of the actual report as seen in the Previewer.

**I've lost some Rollback Segments, how can I get my DB back? (for DBA)**  
Re-start your database with the following INIT.ORA parameter if one of your rollback segments is corrupted. You can then drop the corrupted rollback segments and create it from scratch.   
Caution is advised when enabling this parameter, as uncommitted transactions will be marked as committed. One can very well end up with lost or inconsistent data!!! Please contact Oracle Support before using it. \_Corrupted\_rollback\_segments = (rbs01, rbs01, rbs03, rbs04)

**What are the differences between EBU and RMAN? (for DBA)**  
Enterprise Backup Utility (EBU) is a functionally rich, high performance interface for backing up Oracle7 databases. It is sometimes referred to as OEBU for Oracle Enterprise Backup Utility. The Oracle Recovery Manager (RMAN) utility that ships with Oracle8 and above is similar to Oracle7's EBU utility. However, there is no direct upgrade path from EBU to RMAN.

**How does one create a RMAN recovery catalog? (for DBA)**  
Start by creating a database schema (usually called rman). Assign an appropriate tablespace to it and grant it the recovery\_catalog\_owner role. Look at this example:   
sqlplus sys  
SQL>create user rman identified by rman;  
SQL> alter user rman default tablespace tools temporary tablespace temp;  
SQL> alter user rman quota unlimited on tools;  
SQL> grant connect, resource, recovery\_catalog\_owner to rman;  
SQL> exit;  
Next, log in to rman and create the catalog schema. Prior to Oracle 8i this was done by running the catrman.sql script. rman catalog rman/rman  
RMAN>create catalog tablespace tools;  
RMAN> exit;  
You can now continue by registering your databases in the catalog. Look at this example:   
rman catalog rman/rman target backdba/backdba  
RMAN> register database;

**How can a group in a cross products be visually distinguished from a group that does not form a cross product?**   
A group that forms part of a cross product will have a thicker border.

**What is the frame & repeating frame?**   
A frame is a holder for a group of fields. A repeating frame is used to display a set of records when the no. of records that are to displayed is not known before.

**What is a combo box?**   
A combo box style list item combines the features found in list and text item. Unlike the pop list or the text list style list items, the combo box style list item will both display fixed values and accept one operator entered value.

What are three panes that appear in the run time pl/sql interpreter?   
1. Source pane.  
2. interpreter pane.  
3. Navigator pane.

**What are the two panes that Appear in the design time pl/sql interpreter?**   
1. Source pane.  
2. Interpreter pane

**What are the two ways by which data can be generated for a parameters list of values?**   
1. Using static values.  
2. Writing select statement.

**What are the various methods of performing a calculation in a report ?**   
1. Perform the calculation in the SQL statements itself.  
2. Use a calculated / summary column in the data model.

**What are the default extensions of the files created by menu module?**   
.mmb,  
.mmx

**What are the default extensions of the files created by forms modules?**   
.fmb - form module binary  
.fmx - form module executable

**To display the page no. for each page on a report what would be the source & logical page no. or & of physical page no.?**   
& physical page no.

It is possible to use raw devices as data files and what is the advantages over file. system files ?Yes. The advantages over file system files. I/O will be improved because Oracle is bye-passing the kernnel which writing into disk. Disk Corruption will be very less.

**What are disadvantages of having raw devices ?**   
We should depend on export/import utility for backup/recovery (fully reliable) The tar command cannot be used for physical file backup, instead we can use dd command which is less flexible and has limited recoveries.

**What is the significance of having storage clause ?**   
We can plan the storage for a table as how much initial extents are required, how much can be extended next, how much % should leave free for managing row updations etc.,

**What is the use of INCTYPE option in EXP command ?**   
Type export should be performed COMPLETE,CUMULATIVE,INCREMENTAL. List the sequence of events when a large transaction that exceeds beyond its optimal value when an entry wraps and causes the rollback segment toexpand into anotion Completes. e. will be written.

**What is the use of FILE option in IMP command ?**   
The name of the file from which import should be performed.

**What is a Shared SQL pool?**   
The data dictionary cache is stored in an area in SGA called the Shared SQL Pool. This will allow sharing of parsed SQL statements among concurrent users.

**What is hot backup and how it can be taken?**   
Taking backup of archive log files when database is open. For this the ARCHIVELOG mode should be enabled. The following files need to be backed up. All data files. All Archive log, redo log files. All control files.

**List the Optional Flexible Architecture (OFA) of Oracle database? or How can we organize the tablespaces in Oracle database to have maximum performance ?**   
SYSTEM - Data dictionary tables.  
DATA - Standard operational tables.  
DATA2- Static tables used for standard operations  
INDEXES - Indexes for Standard operational tables.  
INDEXES1 - Indexes of static tables used for standard operations.  
TOOLS - Tools table.  
TOOLS1 - Indexes for tools table.  
RBS - Standard Operations Rollback Segments,  
RBS1,RBS2 - Additional/Special Rollback segments.  
TEMP - Temporary purpose tablespace  
TEMP\_USER - Temporary tablespace for users.  
USERS - User tablespace.

**How to implement the multiple control files for an existing database ?**   
Shutdown the database Copy one of the existing control file to new location Edit Config ora file by adding new control file. name Restart the database.

**What is advantage of having disk shadowing/ Mirroring ?**   
Shadow set of disks save as a backup in the event of disk failure. In most Operating System if any disk failure occurs it automatically switchover to place of failed disk. Improved performance because most OS support volume shadowing can direct file I/O request to use the shadow set of files instead of the main set of files. This reduces I/O load on the main set of disks.

**How will you force database to use particular rollback segment ?**   
SET TRANSACTION USE ROLLBACK SEGMENT rbs\_name.

**Why query fails sometimes ?**   
Rollback segment dynamically extent to handle larger transactions entry loads. A single transaction may wipeout all available free space in the Rollback Segment Tablespace. This prevents other user using Rollback segments.

**What is the use of RECORD LENGTH option in EXP command ?**   
Record length in bytes.

**How will you monitor rollback segment status ?**   
Querying the DBA\_ROLLBACK\_SEGS view  
IN USE - Rollback Segment is on-line.  
AVAILABLE - Rollback Segment available but not on-line.  
OFF-LINE - Rollback Segment off-line  
INVALID - Rollback Segment Dropped.  
NEEDS RECOVERY - Contains data but need recovery or corupted.  
PARTLY AVAILABLE - Contains data from an unresolved transaction involving a distributed database.

**What is meant by Redo Log file mirroring ? How it can be achieved?**   
Process of having a copy of redo log files is called mirroring. This can be achieved by creating group of log files together, so that LGWR will automatically writes them to all the members of the current on-line redo log group. If any one group fails then database automatically switch over to next group. It degrades performance.

**Which parameter in Storage clause will reduce no. of rows per block?**   
PCTFREE parameter  
Row size also reduces no of rows per block.

**What is meant by recursive hints ?**   
Number of times processes repeatedly query the dictionary table is called recursive hints. It is due to the data dictionary cache is too small. By increasing the SHARED\_POOL\_SIZE parameter we can optimize the size of Data Dictionary Cache.

**What is the use of PARFILE option in EXP command ?**   
Name of the parameter file to be passed for export.

**What is the difference between locks, latches, enqueues and semaphores? (for DBA)**  
A latch is an internal Oracle mechanism used to protect data structures in the SGA from simultaneous access. Atomic hardware instructions like TEST-AND-SET is used to implement latches. Latches are more restrictive than locks in that they are always exclusive. Latches are never queued, but will spin or sleep until they obtain a resource, or time out.  
Enqueues and locks are different names for the same thing. Both support queuing and concurrency. They are queued and serviced in a first-in-first-out (FIFO) order.   
Semaphores are an operating system facility used to control waiting. Semaphores are controlled by the following Unix parameters: semmni, semmns and semmsl. Typical settings are:   
semmns = sum of the "processes" parameter for each instance  
(see init<instance>.ora for each instance)  
semmni = number of instances running simultaneously;  
semmsl = semmns

**What is a logical backup?**   
Logical backup involves reading a set of database records and writing them into a file. Export utility is used for taking backup and Import utility is used to recover from backup.

**Where can one get a list of all hidden Oracle parameters? (for DBA)**  
Oracle initialization or INIT.ORA parameters with an underscore in front are hidden or unsupported parameters. One can get a list of all hidden parameters by executing this query:   
select \*  
from SYS.X$KSPPI  
where substr(KSPPINM,1,1) = '\_';  
The following query displays parameter names with their current value:   
select a.ksppinm "Parameter", b.ksppstvl "Session Value", c.ksppstvl "Instance Value"  
from x$ksppi a, x$ksppcv b, x$ksppsv c  
where a.indx = b.indx and a.indx = c.indx  
and substr(ksppinm,1,1)='\_'  
order by a.ksppinm;  
Remember: Thou shall not play with undocumented parameters!

**What is a database EVENT and how does one set it? (for DBA)**  
Oracle trace events are useful for debugging the Oracle database server. The following two examples are simply to demonstrate syntax. Refer to later notes on this page for an explanation of what these particular events do.   
Either adding them to the INIT.ORA parameter file can activate events. E.g.   
event='1401 trace name errorstack, level 12'  
... or, by issuing an ALTER SESSION SET EVENTS command: E.g.   
alter session set events '10046 trace name context forever, level 4';  
The alter session method only affects the user's current session, whereas changes to the INIT.ORA file will affect all sessions once the database has been restarted.

**What is a Rollback segment entry ?**   
It is the set of before image data blocks that contain rows that are modified by a transaction. Each Rollback Segment entry must be completed within one rollback segment. A single rollback segment can have multiple rollback segment entries.

**What database events can be set? (for DBA)**  
The following events are frequently used by DBAs and Oracle Support to diagnose problems:   
" 10046 trace name context forever, level 4 Trace SQL statements and show bind variables in trace output.   
" 10046 trace name context forever, level 8 This shows wait events in the SQL trace files   
" 10046 trace name context forever, level 12 This shows both bind variable names and wait events in the SQL trace files   
" 1401 trace name errorstack, level 12 1401 trace name errorstack, level 4 1401 trace name processstate Dumps out trace information if an ORA-1401 "inserted value too large for column" error occurs. The 1401 can be replaced by any other Oracle Server error code that you want to trace.   
" 60 trace name errorstack level 10 Show where in the code Oracle gets a deadlock (ORA-60), and may help to diagnose the problem.   
The following lists of events are examples only. They might be version specific, so please call Oracle before using them:   
" 10210 trace name context forever, level 10 10211 trace name context forever, level 10 10231 trace name context forever, level 10 These events prevent database block corruptions   
" 10049 trace name context forever, level 2 Memory protect cursor   
" 10210 trace name context forever, level 2 Data block check   
" 10211 trace name context forever, level 2 Index block check   
" 10235 trace name context forever, level 1 Memory heap check   
" 10262 trace name context forever, level 300 Allow 300 bytes memory leak for connections   
Note: You can use the Unix oerr command to get the description of an event. On Unix, you can type "oerr ora 10053" from the command prompt to get event details.

**How can one dump internal database structures? (for DBA)**  
The following (mostly undocumented) commands can be used to obtain information about internal database structures.   
o Dump control file contents  
alter session set events 'immediate trace name CONTROLF level 10'  
/  
o Dump file headers  
alter session set events 'immediate trace name FILE\_HDRS level 10'  
/  
o Dump redo log headers  
alter session set events 'immediate trace name REDOHDR level 10'  
/  
o Dump the system state  
NOTE: Take 3 successive SYSTEMSTATE dumps, with 10-minute intervals alter session set events 'immediate trace name SYSTEMSTATE level 10'  
/  
o Dump the process state  
alter session set events 'immediate trace name PROCESSSTATE level 10'  
/  
o Dump Library Cache details  
alter session set events 'immediate trace name library cache level 10'  
/  
o Dump optimizer statistics whenever a SQL statement is parsed (hint: change statement or flush pool) alter session set events '10053 trace name context forever, level 1'  
/  
o Dump a database block (File/ Block must be converted to DBA address) Convert file and block number to a DBA (database block address).   
Eg: variable x varchar2;  
exec :x := dbms\_utility.make\_data\_block\_address(1,12);  
print x  
alter session set events 'immediate trace name blockdump level 50360894'  
/

**What are the different kind of export backups?**   
Full back - Complete database  
Incremental - Only affected tables from last incremental date/full backup date.  
Cumulative backup - Only affected table from the last cumulative date/full backup date.

**How free extents are managed in Ver 6.0 and Ver 7.0 ?**   
Free extents cannot be merged together in Ver 6.0.  
Free extents are periodically coalesces with the neighboring free extent in Ver 7.0

What is the use of RECORD option in EXP command? For Incremental exports, the flag indirects whether a record will be stores data dictionary tables recording the export.

What is the use of ROWS option in EXP command ?Flag to indicate whether table rows should be exported. If 'N' only DDL statements for the database objects will be created.

**What is the use of COMPRESS option in EXP command ?**   
Flag to indicate whether export should compress fragmented segments into single extents.

**How will you swap objects into a different table space for an existing database ?**   
Export the user  
Perform import using the command imp system/manager file=export.dmp indexfile=newrite.sql.  
This will create all definitions into newfile.sql. Drop necessary objects.  
Run the script newfile.sql after altering the tablespaces.  
Import from the backup for the necessary objects.

**How does Space allocation table place within a block ?**   
Each block contains entries as follows  
Fixed block header  
Variable block header  
Row Header,row date (multiple rows may exists)  
PCTEREE (% of free space for row updation in future)

**What are the factors causing the reparsing of SQL statements in SGA?**   
Due to insufficient Shared SQL pool size. Monitor the ratio of the reloads takes place while executing SQL statements. If the ratio is greater than 1 then increase the SHARED\_POOL\_SIZE. LOGICAL & PHYSICAL ARCHITECTURE OF DATABASE.

**What is dictionary cache ?**   
Dictionary cache is information about the databse objects stored in a data dictionary table.

**What is a Control file ?**   
Database overall physical architecture is maintained in a file called control file. It will be used to maintain internal consistency and guide recovery operations. Multiple copies of control files are advisable.

**What is Database Buffers ?**   
Database buffers are cache in the SGA used to hold the data blocks that are read from the data segments in the database such as tables, indexes and clusters DB\_BLOCK\_BUFFERS parameter in INIT.ORA decides the size.

**How will you create multiple rollback segments in a database ?**   
Create a database which implicitly creates a SYSTEM Rollback Segment in a SYSTEM tablespace. Create a Second Rollback Segment name R0 in the SYSTEM tablespace. Make new rollback segment available (After shutdown, modify init.ora file and Start database) Create other tablespaces (RBS) for rollback segments. Deactivate Rollback Segment R0 and activate the newly created rollback segments.

**What is cold backup? What are the elements of it?**   
Cold backup is taking backup of all physical files after normal shutdown of database. We need to take.  
- All Data files.  
- All Control files.  
- All on-line redo log files.  
- The init.ora file (Optional)

**What is meant by redo log buffer ?**   
Changes made to entries are written to the on-line redo log files. So that they can be used in roll forward operations during database recoveries. Before writing them into the redo log files, they will first brought to redo log buffers in SGA and LGWR will write into files frequently. LOG\_BUFFER parameter will decide the size.

**How will you estimate the space required by a non-clustered tables?**   
Calculate the total header size  
Calculate the available dataspace per data block  
Calculate the combined column lengths of the average row  
Calculate the total average row size.  
Calculate the average number rows that can fit in a block  
Calculate the number of blocks and bytes required for the table.  
After arriving the calculation, add 10 % additional space to calculate the initial extent size for a working table.

**How will you monitor the space allocation ?**   
By querying DBA\_SEGMENT table/view.

**What is meant by free extent ?**   
A free extent is a collection of continuous free blocks in tablespace. When a segment is dropped its extents are reallocated and are marked as free.

**What is the use of IGNORE option in IMP command ?**   
A flag to indicate whether the import should ignore errors encounter when issuing CREATE commands.

**What is the use of ANALYSE ( Ver 7) option in EXP command ?**   
A flag to indicate whether statistical information about the exported objects should be written to export dump file.

**What is the use of ROWS option in IMP command ?**   
A flag to indicate whether rows should be imported. If this is set to 'N' then only DDL for database objects will be executed.

**What is the use of INDEXES option in EXP command ?**   
A flag to indicate whether indexes on tables will be exported.

**What is the use of INDEXES option in IMP command ?**   
A flag to indicate whether import should import index on tables or not.

**What is the use of GRANT option in EXP command?**   
A flag to indicate whether grants on databse objects will be exported or not. Value is 'Y' or 'N'.

**What is the use of GRANT option in IMP command ?**   
A flag to indicate whether grants on database objects will be imported.

**What is the use of FULL option in EXP command ?**   
A flag to indicate whether full databse export should be performed.

**What is the use of SHOW option in IMP command ?**   
A flag to indicate whether file content should be displayed or not.

**What is the use of CONSTRAINTS option in EXP command ?**   
A flag to indicate whether constraints on table need to be exported.

**What is the use of CONSISTENT (Ver 7) option in EXP command ?**   
A flag to indicate whether a read consistent version of all the exported objects should be maintained.

**What are the different methods of backing up oracle database ?**   
- Logical Backups  
- Cold Backups  
- Hot Backups (Archive log)

**What is the difference between ON-VALIDATE-FIELD trigger and a POST-CHANGE trigger ?**   
When you changes the Existing value to null, the On-validate field trigger will fire post change trigger will not fire. At the time of execute-query post-change trigger will fire, on-validate field trigger will not fire.

**When is PRE-QUERY trigger executed ?**   
When Execute-query or count-query Package procedures are invoked.

How do you trap the error in forms 3.0 ?using On-Message or On-Error triggers.

**How many pages you can in a single form ?**   
Unlimited

**While specifying master/detail relationship between two blocks specifying the join condition is a must ?   
True or False. ?**   
True

EXIT\_FORM is a restricted package procedure ? **a. True b. False**   
True

**What is the usage of an ON-INSERT,ON-DELETE and ON-UPDATE TRIGGERS ?**   
These triggers are executes when inserting, deleting and updating operations are performed and can be used to change the default function of insert, delete or update respectively. For Eg, instead of inserting a row in a table an existing row can be updated in the same table.

**What are the types of Pop-up window ?**   
the pop-up field editor  
pop-up list of values  
pop-up pages.  
Alert :

**What is an SQL \*FORMS ?**   
SQL \*forms is 4GL tool for developing and executing; Oracle based interactive application.

**How do you control the constraints in forms ?**   
Select the use constraint property is ON Block definition screen.  
BLOCK

**What is the difference between restricted and unrestricted package procedure ?**   
Restricted package procedure that affects the basic functions of SQL \* Forms. It cannot used in all triggers except key triggers. Unrestricted package procedure that does not interfere with the basic functions of SQL \* Forms it can be used in any triggers.

A query fetched 10 records How many times does a PRE-QUERY Trigger and POST-QUERY Trigger will get executed ? PRE-QUERY fires once.  
POST-QUERY fires 10 times.

**Give the sequence in which triggers fired during insert operations, when the following 3 triggers are defined at the same block level ?**   
a. ON-INSERT b. POST-INSERT c. PRE-INSERT

**State the order in which these triggers are executed ?**   
POST-FIELD,ON-VALIDATE-FIELD,POST-CHANGE and KEY-NEXTFLD. KEY-NEXTFLD,POST-CHANGE, ON-VALIDATE-FIELD, POST-FIELD. g.

**What the PAUSE package procedure does ?**   
Pause suspends processing until the operator presses a function key

**What do you mean by a page ?**   
Pages are collection of display information, such as constant text and graphics

**What are the type of User Exits ?**   
ORACLE Precompliers user exits  
OCI (ORACLE Call Interface)  
Non-ORACEL user exits.  
Page :

**What is the difference between an ON-VALIDATE-FIELD trigger and a trigger ?**   
On-validate-field trigger fires, when the field Validation status New or changed. Post-field-trigger whenever the control leaving form the field, it will fire.

**Can we use a restricted package procedure in ON-VALIDATE-FIELD Trigger ?**   
No

**Is a Key startup trigger fires as result of a operator pressing a key explicitly ?**   
No

**Can we use GO-BLOCK package in a pre-field trigger ?**   
No

**Can we create two blocks with the same name in form 3.0 ?**   
No

What does an on-clear-block Trigger fire? It fires just before SQL \* forms the current block.

**Name the two files that are created when you generate the form give the filex extension ?**   
INP (Source File)  
FRM (Executable File)

**What package procedure used for invoke sql \*plus from sql \*forms ?**   
Host (E.g. Host (sqlplus))

**What is the significance of PAGE 0 in forms 3.0 ?**   
Hide the fields for internal calculation.

**What are the different types of key triggers ?**   
Function Key  
Key-function  
Key-others  
Key-startup

**What is the difference between a Function Key Trigger and Key Function Trigger ?**   
Function key triggers are associated with individual SQL\*FORMS function keys You can attach Key function triggers to 10 keys or key sequences that normally do not perform any SQL \* FORMS operations. These keys referred as key F0 through key F9.

**Committed block sometimes refer to a BASE TABLE ?**   
False

Error\_Code is a package proecdure ?  **a. True b. false**  
False

When is cost based optimization triggered? (for DBA)It's important to have statistics on all tables for the CBO (Cost Based Optimizer) to work correctly. If one table involved in a statement does not have statistics, Oracle has to revert to rule-based optimization for that statement. So you really want for all tables to have statistics right away; it won't help much to just have the larger tables analyzed.  
Generally, the CBO can change the execution plan when you:   
1. Change statistics of objects by doing an ANALYZE;   
2. Change some initialization parameters (for example: hash\_join\_enabled, sort\_area\_size, db\_file\_multiblock\_read\_count).

**How can one optimize %XYZ% queries? (for DBA)**  
It is possible to improve %XYZ% queries by forcing the optimizer to scan all the entries from the index instead of the table. This can be done by specifying hints. If the index is physically smaller than the table (which is usually the case) it will take less time to scan the entire index than to scan the entire table.

**What Enter package procedure does ?**   
Enter Validate-data in the current validation unit.

**Where can one find I/O statistics per table? (for DBA)**  
The UTLESTAT report shows I/O per tablespace but one cannot see what tables in the tablespace has the most I/O. The $ORACLE\_HOME/rdbms/admin/catio.sql script creates a sample\_io procedure and table to gather the required information. After executing the procedure, one can do a simple SELECT \* FROM io\_per\_object; to extract the required information. For more details, look at the header comments in the $ORACLE\_HOME/rdbms/admin/catio.sql script.

My query was fine last week and now it is slow. Why? (for DBA)  
The likely cause of this is because the execution plan has changed. Generate a current explain plan of the offending query and compare it to a previous one that was taken when the query was performing well. Usually the previous plan is not available.   
Some factors that can cause a plan to change are:   
. Which tables are currently analyzed? Were they previously analyzed? (ie. Was the query using RBO and now CBO?)  
. Has OPTIMIZER\_MODE been changed in INIT.ORA?   
. Has the DEGREE of parallelism been defined/changed on any table?   
. Have the tables been re-analyzed? Were the tables analyzed using estimate or compute? If estimate, what percentage was used?   
. Have the statistics changed?   
. Has the INIT.ORA parameter DB\_FILE\_MULTIBLOCK\_READ\_COUNT been changed?   
. Has the INIT.ORA parameter SORT\_AREA\_SIZE been changed?   
. Have any other INIT.ORA parameters been changed?   
. What do you think the plan should be? Run the query with hints to see if this produces the required performance.

**Why is Oracle not using the damn index? (for DBA)**  
This problem normally only arises when the query plan is being generated by the Cost Based Optimizer. The usual cause is because the CBO calculates that executing a Full Table Scan would be faster than accessing the table via the index.  
Fundamental things that can be checked are:   
. USER\_TAB\_COLUMNS.NUM\_DISTINCT - This column defines the number of distinct values the column holds.   
. USER\_TABLES.NUM\_ROWS - If NUM\_DISTINCT = NUM\_ROWS then using an index would be preferable to doing a FULL TABLE SCAN. As the NUM\_DISTINCT decreases, the cost of using an index increase thereby is making the index less desirable.   
. USER\_INDEXES.CLUSTERING\_FACTOR - This defines how ordered the rows are in the index. If CLUSTERING\_FACTOR approaches the number of blocks in the table, the rows are ordered. If it approaches the number of rows in the table, the rows are randomly ordered. In such a case, it is unlikely that index entries in the same leaf block will point to rows in the same data blocks.  
. Decrease the INIT.ORA parameter DB\_FILE\_MULTIBLOCK\_READ\_COUNT - A higher value will make the cost of a FULL TABLE SCAN cheaper.   
. Remember that you MUST supply the leading column of an index, for the index to be used (unless you use a FAST FULL SCAN or SKIP SCANNING).   
. There are many other factors that affect the cost, but sometimes the above can help to show why an index is not being used by the CBO. If from checking the above you still feel that the query should be using an index, try specifying an index hint. Obtain an explain plan of the query either using TKPROF with TIMED\_STATISTICS, so that one can see the CPU utilization, or with AUTOTRACE to see the statistics. Compare this to the explain plan when not using an index.

**When should one rebuild an index? (for DBA)**  
You can run the 'ANALYZE INDEX VALIDATE STRUCTURE' command on the affected indexes - each invocation of this command creates a single row in the INDEX\_STATS view. This row is overwritten by the next ANALYZE INDEX command, so copy the contents of the view into a local table after each ANALYZE. The 'badness' of the index can then be judged by the ratio of 'DEL\_LF\_ROWS' to 'LF\_ROWS'.

**What are the unrestricted procedures used to change the popup screen position during run time ?**   
Anchor-view  
Resize -View  
Move-View.

**What is an Alert ?**   
An alert is window that appears in the middle of the screen overlaying a portion of the current display.

Deleting a page removes information about all the fields in that page ?  **a. True. b. False**  
a. True.

Two popup pages can appear on the screen at a time ?Two popup pages can appear on the screen at a time ? **a. True. b. False?**   
a. True.

Classify the restricted and unrestricted procedure from the following. **a. Call  
b. User-Exit  
c. Call-Query  
d. Up  
e. Execute-Query  
f. Message  
g. Exit-From  
h. Post  
i. Break?**   
  
a. Call - unrestricted  
b. User Exit - Unrestricted  
c. Call\_query - Unrestricted  
d. Up - Restricted  
e. Execute Query - Restricted  
f. Message - Restricted  
g. Exit\_form - Restricted  
h. Post - Restricted  
i. Break - Unrestricted.

**What is an User Exits ?**   
A user exit is a subroutine which are written in programming languages using pro\*C pro \*Cobol , etc., that link into the SQL \* forms executable.

**What is a Trigger ?**   
A piece of logic that is executed at or triggered by a SQL \*forms event.

**What is a Package Procedure ?**   
A Package procedure is built in PL/SQL procedure.

**What is the maximum size of a form ?**   
255 character width and 255 characters Length.

**What is the difference between system.current\_field and system.cursor\_field ?**   
1. System.current\_field gives name of the field.  
2. System.cursor\_field gives name of the field with block name.

**List the system variables related in Block and Field?**   
1. System.block\_status  
2. System.current\_block  
3. System.current\_field  
4. System.current\_value  
5. System.cursor\_block  
6. System.cursor\_field  
7. System.field\_status.

**What are the different types of Package Procedure ?**   
1. Restricted package procedure.  
2. Unrestricted package procedure.

**What are the types of TRIGGERS ?**   
1. Navigational Triggers.  
2. Transaction Triggers.

Identify package function from the following ?  **1. Error-Code  
2. Break  
3. Call  
4. Error-text  
5. Form-failure  
6. Form-fatal  
7. Execute-query  
8. Anchor View  
9. Message\_code?**   
  
1. Error\_Code  
2. Error\_Text  
3. Form\_Failure  
4. Form\_Fatal  
5. Message\_Code

**Can you attach an lov to a field at run-time? if yes, give the build-in name.?**   
Yes. Set\_item\_proprety

**Is it possible to attach same library to more than one form?**   
Yes

**Can you attach an lov to a field at design time?**   
Yes

**List the windows event triggers available in Forms 4.0?**   
When-window-activated,  
when-window-closed,  
when-window-deactivated,  
when-window-resized

**What are the triggers associated with the image item?**   
When-Image-activated(Fires when the operator double clicks on an image Items)  
When-image-pressed(fires when the operator selects or deselects the image item)

**What is a visual attribute?**   
Visual Attributes are the font, color and pattern characteristics of objects that operators see and intract with in our application.

**How many maximum number of radio buttons can you assign to a radio group?**   
Unlimited no of radio buttons can be assigned to a radio group

How do you pass the parameters from one form to another form?To pass one or more parameters to a called form, the calling form must perform the following steps in a trigger or user named routine execute the create\_parameter\_list built-in function to programmatically. Create a parameter list to execute the add parameter built-in procedure to add one or more parameters list. Execute the call\_form, New\_form or run\_product built\_in procedure and include the name or id of the parameter list to be passed to the called form.

**What is a Layout Editor?**   
The Layout Editor is a graphical design facility for creating and arranging items and boilerplate text and graphics objects in your application's interface.

**List the Types of Items?**   
Text item.  
Chart item.  
Check box.  
Display item.  
Image item.  
List item.  
Radio Group.  
User Area item.

**List system variables available in forms 4.0, and not available in forms 3.0?**   
System.cordination\_operation  
System Date\_threshold  
System.effective\_Date  
System.event\_window  
System.suppress\_working

**What are the display styles of an alert?**   
Stop, Caution, note

**What built-in is used for showing the alert during run-time?**   
Show\_alert.

**What built-in is used for changing the properties of the window dynamically?**   
Set\_window\_property  
Canvas-View

**What are the different types of windows?**   
Root window, secondary window.

**What is a predefined exception available in forms 4.0?**   
Raise form\_trigger\_failure

**What is a radio Group?**   
Radio groups display a fixed no of options that are mutually Exclusive. User can select one out of n number of options.

**What are the different type of a record group?**   
Query record group  
Static record group  
Non query record group

**What are the menu items that oracle forms 4.0 supports?**   
Plain, Check,Radio, Separator, Magic

**Give the equivalent term in forms 4.0 for the following. Page, Page 0?**   
Page - Canvas-View  
Page 0 - Canvas-view null.

**What triggers are associated with the radio group?**   
Only when-radio-changed trigger associated with radio group  
Visual Attributes.

**What are the triggers associated with a check box?**   
Only When-checkbox-activated Trigger associated with a Check box.

**Can you attach an alert to a field?**   
No

Can a root window be made modal?   
No

**What is a list item?**   
It is a list of text elements.

**List some built-in routines used to manipulate images in image\_item?**   
Image\_add  
Image\_and  
Image\_subtract  
Image\_xor  
Image\_zoom

**Can you change the alert messages at run-time?**   
If yes, give the name of the built-in to change the alert messages at run-time. Yes. Set\_alert\_property.

**What is the built-in used to get and set lov properties during run-time?**   
Get\_lov\_property  
Set\_lov\_property  
Record Group

**What is the built-in routine used to count the no of rows in a group?**   
Get\_group \_row\_count  
System Variables

**Give the Types of modules in a form?**   
Form  
Menu  
Library

**Write the Abbreviation for the following File Extension 1. FMB 2. MMB 3. PLL?**   
FMB ----- Form Module Binary.  
MMB ----- Menu Module Binary.  
PLL ------ PL/SQL Library Module Binary.

**List the built-in routine for controlling window during run-time?**   
Find\_window,  
get\_window\_property,  
hide\_window,  
move\_window,  
resize\_window,  
set\_window\_property,  
show\_View

**List the built-in routine for controlling window during run-time?**   
Find\_canvas  
Get-Canvas\_property  
Get\_view\_property  
Hide\_View  
Replace\_content\_view  
Scroll\_view  
Set\_canvas\_property  
Set\_view\_property  
Show\_view  
Alert

**What is the built-in function used for finding the alert?**   
Find\_alert  
Editors

**List the editors availables in forms 4.0?**   
Default editor  
User\_defined editors  
system editors.

**What buil-in routines are used to display editor dynamically?**   
Edit\_text item  
show\_editor  
LOV

What is an Lov?A list of values is a single or multi column selection list displayed in a pop-up window

**What is a record Group?**   
A record group is an internal oracle forms data structure that has a similar column/row frame work to a database table

**Give built-in routine related to a record groups?**   
Create\_group (Function)  
Create\_group\_from\_query(Function)  
Delete\_group(Procedure)  
Add\_group\_column(Function)  
Add\_group\_row(Procedure)  
Delete\_group\_row(Procedure)  
Populate\_group(Function)  
Populate\_group\_with\_query(Function)  
Set\_group\_Char\_cell(procedure)

**List the built-in routines for the controlling canvas views during run-time?**   
Find\_canvas  
Get-Canvas\_property  
Get\_view\_property  
Hide\_View  
Replace\_content\_view  
Scroll\_view  
Set\_canvas\_property  
Set\_view\_property  
Show\_view  
Alert

**System.effective\_date system variable is read only True/False?**   
False

**What are the built\_in used to trapping errors in forms 4?**   
Error\_type return character  
Error\_code return number  
Error\_text return char  
Dbms\_error\_code return no.  
Dbms\_error\_text return char

**What is Oracle Financials? (for DBA)**  
Oracle Financials products provide organizations with solutions to a wide range of long- and short-term accounting system issues. Regardless of the size of the business, Oracle Financials can meet accounting management demands with:   
Oracle Assets: Ensures that an organization's property and equipment investment is accurate and that the correct asset tax accounting strategies are chosen.   
Oracle General Ledger: Offers a complete solution to journal entry, budgeting, allocations, consolidation, and financial reporting needs.   
Oracle Inventory: Helps an organization make better inventory decisions by minimizing stock and maximizing cash flow.   
Oracle Order Entry: Provides organizations with a sophisticated order entry system for managing customer commitments.   
Oracle Payables: Lets an organization process more invoices with fewer staff members and tighter controls. Helps save money through maximum discounts, bank float, and prevention of duplicate payment.   
Oracle Personnel: Improves the management of employee- related issues by retaining and making available every form of personnel data.   
Oracle Purchasing: Improves buying power, helps negotiate bigger discounts, eliminates paper flow, increases financial controls, and increases productivity.   
Oracle Receivables:. Improves cash flow by letting an organization process more payments faster, without off-line research. Helps correctly account for cash, reduce outstanding receivables, and improve collection effectiveness.   
Oracle Revenue Accounting Gives an organization timely and accurate revenue and flexible commissions reporting.   
Oracle Sales Analysis: Allows for better forecasting, planning. and reporting of sales information.

**What are the design facilities available in forms 4.0?**   
Default Block facility.  
Layout Editor.  
Menu Editor.  
Object Lists.  
Property Sheets.  
PL/SQL Editor.  
Tables Columns Browser.  
Built-ins Browser.

**What is the most important module in Oracle Financials? (for DBA)**  
The General Ledger (GL) module is the basis for all other Oracle Financial modules. All other modules provide information to it. If you implement Oracle Financials, you should switch your current GL system first.GL is relatively easy to implement. You should go live with it first to give your implementation team a chance to be familiar with Oracle Financials.

**What are the types of canvas-views?**   
Content View, Stacked View.

**What is the MultiOrg and what is it used for? (for DBA)**  
MultiOrg or Multiple Organizations Architecture allows multiple operating units and their relationships to be defined within a single installation of Oracle Applications. This keeps each operating unit's transaction data separate and secure.   
Use the following query to determine if MuliOrg is intalled:   
select multi\_org\_flag from fnd\_product\_groups;

**What is the difference between Fields and FlexFields? (for DBA)**  
A field is a position on a form that one uses to enter, view, update, or delete information. A field prompt describes each field by telling what kind of information appears in the field, or alternatively, what kind of information should be entered in the field.   
A flexfield is an Oracle Applications field made up of segments. Each segment has an assigned name and a set of valid values. Oracle Applications uses flexfields to capture information about your organization. There are two types of flexfields: key flexfields and descriptive flexfields.

**Explain types of Block in forms4.0?**   
Base table Blocks.  
Control Blocks.  
1. A base table block is one that is associated with a specific database table or view.  
2. A control block is a block that is not associated with a database table. ITEMS

**What is an Alert?**   
An alert is a modal window that displays a message notifies the operator of some application condition

**What are the built-in routines is available in forms 4.0 to create and manipulate a parameter list?**   
Add\_parameter  
Create\_Parameter\_list  
Delete\_parameter  
Destroy\_parameter\_list  
Get\_parameter\_attr  
Get\_parameter\_list  
set\_parameter\_attr

**What is a record Group?**   
A record group is an internal oracle forms data structure that has a similar column/row frame work to a database table

**What is a Navigable item?**   
A navigable item is one that operators can navigate to with the keyboard during default navigation, or that Oracle forms can navigate to by executing a navigational built-in procedure.

What is a library in Forms 4.0?   
A library is a collection of Pl/SQL program units, including user named procedures, functions & packages

**How image\_items can be populate to field in forms 4.0?**   
A fetch from a long raw database column PL/Sql assignment to executing the read\_image\_file built\_in procedure to get an image from the file system.

**What is the content view and stacked view?**   
A content view is the "Base" view that occupies the entire content pane of the window in which it is displayed. A stacked view differs from a content canvas view in that it is not the base view for the window to which it is assigned

What is a Check Box?A Check Box is a two state control that indicates whether a certain condition or value is on or off, true or false. The display state of a check box is always either "checked" or "unchecked".

**What is a canvas-view?**   
A canvas-view is the background object on which you layout the interface items (text-items, check boxes, radio groups, and so on.) and boilerplate objects that operators see and interact with as they run your form. At run-time, operators can see only those items that have been assigned to a specific canvas. Each canvas, in term, must be displayed in a specific window.

**Explain the following file extension related to library?**   
.pll,.lib,.pld  
The library pll files is a portable design file comparable to an fmb form file  
The library lib file is a plat form specific, generated library file comparable to a fmx form file  
The pld file is Txt format file and can be used for source controlling your library files Parameter

**Explain the usage of WHERE CURRENT OF clause in cursors ?**   
WHERE CURRENT OF clause in an UPDATE,DELETE statement refers to the latest row fetched from a cursor. Database Triggers

**Name the tables where characteristics of Package, procedure and functions are stored ?**   
User\_objects, User\_Source and User\_error.

**Explain the two type of Cursors ?**   
There are two types of cursors, Implicit Cursor and Explicit Cursor. PL/SQL uses Implicit Cursors for queries. User defined cursors are called Explicit Cursors. They can be declared and used.

**What are two parts of package ?**   
The two parts of package are PACKAGE SPECIFICATION & PACKAGE BODY. Package Specification contains declarations that are global to the packages and local to the schema. Package Body contains actual procedures and local declaration of the procedures and cursor declarations.

**What are two virtual tables available during database trigger execution ?**   
The table columns are referred as OLD.column\_name and NEW.column\_name.  
For triggers related to INSERT only NEW.column\_name values only available.  
For triggers related to UPDATE only OLD.column\_name NEW.column\_name values only available.  
For triggers related to DELETE only OLD.column\_name values only available.

**What is Fine Grained Auditing? (for DBA)**  
Fine Grained Auditing (DBMS\_FGA) allows auditing records to be generated when certain rows are selected from a table. A list of defined policies can be obtained from DBA\_AUDIT\_POLICIES. Audit records are stored in DBA\_FGA\_AUDIT\_TRAIL. Look at this example:   
o Add policy on table with autiting condition...  
execute dbms\_fga.add\_policy('HR', 'EMP', 'policy1', 'deptno > 10');  
o Must ANALYZE, this feature works with CBO (Cost Based Optimizer)  
analyze table EMP compute statistics;  
select \* from EMP where c1 = 11; -- Will trigger auditing  
select \* from EMP where c1 = 09; -- No auditing  
o Now we can see the statments that triggered the auditing condition...  
select sqltext from sys.fga\_log$;  
delete from sys.fga\_log$;

**What is a package ? What are the advantages of packages ? What is Pragma EXECPTION\_INIT ? Explain the usage ?**   
The PRAGMA EXECPTION\_INIT tells the complier to associate an exception with an oracle error. To get an error message of a specific oracle error. e.g. PRAGMA EXCEPTION\_INIT (exception name, oracle error number)

**What is a Virtual Private Database? (for DBA)**  
Oracle 8i introduced the notion of a Virtual Private Database (VPD). A VPD offers Fine-Grained Access Control (FGAC) for secure separation of data. This ensures that users only have access to data that pertains to them. Using this option, one could even store multiple companies' data within the same schema, without them knowing about it. VPD configuration is done via the DBMS\_RLS (Row Level Security) package. Select from SYS.V$VPD\_POLICY to see existing VPD configuration.

**What is Raise\_application\_error ?**   
Raise\_application\_error is a procedure of package DBMS\_STANDARD which allows to issue an user\_defined error messages from stored sub-program or database trigger.

**What is Oracle Label Security? (for DBA)**  
Oracle Label Security (formerly called Trusted Oracle MLS RDBMS) uses the VPD (Virtual Private Database) feature of Oracle8i to implement row level security. Access to rows are restricted according to a user's security sensitivity tag or label. Oracle Label Security is configured, controlled and managed from the Policy Manager, an Enterprise Manager-based GUI utility.

**Give the structure of the procedure ?**   
PROCEDURE name (parameter list.....)  
is  
local variable declarations  
BEGIN  
Executable statements.  
Exception.  
exception handlers  
end;

**What is OEM (Oracle Enterprise Manager)? (for DBA)**  
OEM is a set of systems management tools provided by Oracle Corporation for managing the Oracle environment. It provides tools to monitor the Oracle environment and automate tasks (both one-time and repetitive in nature) to take database administration a step closer to "Lights Out" management.

**Question What is PL/SQL ?**   
PL/SQL is a procedural language that has both interactive SQL and procedural programming language constructs such as iteration, conditional branching.

**What are the components of OEM? (for DBA)**  
Oracle Enterprise Manager (OEM) has the following components:   
. Management Server (OMS): Middle tier server that handles communication with the intelligent agents. The OEM Console connects to the management server to monitor and configure the Oracle enterprise.  
. Console: This is a graphical interface from where one can schedule jobs, events, and monitor the database. The console can be opened from a Windows workstation, Unix XTerm (oemapp command) or Web browser session (oem\_webstage).   
. Intelligent Agent (OIA): The OIA runs on the target database and takes care of the execution of jobs and events scheduled through the Console.

**What happens if a procedure that updates a column of table X is called in a database trigger of the same table ?**   
Mutation of table occurs.

**Is it possible to use Transaction control Statements such a ROLLBACK or COMMIT in Database Trigger ? Why ?**   
It is not possible. As triggers are defined for each table, if you use COMMIT of ROLLBACK in a trigger, it affects logical transaction processing.

**How many types of database triggers can be specified on a table ? What are they ?**   
Insert Update Delete  
Before Row o.k. o.k. o.k.  
After Row o.k. o.k. o.k.  
Before Statement o.k. o.k. o.k.  
After Statement o.k. o.k. o.k.  
If FOR EACH ROW clause is specified, then the trigger for each Row affected by the statement.  
If WHEN clause is specified, the trigger fires according to the returned Boolean value.

**What are the modes of parameters that can be passed to a procedure ?**   
IN,OUT,IN-OUT parameters.

**Where the Pre\_defined\_exceptions are stored ?**   
In the standard package.  
Procedures, Functions & Packages ;

**Write the order of precedence for validation of a column in a table ?**  
**I. done using Database triggers.  
ii. done using Integarity Constraints.?**  
I & ii.

**Give the structure of the function ?**   
FUNCTION name (argument list .....) Return datatype is  
local variable declarations  
Begin  
executable statements  
Exception  
execution handlers  
End;

**Explain how procedures and functions are called in a PL/SQL block ?**   
Function is called as part of an expression.  
sal := calculate\_sal ('a822');  
procedure is called as a PL/SQL statement  
calculate\_bonus ('A822');

**What are advantages fo Stored Procedures?**   
Extensibility,Modularity, Reusability, Maintainability and one time compilation.

**What is an Exception ? What are types of Exception ?**   
Exception is the error handling part of PL/SQL block. The types are Predefined and user defined. Some of Predefined exceptions are.  
CURSOR\_ALREADY\_OPEN  
DUP\_VAL\_ON\_INDEX  
NO\_DATA\_FOUND  
TOO\_MANY\_ROWS  
INVALID\_CURSOR  
INVALID\_NUMBER  
LOGON\_DENIED   
NOT\_LOGGED\_ON  
PROGRAM-ERROR  
STORAGE\_ERROR  
TIMEOUT\_ON\_RESOURCE  
VALUE\_ERROR  
ZERO\_DIVIDE  
OTHERS.

What are the PL/SQL Statements used in cursor processing ?DECLARE CURSOR name, OPEN cursor name, FETCH cursor name INTO or Record types, CLOSE cursor name.

**What are the components of a PL/SQL Block ?**   
Declarative part, Executable part and Exception part.  
Datatypes PL/SQL

**What is a database trigger ? Name some usages of database trigger ?**   
Database trigger is stored PL/SQL program unit associated with a specific database table. Usages are Audit data modifications, Log events transparently, Enforce complex business rules Derive column values automatically, Implement complex security authorizations. Maintain replicate tables.

**What is a cursor ? Why Cursor is required ?**   
Cursor is a named private SQL area from where information can be accessed. Cursors are required to process rows individually for queries returning multiple rows.

**What is a cursor for loop ?**   
Cursor for loop implicitly declares %ROWTYPE as loop index, opens a cursor, fetches rows of values from active set into fields in the record and closes when all the records have been processed.  
e.g.. FOR emp\_rec IN C1 LOOP  
salary\_total := salary\_total +emp\_rec sal;  
END LOOP;

**What will happen after commit statement ?**   
Cursor C1 is  
Select empno,  
ename from emp;  
Begin  
open C1; loop  
Fetch C1 into  
eno.ename;  
Exit When  
C1 %notfound;-----  
commit;  
end loop;  
end;  
The cursor having query as SELECT .... FOR UPDATE gets closed after COMMIT/ROLLBACK.  
The cursor having query as SELECT.... does not get closed even after COMMIT/ROLLBACK.

How packaged procedures and functions are called from the following? **a. Stored procedure or anonymous block  
b. an application program such a PRC \*C, PRO\* COBOL  
c. SQL \*PLUS??**  
  
a. PACKAGE NAME.PROCEDURE NAME (parameters);  
variable := PACKAGE NAME.FUNCTION NAME (arguments);  
EXEC SQL EXECUTE  
b.BEGIN  
PACKAGE NAME.PROCEDURE NAME (parameters)  
variable := PACKAGE NAME.FUNCTION NAME (arguments);  
END;  
END EXEC;  
c. EXECUTE PACKAGE NAME.PROCEDURE if the procedures does not have any out/in-out parameters. A function can not be called.

**What is a stored procedure ?**   
A stored procedure is a sequence of statements that perform specific function.

**What are the components of a PL/SQL block ?**   
A set of related declarations and procedural statements is called block.

**What is difference between a PROCEDURE & FUNCTION ?**   
A FUNCTION is always returns a value using the return statement.  
A PROCEDURE may return one or more values through parameters or may not return at all.

**What is difference between a Cursor declared in a procedure and Cursor declared in a package specification ?**   
A cursor declared in a package specification is global and can be accessed by other procedures or procedures in a package.  
A cursor declared in a procedure is local to the procedure that can not be accessed by other procedures.

**What are the cursor attributes used in PL/SQL ?**   
%ISOPEN - to check whether cursor is open or not  
% ROWCOUNT - number of rows fetched/updated/deleted.  
% FOUND - to check whether cursor has fetched any row. True if rows are fetched.  
% NOT FOUND - to check whether cursor has fetched any row. True if no rows are featched.  
These attributes are proceeded with SQL for Implicit Cursors and with Cursor name for Explicit Cursors.

**What are % TYPE and % ROWTYPE ? What are the advantages of using these over datatypes?**   
% TYPE provides the data type of a variable or a database column to that variable.  
% ROWTYPE provides the record type that represents a entire row of a table or view or columns selected in the cursor.  
The advantages are :   
I. Need not know about variable's data type  
ii. If the database definition of a column in a table changes, the data type of a variable changes accordingly.

What is difference between % ROWTYPE and TYPE RECORD ? % ROWTYPE is to be used whenever query returns a entire row of a table or view.  
TYPE rec RECORD is to be used whenever query returns columns of different table or views and variables.  
E.g. TYPE r\_emp is RECORD (eno emp.empno% type,ename emp ename %type );  
e\_rec emp% ROWTYPE  
cursor c1 is select empno,deptno from emp;  
e\_rec c1 %ROWTYPE.

**What are the different types of PL/SQL program units that can be defined and stored in ORACLE database ?**   
Procedures and Functions,Packages and Database Triggers.

**What are the advantages of having a Package ?**   
Increased functionality (for example,global package variables can be declared and used by any proecdure in the package) and performance (for example all objects of the package are parsed compiled, and loaded into memory once)

**What are the uses of Database Trigger ?**   
Database triggers can be used to automatic data generation, audit data modifications, enforce complex Integrity constraints, and customize complex security authorizations.

**What is a Procedure ?**   
A Procedure consist of a set of SQL and PL/SQL statements that are grouped together as a unit to solve a specific problem or perform a set of related tasks.

**What is a Package ?**   
A Package is a collection of related procedures, functions, variables and other package constructs together as a unit in the database.

**What is difference between Procedures and Functions ?**   
A Function returns a value to the caller where as a Procedure does not.

**What is Database Trigger ?**   
A Database Trigger is procedure (set of SQL and PL/SQL statements) that is automatically executed as a result of an insert in, update to, or delete from a table.

**Can the default values be assigned to actual parameters?**   
Yes

**Can a primary key contain more than one columns?**   
Yes

**What is an UTL\_FILE.What are different procedures and functions associated with it?**   
UTL\_FILE is a package that adds the ability to read and write to operating system files. Procedures associated with it are FCLOSE, FCLOSE\_ALL and 5 procedures to output data to a file PUT, PUT\_LINE, NEW\_LINE, PUTF, FFLUSH.PUT, FFLUSH.PUT\_LINE,FFLUSH.NEW\_LINE. Functions associated with it are FOPEN, ISOPEN.

**What are ORACLE PRECOMPILERS?**   
Using ORACLE PRECOMPILERS, SQL statements and PL/SQL blocks can be contained inside 3GL programs written in C,C++,COBOL,PASCAL, FORTRAN,PL/1 AND ADA. The Precompilers are known as Pro\*C,Pro\*Cobol,... This form of PL/SQL is known as embedded pl/sql,the language in which pl/sql is embedded is known as the host language. The prcompiler translates the embedded SQL and pl/sql statements into calls to the precompiler runtime library. The output must be compiled and linked with this library to creator an executable.

**Differentiate between TRUNCATE and DELETE?**   
TRUNCATE deletes much faster than DELETE  
TRUNCATE  
DELETE  
It is a DDL statement  
It is a DML statement  
It is a one way trip, cannot ROLLBACK  
One can Rollback  
Doesn't have selective features (where clause)  
Has  
Doesn't fire database triggers  
Does  
It requires disabling of referential constraints.

**What is difference between a formal and an actual parameter?**   
The variables declared in the procedure and which are passed, as arguments are called actual, the parameters in the procedure declaration. Actual parameters contain the values that are passed to a procedure and receive results. Formal parameters are the placeholders for the values of actual parameters

What should be the return type for a cursor variable. Can we use a scalar data type as return type?The return type for a cursor must be a record type.It can be declared explicitly as a user-defined or %ROWTYPE can be used. eg TYPE t\_studentsref IS REF CURSOR RETURN students%ROWTYPE

**What are different Oracle database objects?**   
-TABLES  
-VIEWS  
-INDEXES  
-SYNONYMS  
-SEQUENCES  
-TABLESPACES etc

**What is difference between SUBSTR and INSTR?**   
SUBSTR returns a specified portion of a string eg SUBSTR('BCDEF',4) output BCDE INSTR provides character position in which a pattern is found in a string. eg INSTR('ABC-DC-F','-',2) output 7 (2nd occurence of '-')

**Display the number value in Words?**   
SQL> select sal, (to\_char(to\_date(sal,'j'), 'jsp'))  
from emp;  
the output like,  
SAL (TO\_CHAR(TO\_DATE(SAL,'J'),'JSP'))  
--------- ----------------------------------------  
800 eight hundred  
1600 one thousand six hundred  
1250 one thousand two hundred fifty  
If you want to add some text like, Rs. Three Thousand only.  
SQL> select sal "Salary ",  
(' Rs. '|| (to\_char(to\_date(sal,'j'), 'Jsp'))|| ' only.'))  
"Sal in Words" from emp  
/  
Salary Sal in Words  
------- -----------------------------------------------  
800 Rs. Eight Hundred only.  
1600 Rs. One Thousand Six Hundred only.  
1250 Rs. One Thousand Two Hundred Fifty only.

**What is difference between SQL and SQL\*PLUS?**   
SQL\*PLUS is a command line tool where as SQL and PL/SQL language interface and reporting tool. Its a command line tool that allows user to type SQL commands to be executed directly against an Oracle database. SQL is a language used to query the relational database(DML,DCL,DDL). SQL\*PLUS commands are used to format query result, Set options, Edit SQL commands and PL/SQL.

**What are various joins used while writing SUBQUERIES?**   
Self join-Its a join foreign key of a table references the same table. Outer Join--Its a join condition used where One can query all the rows of one of the tables in the join condition even though they don't satisfy the join condition.  
Equi-join--Its a join condition that retrieves rows from one or more tables in which one or more columns in one table are equal to one or more columns in the second table.

What a SELECT FOR UPDATE cursor represent.?   
SELECT......FROM......FOR......UPDATE[OF column-reference][NOWAIT]  
The processing done in a fetch loop modifies the rows that have been retrieved by the cursor. A convenient way of modifying the rows is done by a method with two parts: the FOR UPDATE clause in the cursor declaration, WHERE CURRENT OF CLAUSE in an UPDATE or declaration statement.

**What are various privileges that a user can grant to another user?**   
-SELECT  
-CONNECT  
-RESOURCES

**Display the records between two range?**   
select rownum, empno, ename from emp where rowid in (select rowid from emp where rownum <=&upto minus select rowid from emp where rownum<&Start);

minvalue.sql Select the Nth lowest value from a table? select level, min('col\_name') from my\_table where level = '&n' connect by prior ('col\_name') < 'col\_name')  
group by level;  
Example:  
Given a table called emp with the following columns:  
-- id number  
-- name varchar2(20)  
-- sal number  
--  
-- For the second lowest salary:  
-- select level, min(sal) from emp  
-- where level=2  
-- connect by prior sal < sal  
-- group by level

**What is difference between Rename and Alias?**   
Rename is a permanent name given to a table or column whereas Alias is a temporary name given to a table or column which do not exist once the SQL statement is executed.

**Difference between an implicit & an explicit cursor.?**   
only one row. However,queries that return more than one row you must declare an explicit cursor or use a cursor FOR loop. Explicit cursor is a cursor in which the cursor name is explicitly assigned to a SELECT statement via the CURSOR...IS statement. An implicit cursor is used for all SQL statements Declare, Open, Fetch, Close. An explicit cursors are used to process multirow SELECT statements An implicit cursor is used to process INSERT, UPDATE, DELETE and single row SELECT. .INTO statements.

**What is a OUTER JOIN?**   
Outer Join--Its a join condition used where you can query all the rows of one of the tables in the join condition even though they don’t satisfy the join condition.

**What is a cursor?**   
Oracle uses work area to execute SQL statements and store processing information PL/SQL construct called a cursor lets you name a work area and access its stored information A cursor is a mechanism used to fetch more than one row in a Pl/SQl block.

**What is the purpose of a cluster?**   
Oracle does not allow a user to specifically locate tables, since that is a part of the function of the RDBMS. However, for the purpose of increasing performance, oracle allows a developer to create a CLUSTER. A CLUSTER provides a means for storing data from different tables together for faster retrieval than if the table placement were left to the RDBMS.

**What is OCI. What are its uses?**   
Oracle Call Interface is a method of accesing database from a 3GL program. Uses--No precompiler is required,PL/SQL blocks are executed like other DML statements.   
The OCI library provides  
--functions to parse SQL statemets  
--bind input variables  
--bind output variables  
--execute statements  
--fetch the results

**How you open and close a cursor variable. Why it is required?**   
OPEN cursor variable FOR SELECT...Statement  
CLOSE cursor variable In order to associate a cursor variable with a particular SELECT statement OPEN syntax is used. In order to free the resources used for the query CLOSE statement is used.

**Display Odd/ Even number of records?**   
Odd number of records:  
select \* from emp where (rowid,1) in (select rowid, mod(rownum,2) from emp);  
Output:-  
1  
3  
5  
Even number of records:  
select \* from emp where (rowid,0) in (select rowid, mod(rownum,2) from emp)  
Output:-  
2  
4  
6

**What are various constraints used in SQL?**   
-NULL  
-NOT NULL  
-CHECK  
-DEFAULT

**Can cursor variables be stored in PL/SQL tables. If yes how. If not why?**   
No, a cursor variable points a row which cannot be stored in a two-dimensional PL/SQL table.

**Difference between NO DATA FOUND and %NOTFOUND?**   
NO DATA FOUND is an exception raised only for the SELECT....INTO statements when the where clause of the querydoes not match any rows. When the where clause of the explicit cursor does not match any rows the %NOTFOUND attribute is set to TRUE instead.

**Can you use a commit statement within a database trigger?**   
No

**What WHERE CURRENT OF clause does in a cursor?**   
LOOP  
SELECT num\_credits INTO v\_numcredits FROM classes  
WHERE dept=123 and course=101;  
UPDATE students  
FHKO;;;;;;;;;SET current\_credits=current\_credits+v\_numcredits  
WHERE CURRENT OF X;

**There is a string 120000 12 0 .125 , how you will find the position of the decimal place?**   
INSTR('120000 12 0 .125',1,'.')  
output 13

**What are different modes of parameters used in functions and procedures?**   
-IN -OUT -INOUT

**How you were passing cursor variables in PL/SQL 2.2?**   
In PL/SQL 2.2 cursor variables cannot be declared in a package.This is because the storage for a cursor variable has to be allocated using Pro\*C or OCI with version 2.2, the only means of passing a cursor variable to a PL/SQL block is via bind variable or a procedure parameter.

**When do you use WHERE clause and when do you use HAVING clause?**   
HAVING clause is used when you want to specify a condition for a group function and it is written after GROUP BY clause. The WHERE clause is used when you want to specify a condition for columns, single row functions except group functions and it is written before GROUP BY clause if it is used.

**Difference between procedure and function.?**   
Functions are named PL/SQL blocks that return a value and can be called with arguments procedure a named block that can be called with parameter. A procedure all is a PL/SQL statement by itself, while a Function call is called as part of an expression.

**Which is more faster - IN or EXISTS?**   
EXISTS is more faster than IN because EXISTS returns a Boolean value whereas IN returns a value

What is syntax for dropping a procedure and a function .Are these operations possible?Drop Procedure procedure\_name  
Drop Function function\_name

**How will you delete duplicating rows from a base table?**   
delete from table\_name where rowid not in (select max(rowid) from table group by duplicate\_values\_field\_name); or delete duplicate\_values\_field\_name dv from table\_name ta where rowid <(select min(rowid) from table\_name tb where ta.dv=tb.dv);

**Difference between database triggers and form triggers?**   
-Data base trigger(DBT) fires when a DML operation is performed on a data base table. Form trigger(FT) Fires when user presses a key or navigates between fields on the screen  
-Can be row level or statement level No distinction between row level and statement level.  
-Can manipulate data stored in Oracle tables via SQL Can manipulate data in Oracle tables as well as variables in forms.  
-Can be fired from any session executing the triggering DML statements. Can be fired only from the form that define the trigger.  
-Can cause other database triggers to fire. Can cause other database triggers to fire, but not other form triggers.

**What is a cursor for loop?**   
Cursor For Loop is a loop where oracle implicitly declares a loop variable, the loop index that of the same record type as the cursor's record.

**How you will avoid duplicating records in a query?**   
By using DISTINCT

**What is a view ?**   
A view is stored procedure based on one or more tables, it’s a virtual table.

**What is difference between UNIQUE and PRIMARY KEY constraints?**   
A table can have only one PRIMARY KEY whereas there can be any number of UNIQUE keys. The columns that compose PK are automatically define NOT NULL, whereas a column that compose a UNIQUE is not automatically defined to be mandatory must also specify the column is NOT NULL.

**What is use of a cursor variable? How it is defined?**   
A cursor variable is associated with different statements at run time, which can hold different values at run time. Static cursors can only be associated with one run time query. A cursor variable is reference type (like a pointer in C).  
Declaring a cursor variable:  
TYPE type\_name IS REF CURSOR RETURN return\_type type\_name is the name of the reference type,return\_type is a record type indicating the types of the select list that will eventually be returned by the cursor variable.

**How do you find the numbert of rows in a Table ?**   
A bad answer is count them (SELECT COUNT(\*) FROM table\_name)  
A good answer is :-  
'By generating SQL to ANALYZE TABLE table\_name COUNT STATISTICS by querying Oracle System Catalogues (e.g. USER\_TABLES or ALL\_TABLES).  
The best answer is to refer to the utility which Oracle released which makes it unnecessary to do ANALYZE TABLE for each Table individually.

**What is the maximum buffer size that can be specified using the DBMS\_OUTPUT.ENABLE function?**   
1,000,00

**What are cursor attributes?**   
-%ROWCOUNT  
-%NOTFOUND  
-%FOUND  
-%ISOPEN

**There is a % sign in one field of a column. What will be the query to find it?**   
'' Should be used before '%'.

**What is ON DELETE CASCADE ?**   
When ON DELETE CASCADE is specified ORACLE maintains referential integrity by automatically removing dependent foreign key values if a referenced primary or unique key value is removed.

**What is the fastest way of accessing a row in a table ?**   
Using ROWID.CONSTRAINTS

**What is difference between TRUNCATE & DELETE ?**   
TRUNCATE commits after deleting entire table i.e., can not be rolled back. Database triggers do not fire on TRUNCATEDELETE allows the filtered deletion. Deleted records can be rolled back or committed. Database triggers fire on DELETE.

**What is a transaction ?**   
Transaction is logical unit between two commits and commit and rollback.

What are the advantages of VIEW ? To protect some of the columns of a table from other users.To hide complexity of a query.To hide complexity of calculations.

**How will you a activate/deactivate integrity constraints ?**   
The integrity constraints can be enabled or disabled by ALTER TABLE ENABLE constraint/DISABLE constraint.

**Where the integrity constraints are stored in Data Dictionary ?**   
The integrity constraints are stored in USER\_CONSTRAINTS.

**What is the Subquery ?**   
Sub query is a query whose return values are used in filtering conditions of the main query.

**How to access the current value and next value from a sequence ? Is it possible to access the current value in a session before accessing next value ?**   
Sequence name CURRVAL, Sequence name NEXTVAL.It is not possible. Only if you access next value in the session, current value can be accessed.

**What are the usage of SAVEPOINTS ?value in a session before accessing next value ?**   
SAVEPOINTS are used to subdivide a transaction into smaller parts. It enables rolling back part of a transaction. Maximum of five save points are allowed.

**What is ROWID ?in a session before accessing next value ?**   
ROWID is a pseudo column attached to each row of a table. It is 18 character long, blockno, rownumber are the components of ROWID.

**Explain Connect by Prior ?in a session before accessing next value ?**   
Retrieves rows in hierarchical order.e.g. select empno, ename from emp where.

**How many LONG columns are allowed in a table ? Is it possible to use LONG columns in WHERE clause or ORDER BY ?**   
Only one LONG columns is allowed. It is not possible to use LONG column in WHERE or ORDER BY clause.

**What is Referential Integrity ?**   
Maintaining data integrity through a set of rules that restrict the values of one or more columns of the tables based on the values of primary key or unique key of the referenced table.

**What is a join ? Explain the different types of joins ?**   
Join is a query which retrieves related columns or rows from multiple tables.Self Join - Joining the table with itself.Equi Join - Joining two tables by equating two common columns.Non-Equi Join - Joining two tables by equating two common columns.Outer Join - Joining two tables in such a way that query can also retrieve rows that do not have corresponding join value in the other table.

**If an unique key constraint on DATE column is created, will it validate the rows that are inserted with SYSDATE ?**   
It won't, Because SYSDATE format contains time attached with it.

How does one stop and start the OMS? (for DBA)Use the following command sequence to stop and start the OMS (Oracle Management Server):   
oemctl start oms  
oemctl status oms sysman/oem\_temp  
oemctl stop oms sysman/oem\_temp  
Windows NT/2000 users can just stop and start the required services. The default OEM administrator is "sysman" with a password of "oem\_temp".   
NOTE: Use command oemctrl instead of oemctl for Oracle 8i and below.

**What is an Integrity Constraint ?**   
Integrity constraint is a rule that restricts values to a column in a table.

**How does one create a repository? (for DBA)**  
For OEM v2 and above, start the Oracle Enterprise Manager Configuration Assistant (emca on Unix) to create and configure the management server and repository. Remember to setup a backup for the repository database after creating it.

**If a View on a single base table is manipulated will the changes be reflected on the base table ?**   
If changes are made to the tables which are base tables of a view will the changes be reference on the view.   
  
The following describes means to create a OEM V1.x (very old!!!) repository on WindowsNT:   
  
. Create a tablespace that would hold the repository data. A size between 200- 250 MB would be ideal. Let us call it Dummy\_Space.   
. Create an Oracle user who would own this repository. Assign DBA, SNMPAgent, Exp\_Full\_database, Imp\_Full\_database roles to this user. Lets call this user Dummy\_user. Assign Dummy\_Space as the default tablespace.   
. Create an operating system user with the same name as the Oracle username. I.e. Dummy\_User. Add 'Log on as a batch job' under advanced rights in User manager.   
. Fire up Enterprise manager and log in as Dummy\_User and enter the password. This would trigger the creation of the repository. From now on, Enterprise manager is ready to accept jobs.

**What is a database link ?**   
Database Link is a named path through which a remote database can be accessed.

**How does one list one's databases in the OEM Console? (for DBA)**  
Follow these steps to discover databases and other services from the OEM Console:   
1. Ensure the GLOBAL\_DBNAME parameter is set for all databases in your LISTENER.ORA file (optional). These names will be listed in the OEM Console. Please note that names entered are case sensitive. A portion of a listener.ora file:   
(SID\_DESC =  
(GLOBAL\_DBNAME = DB\_name\_for\_OEM)  
(SID\_NAME = ...  
2. Start the Oracle Intelligent Agent on the machine you want to discover. See section "How does one start the Oracle Intelligent Agent?".   
3. Start the OEM Console, navigate to menu "Navigator/ Discover Nodes". The OEM Discovery Wizard will guide you through the process of discovering your databases and other services.

**What is CYCLE/NO CYCLE in a Sequence ?**   
CYCLE specifies that the sequence continues to generate values after reaching either maximum or minimum value. After pan ascending sequence reaches its maximum value, it generates its minimum value. After a descending sequence reaches its minimum, it generates its maximum.NO CYCLE specifies that the sequence cannot generate more values after reaching its maximum or minimum value.

**What is correlated sub-query ?**   
Correlated sub query is a sub query which has reference to the main query.

**What are the data types allowed in a table ?**   
CHAR,VARCHAR2,NUMBER,DATE,RAW,LONG and LONG RAW.

**What is difference between CHAR and VARCHAR2 ? What is the maximum SIZE allowed for each type ?**   
CHAR pads blank spaces to the maximum length. VARCHAR2 does not pad blank spaces. For CHAR it is 255 and 2000 for VARCHAR2.

**Can a view be updated/inserted/deleted? If Yes under what conditions ?**   
A View can be updated/deleted/inserted if it has only one base table if the view is based on columns from one or more tables then insert, update and delete is not possible.

**What are the different types of Coordinations of the Master with the Detail block?**   
POPULATE\_GROUP(function)  
POPULATE\_GROUP\_WITH\_QUERY(function)  
SET\_GROUP\_CHAR\_CELL(procedure)  
SET\_GROUPCELL(procedure)  
SET\_GROUP\_NUMBER\_CELL(procedure)

Use the ADD\_GROUP\_COLUMN function to add a column to a record group that was created at design time?  **I) TRUE  II) FALSE**   
II) FALSE

Use the ADD\_GROUP\_ROW procedure to add a row to a static record group?  **I) TRUE II) FALSE**   
I) FALSE

**maxvalue.sql Select the Nth Highest value from a table?**   
select level, max('col\_name') from my\_table where level = '&n' connect by prior ('col\_name') > 'col\_name')  
group by level;  
Example:  
Given a table called emp with the following columns:  
-- id number  
-- name varchar2(20)  
-- sal number  
--  
-- For the second highest salary:  
-- select level, max(sal) from emp  
-- where level=2  
-- connect by prior sal > sal  
-- group by level

**Find out nth highest salary from emp table?**   
SELECT DISTINCT (a.sal) FROM EMP A WHERE &N = (SELECT COUNT (DISTINCT (b.sal)) FROM EMP B WHERE a.sal<=b.sal);  
For E.g.:-  
Enter value for n: 2  
SAL  
---------  
3700

**Suppose a customer table is having different columns like customer no, payments.What will be the query to select top three max payments?**   
SELECT customer\_no, payments from customer C1  
WHERE 3<=(SELECT COUNT(\*) from customer C2  
WHERE C1.payment <= C2.payment)

**How you will avoid your query from using indexes?**   
SELECT \* FROM emp  
Where emp\_no+' '=12345;  
i.e you have to concatenate the column name with space within codes in the where condition.  
SELECT /\*+ FULL(a) \*/ ename, emp\_no from emp  
where emp\_no=1234;  
i.e using HINTS

**What utility is used to create a physical backup?**   
Either rman or alter tablespace begin backup will do..

**What are the Back ground processes in Oracle and what are they.**   
This is one of the most frequently asked question.There are basically 9 Processes but in a general system we need to mention the first five background processes.They do the house keeping activities for the Oracle and are common in any system.  
The various background processes in oracle are   
a) Data Base Writer(DBWR) :: Data Base Writer Writes Modified blocks from Database buffer cache to Data Files.This is required since the data is not written whenever a transaction is committed.  
b)LogWriter(LGWR) :: LogWriter writes the redo log entries to disk. Redo Log data is generated in redo log buffer of SGA. As transaction commits and log buffer fills, LGWR writes log entries into a online redo log file.  
c) System Monitor(SMON) :: The System Monitor performs instance recovery at instance startup. This is useful for recovery from system failure  
d)Process Monitor(PMON) :: The Process Monitor performs process recovery when user Process fails. Pmon Clears and Frees resources that process was using.  
e) CheckPoint(CKPT) :: At Specified times, all modified database buffers in SGA are written to data files by DBWR at Checkpoints and Updating all data files and control files of database to indicate the most recent checkpoint  
f)Archieves(ARCH) :: The Archiver copies online redo log files to archival storal when they are busy.  
g) Recoveror(RECO) :: The Recoveror is used to resolve the distributed transaction in network  
h) Dispatcher (Dnnn) :: The Dispatcher is useful in Multi Threaded Architecture  
i) Lckn :: We can have upto 10 lock processes for inter instance locking in parallel sql.

**How many types of Sql Statements are there in Oracle**   
There are basically 6 types of sql statments.They are  
a) Data Definition Language(DDL) :: The DDL statements define and maintain objects and drop objects.  
b) Data Manipulation Language(DML) :: The DML statements manipulate database data.  
c) Transaction Control Statements :: Manage change by DML  
d) Session Control :: Used to control the properties of current session enabling and disabling roles and changing .e.g. :: Alter Statements, Set Role  
e) System Control Statements :: Change Properties of Oracle Instance .e.g.:: Alter System  
f) Embedded Sql :: Incorporate DDL, DML and T.C.S in Programming Language.e.g:: Using the Sql Statements in languages such as 'C', Open, Fetch, execute and close

**What is a Transaction in Oracle**   
A transaction is a Logical unit of work that compromises one or more SQL Statements executed by a single User. According to ANSI, a transaction begins with first executable statement and ends when it is explicitly committed or rolled back.

**Key Words Used in Oracle**   
The Key words that are used in Oracle are ::  
a) Committing :: A transaction is said to be committed when the transaction makes permanent changes resulting from the SQL statements.   
b) Rollback :: A transaction that retracts any of the changes resulting from SQL statements in Transaction.  
c) SavePoint :: For long transactions that contain many SQL statements, intermediate markers or savepoints are declared. Savepoints can be used to divide a transaction into smaller points.  
d) Rolling Forward :: Process of applying redo log during recovery is called rolling forward.  
e) Cursor :: A cursor is a handle ( name or a pointer) for the memory associated with a specific stamen. A cursor is basically an area allocated by Oracle for executing the Sql Statement. Oracle uses an implicit cursor statement for Single row query and Uses Explicit cursor for a multi row query.  
f) System Global Area(SGA) :: The SGA is a shared memory region allocated by the Oracle that contains Data and control information for one Oracle Instance. It consists of Database Buffer Cache and Redo log Buffer.  
g) Program Global Area (PGA) :: The PGA is a memory buffer that contains data and control information for server process.  
g) Database Buffer Cache :: Database Buffer of SGA stores the most recently used blocks of database data. The set of database buffers in an instance is called Database Buffer Cache.  
h) Redo log Buffer :: Redo log Buffer of SGA stores all the redo log entries.   
i) Redo Log Files :: Redo log files are set of files that protect altered database data in memory that has not been written to Data Files. They are basically used for backup when a database crashes.  
j) Process :: A Process is a 'thread of control' or mechanism in Operating System that executes series of steps.

What are Procedure, functions and Packages ?Procedures and functions consist of set of PL/SQL statements that are grouped together as a unit to solve a specific problem or perform set of related tasks.  
Procedures do not Return values while Functions return one One Value Packages :: Packages Provide a method of encapsulating and storing related procedures, functions, variables and other Package Contents

**What are Database Triggers and Stored Procedures**   
Database Triggers :: Database Triggers are Procedures that are automatically executed as a result of insert in, update to, or delete from table.  
Database triggers have the values old and new to denote the old value in the table before it is deleted and the new indicated the new value that will be used. DT are useful for implementing complex business rules which cannot be enforced using the integrity rules.We can have the trigger as Before trigger or After Trigger and at Statement or Row level. e.g:: operations insert,update ,delete 3 before ,after 3\*2 A total of 6 combinatons  
At statment level(once for the trigger) or row level( for every execution ) 6 \* 2 A total of 12. Thus a total of 12 combinations are there and the restriction of usage of 12 triggers has been lifted from Oracle 7.3 Onwards.  
Stored Procedures :: Stored Procedures are Procedures that are stored in Compiled form in the database.The advantage of using the stored procedures is that many users can use the same procedure in compiled and ready to use format.

**How many Integrity Rules are there and what are they**   
There are Three Integrity Rules. They are as follows ::  
a) Entity Integrity Rule :: The Entity Integrity Rule enforces that the Primary key cannot be Null  
b) Foreign Key Integrity Rule :: The FKIR denotes that the relationship between the foreign key and the primary key has to be enforced.When there is data in Child Tables the Master tables cannot be deleted.  
c) Business Integrity Rules :: The Third Intigrity rule is about the complex business processes which cannot be implemented by the above 2 rules.

**What are the Various Master and Detail Relation ships.**   
The various Master and Detail Relationship are  
a) NonIsolated :: The Master cannot be deleted when a child is exisiting  
b) Isolated :: The Master can be deleted when the child is exisiting  
c) Cascading :: The child gets deleted when the Master is deleted.

**What are the Various Block Coordination Properties**   
The various Block Coordination Properties are   
a) Immediate Default Setting. The Detail records are shown when the Master Record are shown.  
b) Deffered with Auto Query Oracle Forms defer fetching the detail records until the operator navigates to the detail block.  
c) Deffered with No Auto Query The operator must navigate to the detail block and explicitly execute a query

**What are the Different Optimization Techniques**   
The Various Optimisation techniques are   
a) Execute Plan :: we can see the plan of the query and change it accordingly based on the indexes  
b) Optimizer\_hint ::  
set\_item\_property('DeptBlock',OPTIMIZER\_HINT,'FIRST\_ROWS');  
Select /\*+ First\_Rows \*/ Deptno,Dname,Loc,Rowid from dept  
where (Deptno > 25)  
c) Optimize\_Sql ::  
By setting the Optimize\_Sql = No, Oracle Forms assigns a single cursor for all SQL statements.This slow downs the processing because for evertime the SQL must be parsed whenver they are executed.  
f45run module = my\_firstform userid = scott/tiger optimize\_sql = No  
d) Optimize\_Tp ::  
By setting the Optimize\_Tp= No, Oracle Forms assigns seperate cursor only for each query SELECT statement. All other SQL statements reuse the cursor.  
f45run module = my\_firstform userid = scott/tiger optimize\_Tp = No

**How does one change an Oracle user's password?(for DBA)**  
Issue the following SQL command:  
ALTER USER <username> IDENTIFIED BY <new\_password>;  
From Oracle8 you can just type "password" from SQL\*Plus, or if you need to change another user's password, type "password user\_name". Look at this example:   
SQL> password  
Changing password for SCOTT  
Old password:  
New password:  
Retype new password:

**How does one create and drop database users?**   
Look at these examples:   
CREATE USER scott   
IDENTIFIED BY tiger -- Assign password  
DEFAULT TABLESACE tools -- Assign space for table and index segments  
TEMPORARY TABLESPACE temp; -- Assign sort space  
DROP USER scott CASCADE; -- Remove user  
After creating a new user, assign the required privileges:   
GRANT CONNECT, RESOURCE TO scott;  
GRANT DBA TO scott; -- Make user a DB Administrator  
Remember to give the user some space quota on its tablespaces:   
ALTER USER scott QUOTA UNLIMITED ON tools;

**Who created all these users in my database?/ Can I drop this user? (for DBA)**  
Oracle creates a number of default database users or schemas when a new database is created. Below are a few of them:   
SYS/CHANGE\_ON\_INSTALL or INTERNAL  
Oracle Data Dictionary/ Catalog  
Created by: ?/rdbms/admin/sql.bsq and various cat\*.sql scripts  
Can password be changed: Yes (Do so right after the database was created)  
Can user be dropped: NO  
SYSTEM/MANAGER  
The default DBA user name (please do not use SYS)  
Created by: ?/rdbms/admin/sql.bsq  
Can password be changed: Yes (Do so right after the database was created)  
Can user be dropped: NO  
OUTLN/OUTLN  
Stored outlines for optimizer plan stability  
Created by: ?/rdbms/admin/sql.bsq  
Can password be changed: Yes (Do so right after the database was created)  
Can user be dropped: NO  
SCOTT/TIGER, ADAMS/WOOD, JONES/STEEL, CLARK/CLOTH and BLAKE/PAPER.  
Training/ demonstration users containing the popular EMP and DEPT tables  
Created by: ?/rdbms/admin/utlsampl.sql  
Can password be changed: Yes  
Can user be dropped: YES - Drop users cascade from all production environments  
HR/HR (Human Resources), OE/OE (Order Entry), SH/SH (Sales History).  
Training/ demonstration users containing the popular EMPLOYEES and DEPARTMENTS tables  
Created by: ?/demo/schema/mksample.sql  
Can password be changed: Yes  
Can user be dropped: YES - Drop users cascade from all production environments  
CTXSYS/CTXSYS  
Oracle interMedia (ConText Cartridge) administrator user  
Created by: ?/ctx/admin/dr0csys.sql  
TRACESVR/TRACE  
Oracle Trace server  
Created by: ?/rdbms/admin/otrcsvr.sql  
DBSNMP/DBSNMP  
Oracle Intelligent agent  
Created by: ?/rdbms/admin/catsnmp.sql, called from catalog.sql  
Can password be changed: Yes - put the new password in snmp\_rw.ora file  
Can user be dropped: YES - Only if you do not use the Intelligent Agents  
ORDPLUGINS/ORDPLUGINS  
Object Relational Data (ORD) User used by Time Series, etc.  
Created by: ?/ord/admin/ordinst.sql  
ORDSYS/ORDSYS  
Object Relational Data (ORD) User used by Time Series, etc  
Created by: ?/ord/admin/ordinst.sql  
DSSYS/DSSYS  
Oracle Dynamic Services and Syndication Server  
Created by: ?/ds/sql/dssys\_init.sql  
MDSYS/MDSYS  
Oracle Spatial administrator user  
Created by: ?/ord/admin/ordinst.sql  
AURORA$ORB$UNAUTHENTICATED/INVALID  
Used for users who do not authenticate in Aurora/ORB  
Created by: ?/javavm/install/init\_orb.sql called from ?/javavm/install/initjvm.sql  
PERFSTAT/PERFSTAT  
Oracle Statistics Package (STATSPACK) that supersedes UTLBSTAT/UTLESTAT  
Created by: ?/rdbms/admin/statscre.sql  
Remember to change the passwords for the SYS and SYSTEM users immediately after installation!   
Except for the user SYS, there should be no problem altering these users to use a different default and temporary tablespace.

**How does one enforce strict password control? (for DBA)**  
By default Oracle's security is not extremely good. For example, Oracle will allow users to choose single character passwords and passwords that match their names and userids. Also, passwords don't ever expire. This means that one can hack an account for years without ever locking the user.   
From Oracle8 one can manage passwords through profiles. Some of the things that one can restrict:   
. FAILED\_LOGIN\_ATTEMPTS - failed login attempts before the account is locked   
. PASSWORD\_LIFE\_TIME - limits the number of days the same password can be used for authentication   
. PASSWORD\_REUSE\_TIME - number of days before a password can be reused   
. PASSWORD\_REUSE\_MAX - number of password changes required before the current password can be reused   
. PASSWORD\_LOCK\_TIME - number of days an account will be locked after maximum failed login attempts   
. PASSWORD\_GRACE\_TIME - number of days after the grace period begins during which a warning is issued and login is allowed   
. PASSWORD\_VERIFY\_FUNCTION - password complexity verification script   
Look at this simple example:   
CREATE PROFILE my\_profile LIMIT  
PASSWORD\_LIFE\_TIME 30;  
ALTER USER scott PROFILE my\_profile;

**How does one switch to another user in Oracle? (for DBA)**  
Users normally use the "connect" statement to connect from one database user to another. However, DBAs can switch from one user to another without a password. Of course it is not advisable to bridge Oracle's security, but look at this example: SQL> select password from dba\_users where username='SCOTT';  
PASSWORD  
F894844C34402B67  
SQL> alter user scott identified by lion;  
User altered.  
  
SQL> connect scott/lion  
Connected.  
  
REM Do whatever you like...  
SQL> connect system/manager  
Connected.  
  
SQL> alter user scott identified by values 'F894844C34402B67';  
User altered.  
SQL> connect scott/tiger  
Connected.  
Note: Also see the su.sql script in the Useful Scripts and Sample Programs Page.

What are snap shots and viewsSnapshots are mirror or replicas of tables. Views are built using the columns from one or more tables. The Single Table View can be updated but the view with multi table cannot be updated

**What are the OOPS concepts in Oracle.**   
Oracle does implement the OOPS concepts. The best example is the Property Classes. We can categorize the properties by setting the visual attributes and then attach the property classes for the objects. OOPS supports the concepts of objects and classes and we can consider the property classes as classes and the items as objects

**What is the difference between candidate key, unique key and primary key**   
Candidate keys are the columns in the table that could be the primary keys and the primary key is the key that has been selected to identify the rows. Unique key is also useful for identifying the distinct rows in the table.)

**What is concurrency**   
Concurrency is allowing simultaneous access of same data by different users. Locks useful for accesing the database are  
a) Exclusive   
The exclusive lock is useful for locking the row when an insert,update or delete is being done.This lock should not be applied when we do only select from the row.  
b) Share lock  
We can do the table as Share\_Lock as many share\_locks can be put on the same resource.

**Previleges and Grants**   
Previleges are the right to execute a particulare type of SQL statements. e.g :: Right to Connect, Right to create, Right to resource Grants are given to the objects so that the object might be accessed accordingly.The grant has to be given by the owner of the object

**Table Space,Data Files,Parameter File, Control Files**   
Table Space :: The table space is useful for storing the data in the database.When a database is created two table spaces are created.  
a) System Table space :: This data file stores all the tables related to the system and dba tables  
b) User Table space :: This data file stores all the user related tables   
We should have seperate table spaces for storing the tables and indexes so that the access is fast.  
Data Files :: Every Oracle Data Base has one or more physical data files.They store the data for the database.Every datafile is associated with only one database.Once the Data file is created the size cannot change.To increase the size of the database to store more data we have to add data file.   
Parameter Files :: Parameter file is needed to start an instance.A parameter file contains the list of instance configuration parameters e.g.::  
db\_block\_buffers = 500  
db\_name = ORA7  
db\_domain = u.s.acme lang  
Control Files :: Control files record the physical structure of the data files and redo log files  
They contain the Db name, name and location of dbs, data files ,redo log files and time stamp.

**Physical Storage of the Data**   
The finest level of granularity of the data base are the data blocks.  
Data Block :: One Data Block correspond to specific number of physical database space  
Extent :: Extent is the number of specific number of contigious data blocks.  
Segments :: Set of Extents allocated for Extents. There are three types of Segments  
a) Data Segment :: Non Clustered Table has data segment data of every table is stored in cluster data segment  
b) Index Segment :: Each Index has index segment that stores data  
c) Roll Back Segment :: Temporarily store 'undo' information

**What are the Pct Free and Pct Used**   
Pct Free is used to denote the percentage of the free space that is to be left when creating a table. Similarly Pct Used is used to denote the percentage of the used space that is to be used when creating a table  
eg.:: Pctfree 20, Pctused 40

**What is Row Chaining**   
The data of a row in a table may not be able to fit the same data block.Data for row is stored in a chain of data blocks .

**What is a 2 Phase Commit**   
Two Phase commit is used in distributed data base systems. This is useful to maintain the integrity of the database so that all the users see the same values. It contains DML statements or Remote Procedural calls that reference a remote object. There are basically 2 phases in a 2 phase commit.  
a) Prepare Phase :: Global coordinator asks participants to prepare  
b) Commit Phase :: Commit all participants to coordinator to Prepared, Read only or abort Reply

**What is the difference between deleting and truncating of tables**   
Deleting a table will not remove the rows from the table but entry is there in the database dictionary and it can be retrieved But truncating a table deletes it completely and it cannot be retrieved.

**What are mutating tables**   
When a table is in state of transition it is said to be mutating. eg :: If a row has been deleted then the table is said to be mutating and no operations can be done on the table except select.

**What are Codd Rules**   
Codd Rules describe the ideal nature of a RDBMS. No RDBMS satisfies all the 12 codd rules and Oracle Satisfies 11 of the 12 rules and is the only Rdbms to satisfy the maximum number of rules.

**What is Normalisation**   
Normalisation is the process of organising the tables to remove the redundancy.There are mainly 5 Normalisation rules.  
a) 1 Normal Form :: A table is said to be in 1st Normal Form when the attributes are atomic  
b) 2 Normal Form :: A table is said to be in 2nd Normal Form when all the candidate keys are dependant on the primary key  
c) 3rd Normal Form :: A table is said to be third Normal form when it is not dependant transitively

**What is the Difference between a post query and a pre query**   
A post query will fire for every row that is fetched but the pre query will fire only once.

**Deleting the Duplicate rows in the table**   
We can delete the duplicate rows in the table by using the Rowid

**Can U disable database trigger? How?**   
Yes. With respect to table  
ALTER TABLE TABLE  
[[ DISABLE all\_trigger ]]

**What is pseudo columns ? Name them?**   
A pseudocolumn behaves like a table column, but is not actually stored in the table. You can select from pseudocolumns, but you cannot insert, update, or delete their values. This section describes these pseudocolumns:   
\* CURRVAL   
\* NEXTVAL   
\* LEVEL   
\* ROWID   
\* ROWNUM

**How many columns can table have?**   
The number of columns in a table can range from 1 to 254.

**Is space acquired in blocks or extents ?**   
In extents .

**What is clustered index?**   
In an indexed cluster, rows are stored together based on their cluster key values . Can not applied for HASH.

**What are the datatypes supported By oracle (INTERNAL)?**   
Varchar2, Number,Char , MLSLABEL.

**What are attributes of cursor?**   
%FOUND , %NOTFOUND , %ISOPEN,%ROWCOUNT

Can you use select in FROM clause of SQL select ? Yes.

Which trigger are created when master -detail relay?master delete property  
\* NON-ISOLATED (default)  
a) on check delete master  
b) on clear details  
c) on populate details  
\* ISOLATED  
a) on clear details  
b) on populate details  
\* CASCADE  
a) per-delete  
b) on clear details  
c) on populate details

**which system variables can be set by users?**   
SYSTEM.MESSAGE\_LEVEL  
SYSTEM.DATE\_THRESHOLD  
SYSTEM.EFFECTIVE\_DATE  
SYSTEM.SUPPRESS\_WORKING

**What are object group?**   
An object group is a container for a group of objects. You define an object group when you want to package related objects so you can copy or reference them in another module.

**What are referenced objects?**   
Referencing allows you to create objects that inherit their functionality and appearance from other objects. Referencing an object is similar to copying an object, except that the resulting reference object maintains a link to its source object. A reference object automatically inherits any changes that have been made to the source object when you open or regenerate the module that contains the reference object.

**Can you store objects in library?**   
Referencing allows you to create objects that inherit their functionality and appearance from other objects. Referencing an object is similar to copying an object, except that the resulting reference object maintains a link to its source object. A reference object automatically inherits any changes that have been made to the source object when you open or regenerate the module that contains the reference object.

**Is forms 4.5 object oriented tool ? why?**   
yes , partially. 1) PROPERTY CLASS - inheritance property 2) OVERLOADING : procedures and functions.

**Can you issue DDL in forms?**   
yes, but you have to use FORMS\_DDL.  
Referencing allows you to create objects that inherit their functionality and appearance from other objects. Referencing an object is similar to copying an object, except that the resulting reference object maintains a link to its source object. A reference object automatically inherits any changes that have been made to the source object when you open or regenerate the module that contains the reference object. Any string expression up to 32K:   
- a literal   
- an expression or a variable representing the text of a block of dynamically created PL/SQL code   
- a DML statement or   
- a DDL statement   
Restrictions:  
The statement you pass to FORMS\_DDL may not contain bind variable references in the string, but the values of bind variables can be concatenated into the string before passing the result to FORMS\_DDL.

**What is SECURE property?**   
- Hides characters that the operator types into the text item. This setting is typically used for password protection.

**What are the types of triggers and how the sequence of firing in text item**   
Triggers can be classified as Key Triggers, Mouse Triggers ,Navigational Triggers.   
Key Triggers :: Key Triggers are fired as a result of Key action.e.g :: Key-next-field, Key-up,Key-Down  
Mouse Triggers :: Mouse Triggers are fired as a result of the mouse navigation.e.g. When-mouse-button-presed,when-mouse-doubleclicked,etc  
Navigational Triggers :: These Triggers are fired as a result of Navigation. E.g. : Post-Text-item,Pre-text-item.  
We also have event triggers like when ?new-form-instance and when-new-block-instance.  
We cannot call restricted procedures like go\_to(?my\_block.first\_item?) in the Navigational triggers  
But can use them in the Key-next-item.  
The Difference between Key-next and Post-Text is an very important question. The key-next is fired as a result of the key action while the post text is fired as a result of the mouse movement. Key next will not fire unless there is a key event. The sequence of firing in a text item are as follows ::  
a) pre - text  
b) when new item   
c) key-next  
d) when validate   
e) post text

**Can you store pictures in database? How?**   
Yes , in long Raw datatype.

**What are property classes ? Can property classes have trigger?**   
Property class inheritance is a powerful feature that allows you to quickly define objects that conform to your own interface and functionality standards. Property classes also allow you to make global changes to applications quickly. By simply changing the definition of a property class, you can change the definition of all objects that inherit properties from that class.   
Yes . All type of triggers .

**If you have property class attached to an item and you have same trigger written for the item . Which will fire first?**   
Item level trigger fires , If item level trigger fires, property level trigger won't fire. Triggers at the lowest level are always given the first preference. The item level trigger fires first and then the block and then the Form level trigger.

**What are record groups ? \* Can record groups created at run-time?**   
A record group is an internal Oracle Forms data structure that has a column/row framework similar to a database table. However, unlike database tables, record groups are separate objects that belong to the form module in which they are defined. A record group can have an unlimited number of columns of type CHAR, LONG, NUMBER, or DATE provided that the total number of columns does not exceed 64K. Record group column names cannot exceed 30 characters.  
Programmatically, record groups can be used whenever the functionality offered by a two-dimensional array of multiple data types is desirable.   
TYPES OF RECORD GROUP:  
Query Record Group A query record group is a record group that has an associated SELECT statement. The columns in a query record group derive their default names, data types, and lengths from the database columns referenced in the SELECT statement. The records in a query record group are the rows retrieved by the query associated with that record group.   
Non-query Record Group A non-query record group is a group that does not have an associated query, but whose structure and values can be modified programmatically at runtime.   
Static Record Group A static record group is not associated with a query; rather, you define its structure and row values at design time, and they remain fixed at runtime.

**What are ALERT?**   
An ALERT is a modal window that displays a message notifying operator of some application condition.

**Can a button have icon and label at the same time ?**   
-NO

**What is mouse navigate property of button?**   
When Mouse Navigate is True (the default), Oracle Forms performs standard navigation to move the focus to the item when the operator activates the item with the mouse.   
When Mouse Navigate is set to False, Oracle Forms does not perform navigation (and the resulting validation) to move to the item when an operator activates the item with the mouse.

**What is FORMS\_MDI\_WINDOW?**   
forms run inside the MDI application window. This property is useful for calling a form from another one.

**What are timers ? when when-timer-expired does not fire?**   
The When-Timer-Expired trigger can not fire during trigger, navigation, or transaction processing.

**Can object group have a block?**   
Yes , object group can have block as well as program units.

**How many types of canvases are there.**   
There are 2 types of canvases called as Content and Stack Canvas. Content canvas is the default and the one that is used mostly for giving the base effect. Its like a plate on which we add items and stacked canvas is used for giving 3 dimensional effect.

**What are user-exits?**   
It invokes 3GL programs.

**Can you pass values to-and-fro from foreign function ? how ?**   
Yes . You obtain a return value from a foreign function by assigning the return value to an Oracle Forms variable or item. Make sure that the Oracle Forms variable or item is the same data type as the return value from the foreign function.  
After assigning an Oracle Forms variable or item value to a PL/SQL variable, pass the PL/SQL variable as a parameter value in the PL/SQL interface of the foreign function. The PL/SQL variable that is passed as a parameter must be a valid PL/SQL data type; it must also be the appropriate parameter type as defined in the PL/SQL interface.

**What is IAPXTB structure ?**   
The entries of Pro \* C and user exits and the form which simulate the proc or user\_exit are stored in IAPXTB table in d/b.

**Can you call WIN-SDK thru user exits?**   
YES.

Can u have OLE objects in forms?Yes.

**Can u have VBX and OCX controls in forms ?**   
Yes.

**What r the types of windows (Window style)?**   
Specifies whether the window is a Document window or a Dialog window.

**What is OLE Activation style property?**   
Specifies the event that will activate the OLE containing item.

**Can u change the mouse pointer ? How?**   
Yes. Specifies the mouse cursor style. Use this property to dynamically change the shape of the cursor.

**How many types of columns are there and what are they**   
Formula columns :: For doing mathematical calculations and returning one value Summary Columns :: For doing summary calculations such as summations etc. Place holder Columns :: These columns are useful for storing the value in a variable

**Can u have more than one layout in report**   
It is possible to have more than one layout in a report by using the additional layout option in the layout editor.

**Can u run the report with out a parameter form**   
Yes it is possible to run the report without parameter form by setting the PARAM value to Null

**What is the lock option in reports layout**   
By using the lock option we cannot move the fields in the layout editor outside the frame. This is useful for maintaining the fields .

**What is Flex**   
Flex is the property of moving the related fields together by setting the flex property on

**What are the minimum number of groups required for a matrix report**   
The minimum of groups required for a matrix report are 4 e -----

**What is a Synonym ?**   
A synonym is an alias for a table, view, sequence or program unit.

**What is a Sequence ?**   
A sequence generates a serial list of unique numbers for numerical columns of a database's tables.

**What is a Segment ?**   
A segment is a set of extents allocated for a certain logical structure.

**What is schema?**   
A schema is collection of database objects of a User.

**Describe Referential Integrity ?**   
A rule defined on a column (or set of columns) in one table that allows the insert or update of a row only if the value for the column or set of columns (the dependent value) matches a value in a column of a related table (the referenced value). It also specifies the type of data manipulation allowed on referenced data and the action to be performed on dependent data as a result of any action on referenced data.

**What is Hash Cluster ?**   
A row is stored in a hash cluster based on the result of applying a hash function to the row's cluster key value. All rows with the same hash key value are stores together on disk.

**What is a Private Synonyms ?**   
A Private Synonyms can be accessed only by the owner.

**What is Database Link ?**   
A database link is a named object that describes a "path" from one database to another.

**What is index cluster?**   
A cluster with an index on the cluster key.

**What is hash cluster?**   
A row is stored in a hash cluster based on the result of applying a hash function to the row's cluster key value. All rows with the same hash key value are stores together on disk.

**When can hash cluster used?**   
Hash clusters are better choice when a table is often queried with equality queries. For such queries the specified cluster key value is hashed. The resulting hash key value points directly to the area on disk that stores the specified rows.

**When can hash cluster used?**   
Hash clusters are better choice when a table is often queried with equality queries. For such queries the specified cluster key value is hashed. The resulting hash key value points directly to the area on disk that stores the specified rows.

**What are the types of database links?**   
Private database link, public database link & network database link.

**What is private database link?**   
Private database link is created on behalf of a specific user. A private database link can be used only when the owner of the link specifies a global object name in a SQL statement or in the definition of the owner's views or procedures.

**What is public database link?**   
Public database link is created for the special user group PUBLIC. A public database link can be used when any user in the associated database specifies a global object name in a SQL statement or object definition.

**What is network database link?**   
Network database link is created and managed by a network domain service. A network database link can be used when any user of any database in the network specifies a global object name in a SQL statement or object definition.

**What is data block?**   
Oracle database's data is stored in data blocks. One data block corresponds to a specific number of bytes of physical database space on disk.

**How to define data block size?**   
A data block size is specified for each Oracle database when the database is created. A database users and allocated free database space in Oracle data blocks. Block size is specified in init.ora file and cannot be changed latter.

**What is row chaining?**   
In circumstances, all of the data for a row in a table may not be able to fit in the same data block. When this occurs, the data for the row is stored in a chain of data block (one or more) reserved for that segment.

**What is an extent?**   
An extent is a specific number of contiguous data blocks, obtained in a single allocation and used to store a specific type of information.

What are the different types of segments?Data segment, index segment, rollback segment and temporary segment.

**What is a data segment?**   
Each non-clustered table has a data segment. All of the table's data is stored in the extents of its data segment. Each cluster has a data segment. The data of every table in the cluster is stored in the cluster's data segment.

**What is an index segment?**   
Each index has an index segment that stores all of its data.

**What is rollback segment?**   
A database contains one or more rollback segments to temporarily store "undo" information.

**What are the uses of rollback segment?**   
To generate read-consistent database information during database recovery and to rollback uncommitted transactions by the users.

**What is a temporary segment?**   
Temporary segments are created by Oracle when a SQL statement needs a temporary work area to complete execution. When the statement finishes execution, the temporary segment extents are released to the system for future use.

**What is a datafile?**   
Every Oracle database has one or more physical data files. A database's data files contain all the database data. The data of logical database structures such as tables and indexes is physically stored in the data files allocated for a database.

**What are the characteristics of data files?**   
A data file can be associated with only one database. Once created a data file can't change size. One or more data files form a logical unit of database storage called a tablespace.

**What is a redo log?**   
The set of redo log files for a database is collectively known as the database redo log.

**What is the function of redo log?**   
The primary function of the redo log is to record all changes made to data.

**What is the use of redo log information?**   
The information in a redo log file is used only to recover the database from a system or media failure prevents database data from being written to a database's data files.

**What does a control file contains?**   
- Database name  
- Names and locations of a database's files and redolog files.  
- Time stamp of database creation.

**What is the use of control file?**   
When an instance of an Oracle database is started, its control file is used to identify the database and redo log files that must be opened for database operation to proceed. It is also used in database recovery.

**Is it possible to split the print reviewer into more than one region?**   
Yes

Is it possible to center an object horizontally in a repeating frame that has a variable horizontal size? Yes

**For a field in a repeating frame, can the source come from the column which does not exist in the data group which forms the base for the frame?**   
Yes

**Can a field be used in a report without it appearing in any data group?**   
Yes

The join defined by the default data link is an outer join yes or no?   
Yes

**Can a formula column referred to columns in higher group?**   
Yes

**Can a formula column be obtained through a select statement?**   
Yes

**Is it possible to insert comments into sql statements return in the data model editor?**   
Yes

**Is it possible to disable the parameter from while running the report?**   
Yes

**When a form is invoked with call\_form, Does oracle forms issues a save point?**   
Yes

**Explain the difference between a hot backup and a cold backup and the benefits associated with each.**   
A hot backup is basically taking a backup of the database while it is still up and running and it must be in archive log mode. A cold backup is taking a backup of the database while it is shut down and does not require being in archive log mode. The benefit of taking a hot backup is that the database is still available for use while the backup is occurring and you can recover the database to any point in time. The benefit of taking a cold backup is that it is typically easier to administer the backup and recovery process. In addition, since you are taking cold backups the database does not require being in archive log mode and thus there will be a slight performance gain as the database is not cutting archive logs to disk.

**You have just had to restore from backup and do not have any control files. How would you go about bringing up this database?**   
I would create a text based backup control file, stipulating where on disk all the data files where and then issue the recover command with the using backup control file clause.

**How do you switch from an init.ora file to a spfile?**   
Issue the create spfile from pfile command.

**Explain the difference between a data block, an extent and a segment.**   
A data block is the smallest unit of logical storage for a database object. As objects grow they take chunks of additional storage that are composed of contiguous data blocks. These groupings of contiguous data blocks are called extents. All the extents that an object takes when grouped together are considered the segment of the database object.

**Give two examples of how you might determine the structure of the table DEPT.**   
Use the describe command or use the dbms\_metadata.get\_ddl package.

**Where would you look for errors from the database engine?**   
In the alert log.

Compare and contrast TRUNCATE and DELETE for a table. Both the truncate and delete command have the desired outcome of getting rid of all the rows in a table. The difference between the two is that the truncate command is a DDL operation and just moves the high water mark and produces a now rollback. The delete command, on the other hand, is a DML operation, which will produce a rollback and thus take longer to complete.

**Give the reasoning behind using an index.**   
Faster access to data blocks in a table.

**Give the two types of tables involved in producing a star schema and the type of data they hold.**   
Fact tables and dimension tables. A fact table contains measurements while dimension tables will contain data that will help describe the fact tables.

**What type of index should you use on a fact table?**   
A Bitmap index.

**Give two examples of referential integrity constraints.**   
A primary key and a foreign key.

**A table is classified as a parent table and you want to drop and re-create it. How would you do this without affecting the children tables?**   
Disable the foreign key constraint to the parent, drop the table, re-create the table, enable the foreign key constraint.

**Explain the difference between ARCHIVELOG mode and NOARCHIVELOG mode and the benefits and disadvantages to each.**   
ARCHIVELOG mode is a mode that you can put the database in for creating a backup of all transactions that have occurred in the database so that you can recover to any point in time. NOARCHIVELOG mode is basically the absence of ARCHIVELOG mode and has the disadvantage of not being able to recover to any point in time. NOARCHIVELOG mode does have the advantage of not having to write transactions to an archive log and thus increases the performance of the database slightly.

What are the different types of segments?Data segment, index segment, rollback segment and temporary segment.

**What is a data segment?**   
Each non-clustered table has a data segment. All of the table's data is stored in the extents of its data segment. Each cluster has a data segment. The data of every table in the cluster is stored in the cluster's data segment.

**What is an index segment?**   
Each index has an index segment that stores all of its data.

**What is rollback segment?**   
A database contains one or more rollback segments to temporarily store "undo" information.

**What are the uses of rollback segment?**   
To generate read-consistent database information during database recovery and to rollback uncommitted transactions by the users.

**What is a temporary segment?**   
Temporary segments are created by Oracle when a SQL statement needs a temporary work area to complete execution. When the statement finishes execution, the temporary segment extents are released to the system for future use.

**What is a datafile?**   
Every Oracle database has one or more physical data files. A database's data files contain all the database data. The data of logical database structures such as tables and indexes is physically stored in the data files allocated for a database.

**What are the characteristics of data files?**   
A data file can be associated with only one database. Once created a data file can't change size. One or more data files form a logical unit of database storage called a tablespace.

**What is a redo log?**   
The set of redo log files for a database is collectively known as the database redo log.

**What is the function of redo log?**   
The primary function of the redo log is to record all changes made to data.

**What is the use of redo log information?**   
The information in a redo log file is used only to recover the database from a system or media failure prevents database data from being written to a database's data files.

**What does a control file contains?**   
- Database name  
- Names and locations of a database's files and redolog files.  
- Time stamp of database creation.

**What is the use of control file?**   
When an instance of an Oracle database is started, its control file is used to identify the database and redo log files that must be opened for database operation to proceed. It is also used in database recovery.

**Is it possible to split the print reviewer into more than one region?**   
Yes

Is it possible to center an object horizontally in a repeating frame that has a variable horizontal size? Yes

**For a field in a repeating frame, can the source come from the column which does not exist in the data group which forms the base for the frame?**   
Yes

**Can a field be used in a report without it appearing in any data group?**   
Yes

The join defined by the default data link is an outer join yes or no?   
Yes

**Can a formula column referred to columns in higher group?**   
Yes

**Can a formula column be obtained through a select statement?**   
Yes

**Is it possible to insert comments into sql statements return in the data model editor?**   
Yes

**Is it possible to disable the parameter from while running the report?**   
Yes

**When a form is invoked with call\_form, Does oracle forms issues a save point?**   
Yes

**Explain the difference between a hot backup and a cold backup and the benefits associated with each.**   
A hot backup is basically taking a backup of the database while it is still up and running and it must be in archive log mode. A cold backup is taking a backup of the database while it is shut down and does not require being in archive log mode. The benefit of taking a hot backup is that the database is still available for use while the backup is occurring and you can recover the database to any point in time. The benefit of taking a cold backup is that it is typically easier to administer the backup and recovery process. In addition, since you are taking cold backups the database does not require being in archive log mode and thus there will be a slight performance gain as the database is not cutting archive logs to disk.

**You have just had to restore from backup and do not have any control files. How would you go about bringing up this database?**   
I would create a text based backup control file, stipulating where on disk all the data files where and then issue the recover command with the using backup control file clause.

**How do you switch from an init.ora file to a spfile?**   
Issue the create spfile from pfile command.

**Explain the difference between a data block, an extent and a segment.**   
A data block is the smallest unit of logical storage for a database object. As objects grow they take chunks of additional storage that are composed of contiguous data blocks. These groupings of contiguous data blocks are called extents. All the extents that an object takes when grouped together are considered the segment of the database object.

**Give two examples of how you might determine the structure of the table DEPT.**   
Use the describe command or use the dbms\_metadata.get\_ddl package.

**Where would you look for errors from the database engine?**   
In the alert log.

Compare and contrast TRUNCATE and DELETE for a table. Both the truncate and delete command have the desired outcome of getting rid of all the rows in a table. The difference between the two is that the truncate command is a DDL operation and just moves the high water mark and produces a now rollback. The delete command, on the other hand, is a DML operation, which will produce a rollback and thus take longer to complete.

**Give the reasoning behind using an index.**   
Faster access to data blocks in a table.

**Give the two types of tables involved in producing a star schema and the type of data they hold.**   
Fact tables and dimension tables. A fact table contains measurements while dimension tables will contain data that will help describe the fact tables.

**What type of index should you use on a fact table?**   
A Bitmap index.

**Give two examples of referential integrity constraints.**   
A primary key and a foreign key.

**A table is classified as a parent table and you want to drop and re-create it. How would you do this without affecting the children tables?**   
Disable the foreign key constraint to the parent, drop the table, re-create the table, enable the foreign key constraint.

**Explain the difference between ARCHIVELOG mode and NOARCHIVELOG mode and the benefits and disadvantages to each.**   
ARCHIVELOG mode is a mode that you can put the database in for creating a backup of all transactions that have occurred in the database so that you can recover to any point in time. NOARCHIVELOG mode is basically the absence of ARCHIVELOG mode and has the disadvantage of not being able to recover to any point in time. NOARCHIVELOG mode does have the advantage of not having to write transactions to an archive log and thus increases the performance of the database slightly.

What is the function of Optimizer ?The goal of the optimizer is to choose the most efficient way to execute a SQL statement.

**What is Execution Plan ?**   
The combinations of the steps the optimizer chooses to execute a statement is called an execution plan.

**Can one resize tablespaces and data files? (for DBA)**   
One can manually increase or decrease the size of a datafile from Oracle 7.2 using the command.  
ALTER DATABASE DATAFILE 'filename2' RESIZE 100M;  
Because you can change the sizes of datafiles, you can add more space to your database without adding more datafiles. This is beneficial if you are concerned about reaching the maximum number of datafiles allowed in your database.   
Manually reducing the sizes of datafiles allows you to reclaim unused space in the database. This is useful for correcting errors in estimations of space requirements.   
Also, datafiles can be allowed to automatically extend if more space is required. Look at the following command:   
CREATE TABLESPACE pcs\_data\_ts  
DATAFILE 'c:\ora\_apps\pcs\pcsdata1.dbf' SIZE 3M  
AUTOEXTEND ON NEXT 1M MAXSIZE UNLIMITED  
DEFAULT STORAGE (INITIAL 10240  
NEXT 10240  
MINEXTENTS 1  
MAXEXTENTS UNLIMITED  
PCTINCREASE 0)  
ONLINE  
PERMANENT;

**What is SAVE POINT ?**   
For long transactions that contain many SQL statements, intermediate markers or savepoints can be declared which can be used to divide a transaction into smaller parts. This allows the option of later rolling back all work performed from the current point in the transaction to a declared savepoint within the transaction.

**What are the values that can be specified for OPTIMIZER MODE Parameter ?**   
COST and RULE.

**Can one rename a tablespace? (for DBA)**   
No, this is listed as Enhancement Request 148742. Workaround:   
Export all of the objects from the tablespace  
Drop the tablespace including contents  
Recreate the tablespace  
Import the objects

**What is RULE-based approach to optimization ?**   
Choosing an executing planbased on the access paths available and the ranks of these access paths.

**What are the values that can be specified for OPTIMIZER\_GOAL parameter of the ALTER SESSION Command ?**  
CHOOSE,ALL\_ROWS,FIRST\_ROWS and RULE.

**How does one create a standby database? (for DBA)**   
While your production database is running, take an (image copy) backup and restore it on duplicate hardware. Note that an export will not work!!!   
On your standby database, issue the following commands:   
ALTER DATABASE CREATE STANDBY CONTROLFILE AS 'filename';  
ALTER DATABASE MOUNT STANDBY DATABASE;  
RECOVER STANDBY DATABASE;  
On systems prior to Oracle 8i, write a job to copy archived redo log files from the primary database to the standby system, and apply the redo log files to the standby database (pipe it). Remember the database is recovering and will prompt you for the next log file to apply.   
Oracle 8i onwards provide an "Automated Standby Database" feature, which will send archived, log files to the remote site via NET8, and apply then to the standby database.   
When one needs to activate the standby database, stop the recovery process and activate it:   
ALTER DATABASE ACTIVATE STANDBY DATABASE;

**How does one give developers access to trace files (required as input to tkprof)? (for DBA)**   
The "alter session set sql\_trace=true" command generates trace files in USER\_DUMP\_DEST that can be used by developers as input to tkprof. On Unix the default file mask for these files are "rwx r-- ---".   
There is an undocumented INIT.ORA parameter that will allow everyone to read (rwx r-r--) these trace files:  
\_trace\_files\_public = true  
Include this in your INIT.ORA file and bounce your database for it to take effect.

**What are the responsibilities of a Database Administrator ?**   
Installing and upgrading the Oracle Server and application tools. Allocating system storage and planning future storage requirements for the database system. Managing primary database structures (tablespaces) Managing primary objects (table,views,indexes) Enrolling users and maintaining system security. Ensuring compliance with Oralce license agreement Controlling and monitoring user access to the database. Monitoring and optimizing the performance of the database. Planning for backup and recovery of database information. Maintain archived data on tape Backing up and restoring the database. Contacting Oracle Corporation for technical support.

**What is a trace file and how is it created ?**   
Each server and background process can write an associated trace file. When an internal error is detected by a process or user process, it dumps information about the error to its trace. This can be used for tuning the database.

**What are the roles and user accounts created automatically with the database?**   
DBA - role Contains all database system privileges.  
SYS user account - The DBA role will be assigned to this account. All of the base tables and views for the database's dictionary are store in this schema and are manipulated only by ORACLE. SYSTEM user account - It has all the system privileges for the database and additional tables and views that display administrative information and internal tables and views used by oracle tools are created using this username.

**What are the minimum parameters should exist in the parameter file (init.ora) ?**   
DB NAME - Must set to a text string of no more than 8 characters and it will be stored inside the datafiles, redo log files and control files and control file while database creation.  
DB\_DOMAIN - It is string that specifies the network domain where the database is created. The global database name is identified by setting these parameters  
(DB\_NAME & DB\_DOMAIN) CONTORL FILES - List of control filenames of the database. If name is not mentioned then default name will be used.   
DB\_BLOCK\_BUFFERS - To determine the no of buffers in the buffer cache in SGA.  
PROCESSES - To determine number of operating system processes that can be connected to ORACLE concurrently. The value should be 5 (background process) and additional 1 for each user.  
ROLLBACK\_SEGMENTS - List of rollback segments an ORACLE instance acquires at database startup. Also optionally LICENSE\_MAX\_SESSIONS,LICENSE\_SESSION\_WARNING and LICENSE\_MAX\_USERS.

**Why and when should I backup my database? (for DBA)**  
Backup and recovery is one of the most important aspects of a DBAs job. If you lose your company's data, you could very well lose your job. Hardware and software can always be replaced, but your data may be irreplaceable!   
Normally one would schedule a hierarchy of daily, weekly and monthly backups, however consult with your users before deciding on a backup schedule. Backup frequency normally depends on the following factors:   
. Rate of data change/ transaction rate   
. Database availability/ Can you shutdown for cold backups?   
. Criticality of the data/ Value of the data to the company   
. Read-only tablespace needs backing up just once right after you make it read-only   
. If you are running in archivelog mode you can backup parts of a database over an extended cycle of days   
. If archive logging is enabled one needs to backup archived log files timeously to prevent database freezes   
. Etc.   
Carefully plan backup retention periods. Ensure enough backup media (tapes) are available and that old backups are expired in-time to make media available for new backups. Off-site vaulting is also highly recommended.   
Frequently test your ability to recover and document all possible scenarios. Remember, it's the little things that will get you. Most failed recoveries are a result of organizational errors and miscommunications.

**What strategies are available for backing-up an Oracle database? (for DBA)**  
The following methods are valid for backing-up an Oracle database:   
Export/Import - Exports are "logical" database backups in that they extract logical definitions and data from the database to a file.  
Cold or Off-line Backups - Shut the database down and backup up ALL data, log, and control files.   
Hot or On-line Backups - If the databases are available and in ARCHIVELOG mode, set the tablespaces into backup mode and backup their files. Also remember to backup the control files and archived redo log files.   
RMAN Backups - While the database is off-line or on-line, use the "rman" utility to backup the database.   
It is advisable to use more than one of these methods to backup your database. For example, if you choose to do on-line database backups, also cover yourself by doing database exports. Also test ALL backup and recovery scenarios carefully. It is better to be save than sorry.   
Regardless of your strategy, also remember to backup all required software libraries, parameter files, password files, etc. If your database is in ARCGIVELOG mode, you also need to backup archived log files.

**What is the difference between online and offline backups? (for DBA)**  
A hot backup is a backup performed while the database is online and available for read/write. Except for Oracle exports, one can only do on-line backups when running in ARCHIVELOG mode.   
A cold backup is a backup performed while the database is off-line and unavailable to its users.

**What is the difference between restoring and recovering? (for DBA)**  
Restoring involves copying backup files from secondary storage (backup media) to disk. This can be done to replace damaged files or to copy/move a database to a new location.   
Recovery is the process of applying redo logs to the database to roll it forward. One can roll-forward until a specific point-in-time (before the disaster occurred), or roll-forward until the last transaction recorded in the log files. Sql> connect SYS as SYSDBA  
Sql> RECOVER DATABASE UNTIL TIME '2001-03-06:16:00:00' USING BACKUP CONTROLFILE;

**How does one backup a database using the export utility? (for DBA)**  
Oracle exports are "logical" database backups (not physical) as they extract data and logical definitions from the database into a file. Other backup strategies normally back-up the physical data files.  
One of the advantages of exports is that one can selectively re-import tables, however one cannot roll-forward from an restored export file. To completely restore a database from an export file one practically needs to recreate the entire database.   
Always do full system level exports (FULL=YES). Full exports include more information about the database in the export file than user level exports.

**What are the built\_ins used the display the LOV?**   
Show\_lov  
List\_values

**How do you call other Oracle Products from Oracle Forms?**   
Run\_product is a built-in, Used to invoke one of the supported oracle tools products and specifies the name of the document or module to be run. If the called product is unavailable at the time of the call, Oracle Forms returns a message to the operator.

**What is the main diff. bet. Reports 2.0 & Reports 2.5?**   
Report 2.5 is object oriented.

**What are the Built-ins to display the user-named editor?**   
A user named editor can be displayed programmatically with the built in procedure SHOW-EDITOR, EDIT\_TETITEM independent of any particular text item.

**How many number of columns a record group can have?**   
A record group can have an unlimited number of columns of type CHAR, LONG, NUMBER, or DATE provided that the total number of column does not exceed 64K.

**What is a Query Record Group?**   
A query record group is a record group that has an associated SELECT statement. The columns in a query record group derive their default names, data types, had lengths from the database columns referenced in the SELECT statement. The records in query record group are the rows retrieved by the query associated with that record group.

**What does the term panel refer to with regard to pages?**   
A panel is the no. of physical pages needed to print one logical page.

**What is a master detail relationship?**   
A master detail relationship is an association between two base table blocks- a master block and a detail block. The relationship between the blocks reflects a primary key to foreign key relationship between the tables on which the blocks are based.

**What is a library?**   
A library is a collection of subprograms including user named procedures, functions and packages.

What is an anchoring object & what is its use? What are the various sub events a mouse double click event involves? An anchoring object is a print condition object which used to explicitly or implicitly anchor other objects to itself.

**Use the add\_group\_column function to add a column to record group that was created at a design time?**   
False

**What are the various sub events a mouse double click event involves? What are the various sub events a mouse double click event involves?**   
Double clicking the mouse consists of the mouse down, mouse up, mouse click, mouse down & mouse up events.

What is the use of break group? What are the various sub events a mouse double click event involves?A break group is used to display one record for one group ones. While multiple related records in other group can be displayed.

**What tuning indicators can one use? (for DBA)**  
The following high-level tuning indicators can be used to establish if a database is performing optimally or not:   
. Buffer Cache Hit Ratio  
Formula: Hit Ratio = (Logical Reads - Physical Reads) / Logical Reads  
Action: Increase DB\_CACHE\_SIZE (DB\_BLOCK\_BUFFERS prior to 9i) to increase hit ratio   
. Library Cache Hit Ratio  
Action: Increase the SHARED\_POOL\_SIZE to increase hit ratio

**What tools/utilities does Oracle provide to assist with performance tuning? (for DBA)**  
Oracle provide the following tools/ utilities to assist with performance monitoring and tuning:  
. TKProf  
. UTLBSTAT.SQL and UTLESTAT.SQL - Begin and end stats monitoring  
. Statspack  
. Oracle Enterprise Manager - Tuning Pack

**What is STATSPACK and how does one use it? (for DBA)**  
Statspack is a set of performance monitoring and reporting utilities provided by Oracle from Oracle8i and above. Statspack provides improved BSTAT/ESTAT functionality, though the old BSTAT/ESTAT scripts are still available. For more information about STATSPACK, read the documentation in file $ORACLE\_HOME/rdbms/admin/spdoc.txt.   
Install Statspack:   
cd $ORACLE\_HOME/rdbms/admin  
sqlplus "/ as sysdba" @spdrop.sql -- Install Statspack -  
sqlplus "/ as sysdba" @spcreate.sql-- Enter tablespace names when prompted  
Use Statspack:   
sqlplus perfstat/perfstat  
exec statspack.snap; -- Take a performance snapshots   
exec statspack.snap;   
o Get a list of snapshots  
select SNAP\_ID, SNAP\_TIME from STATS$SNAPSHOT;   
@spreport.sql -- Enter two snapshot id's for difference report  
Other Statspack Scripts:   
. sppurge.sql - Purge a range of Snapshot Id's between the specified begin and end Snap Id's   
. spauto.sql - Schedule a dbms\_job to automate the collection of STATPACK statistics   
. spcreate.sql - Installs the STATSPACK user, tables and package on a database (Run as SYS).   
. spdrop.sql - Deinstall STATSPACK from database (Run as SYS)   
. sppurge.sql - Delete a range of Snapshot Id's from the database   
. spreport.sql - Report on differences between values recorded in two snapshots   
. sptrunc.sql - Truncates all data in Statspack tables

**What are the common RMAN errors (with solutions)? (for DBA)**  
Some of the common RMAN errors are:   
RMAN-20242: Specification does not match any archivelog in the recovery catalog.  
Add to RMAN script: sql 'alter system archive log current';  
RMAN-06089: archived log xyz not found or out of sync with catalog  
Execute from RMAN: change archivelog all validate;

**How can you execute the user defined triggers in forms 3.0 ?**   
Execute Trigger (trigger-name)

**What ERASE package procedure does ?**   
Erase removes an indicated global variable.

**What is the difference between NAME\_IN and COPY ?**   
Copy is package procedure and writes values into a field.  
Name in is a package function and returns the contents of the variable to which you apply.

**What package procedure is used for calling another form ?**   
Call (E.g. Call(formname)

**When the form is running in DEBUG mode, If you want to examine the values of global variables and other form variables, What package procedure command you would use in your trigger text ?**   
Break.  
SYSTEM VARIABLES

The value recorded in system.last\_record variable is of type **a. Number  
b. Boolean  
c. Character. ?**   
b. Boolean.

**What is mean by Program Global Area (PGA) ?**   
It is area in memory that is used by a Single Oracle User Process.

**What is hit ratio ?**   
It is a measure of well the data cache buffer is handling requests for data. Hit Ratio = (Logical Reads - Physical Reads - Hits Misses)/ Logical Reads.

**How do u implement the If statement in the Select Statement**   
We can implement the if statement in the select statement by using the Decode statement. e.g. select DECODE (EMP\_CAT,'1','First','2','Second'Null); Here the Null is the else statement where null is done .

**How many types of Exceptions are there**   
There are 2 types of exceptions. They are  
a) System Exceptions  
e.g. When no\_data\_found, When too\_many\_rows  
b) User Defined Exceptions  
e.g. My\_exception exception  
When My\_exception then

**What are the inline and the precompiler directives**   
The inline and precompiler directives detect the values directly

**How do you use the same lov for 2 columns**   
We can use the same lov for 2 columns by passing the return values in global values and using the global values in the code

**How many minimum groups are required for a matrix report**   
The minimum number of groups in matrix report are 4

**What is the difference between static and dynamic lov**   
The static lov contains the predetermined values while the dynamic lov contains values that come at run time

**How does one manage Oracle database users? (for DBA)**  
Oracle user accounts can be locked, unlocked, forced to choose new passwords, etc. For example, all accounts except SYS and SYSTEM will be locked after creating an Oracle9iDB database using the DB Configuration Assistant (dbca). DBA's must unlock these accounts to make them available to users.   
Look at these examples:   
ALTER USER scott ACCOUNT LOCK -- lock a user account  
ALTER USER scott ACCOUNT UNLOCK; -- unlocks a locked users account  
ALTER USER scott PASSWORD EXPIRE; -- Force user to choose a new password

**What is the difference between DBFile Sequential and Scattered Reads?(for DBA)**  
Both "db file sequential read" and "db file scattered read" events signify time waited for I/O read requests to complete. Time is reported in 100's of a second for Oracle 8i releases and below, and 1000's of a second for Oracle 9i and above. Most people confuse these events with each other as they think of how data is read from disk. Instead they should think of how data is read into the SGA buffer cache.   
db file sequential read:   
A sequential read operation reads data into contiguous memory (usually a single-block read with p3=1, but can be multiple blocks). Single block I/Os are usually the result of using indexes. This event is also used for rebuilding the control file and reading data file headers (P2=1). In general, this event is indicative of disk contention on index reads.   
db file scattered read:   
Similar to db file sequential reads, except that the session is reading multiple data blocks and scatters them into different discontinuous buffers in the SGA. This statistic is NORMALLY indicating disk contention on full table scans. Rarely, data from full table scans could be fitted into a contiguous buffer area, these waits would then show up as sequential reads instead of scattered reads.   
The following query shows average wait time for sequential versus scattered reads:   
prompt "AVERAGE WAIT TIME FOR READ REQUESTS"  
select a.average\_wait "SEQ READ", b.average\_wait "SCAT READ"  
from sys.v\_$system\_event a, sys.v\_$system\_event b  
where a.event = 'db file sequential read'  
and b.event = 'db file scattered read';

**What is the use of PARFILE option in EXP command ?**   
Name of the parameter file to be passed for export.

**What is the use of TABLES option in EXP command ?**   
List of tables should be exported.ze)

**What is the OPTIMAL parameter?**   
It is used to set the optimal length of a rollback segment.

**How does one use ORADEBUG from Server Manager/ SQL\*Plus? (for DBA)**  
Execute the "ORADEBUG HELP" command from svrmgrl or sqlplus to obtain a list of valid ORADEBUG commands. Look at these examples:   
SQLPLUS> REM Trace SQL statements with bind variables  
SQLPLUS> oradebug setospid 10121  
Oracle pid: 91, Unix process pid: 10121, image: oracleorcl  
SQLPLUS> oradebug EVENT 10046 trace name context forever, level 12  
Statement processed.  
SQLPLUS> ! vi /app/oracle/admin/orcl/bdump/ora\_10121.trc  
SQLPLUS> REM Trace Process Statistics  
SQLPLUS> oradebug setorapid 2  
Unix process pid: 1436, image: ora\_pmon\_orcl  
SQLPLUS> oradebug procstat  
Statement processed.  
SQLPLUS>> oradebug TRACEFILE\_NAME  
/app/oracle/admin/orcl/bdump/pmon\_1436.trc  
SQLPLUS> REM List semaphores and shared memory segments in use  
SQLPLUS> oradebug ipc  
SQLPLUS> REM Dump Error Stack  
SQLPLUS> oradebug setospid <pid>  
SQLPLUS> oradebug event immediate trace name errorstack level 3  
SQLPLUS> REM Dump Parallel Server DLM locks  
SQLPLUS> oradebug lkdebug -a convlock  
SQLPLUS> oradebug lkdebug -a convres  
SQLPLUS> oradebug lkdebug -r <resource handle> (i.e 0x8066d338 from convres dump)

**Are there any undocumented commands in Oracle? (for DBA)**  
Sure there are, but it is hard to find them. Look at these examples:   
From Server Manager (Oracle7.3 and above): ORADEBUG HELP  
It looks like one can change memory locations with the ORADEBUG POKE command. Anyone brave enough to test this one for us? Previously this functionality was available with ORADBX (ls -l $ORACLE\_HOME/rdbms/lib/oradbx.o; make -f oracle.mk oradbx) SQL\*Plus: ALTER SESSION SET CURRENT\_SCHEMA = SYS

If the maximum record retrieved property of the query is set to 10 then a summary value will be calculated?Only for 10 records.

**What are the different objects that you cannot copy or reference in object groups?**   
Objects of different modules   
Another object groups  
Individual block dependent items   
Program units.

**What is an OLE?**   
Object Linking & Embedding provides you with the capability to integrate objects from many Ms-Windows applications into a single compound document creating integrated applications enables you to use the features form .

**Can a repeating frame be created without a data group as a base?**   
No

**Is it possible to set a filter condition in a cross product group in matrix reports?**   
No

**What is Overloading of procedures ?**   
The Same procedure name is repeated with parameters of different datatypes and parameters in different positions, varying number of parameters is called overloading of procedures. e.g. DBMS\_OUTPUT put\_line

**What are the return values of functions SQLCODE and SQLERRM ? What is Pragma EXECPTION\_INIT ? Explain the usage ?**   
SQLCODE returns the latest code of the error that has occurred.  
SQLERRM returns the relevant error message of the SQLCODE.

**What are the datatypes a available in PL/SQL ?**   
Some scalar data types such as NUMBER, VARCHAR2, DATE, CHAR, LONG, BOOLEAN. Some composite data types such as RECORD & TABLE.

**What are the two parts of a procedure ?**  
Procedure Specification and Procedure Body.

**What is the basic structure of PL/SQL ?**   
PL/SQL uses block structure as its basic structure. Anonymous blocks or nested blocks can be used in PL/SQL

**What is PL/SQL table ?**   
Objects of type TABLE are called "PL/SQL tables", which are modeled as (but not the same as) database tables, PL/SQL tables use a primary PL/SQL tables can have one column and a primary key. Cursors

**WHAT IS RMAN ? (for DBA)**  
Recovery Manager is a tool that: manages the process of creating backups and also manages the process of restoring and recovering from them.

**WHY USE RMAN ? (for DBA)**  
No extra costs …Its available free   
?RMAN introduced in Oracle 8 it has become simpler with newer versions and easier than user managed backups   
?Proper security   
?You are 100% sure your database has been backed up.   
?Its contains detail of the backups taken etc in its central repository   
Facility for testing validity of backups also commands like crosscheck to check the status of backup.   
Faster backups and restores compared to backups without RMAN   
RMAN is the only backup tool which supports incremental backups.   
Oracle 10g has got further optimized incremental backup which has resulted in improvement of performance during backup and recovery time   
Parallel operations are supported   
Better querying facility for knowing different details of backup   
No extra redo generated when backup is taken..compared to online   
backup without RMAN which results in saving of space in hard disk   
RMAN an intelligent tool   
Maintains repository of backup metadata   
Remembers backup set location   
Knows what need to backed up   
Knows what is required for recovery   
Knows what backups are redundant

**UNDERSTANDING THE RMAN ARCHITECTURE**  
An oracle RMAN comprises of  
RMAN EXECUTABLE This could be present and fired even through client side  
TARGET DATABASE This is the database which needs to be backed up .  
RECOVERY CATALOG Recovery catalog is optional otherwise backup details are stored in target database controlfile .  
It is a repository of information queried and updated by Recovery Manager  
It is a schema or user stored in Oracle database. One schema can support many databases  
It contains information about physical schema of target database datafile and archive log ,backup sets and pieces Recovery catalog is a must in following scenarios  
. In order to store scripts  
. For tablespace point in time recovery  
  
Media Management Software  
Media Management software is a must if you are using RMAN for storing backup in tape drive directly.  
  
Backups in RMAN  
Oracle backups in RMAN are of the following type  
RMAN complete backup OR RMAN incremental backup  
These backups are of RMAN proprietary nature  
  
IMAGE COPY  
The advantage of uing Image copy is its not in RMAN proprietary format..  
  
Backup Format  
RMAN backup is not in oracle format but in RMAN format. Oracle backup comprises of backup sets and it consists of backup pieces. Backup sets are logical entity In oracle 9i it gets stored in a default location There are two type of backup sets Datafile backup sets, Archivelog backup sets One more important point of data file backup sets is it do not include empty blocks. A backup set would contain many backup pieces.  
A single backup piece consists of physical files which are in RMAN proprietary format.  
  
Example of taking backup using RMAN  
Taking RMAN Backup  
In non archive mode in dos prompt type  
RMAN  
You get the RMAN prompt  
RMAN > Connect Target  
Connect to target database : Magic   
using target database controlfile instead of recovery catalog  
  
Lets take a simple backup of database in non archive mode  
shutdown immediate ; - - Shutdowns the database  
startup mount  
backup database ;- its start backing the database  
alter database open;  
We can fire the same command in archive log mode  
And whole of datafiles will be backed  
Backup database plus archivelog;  
  
Restoring database  
Restoring database has been made very simple in 9i .  
It is just  
Restore database..  
RMAN has become intelligent to identify which datafiles has to be restored  
and the location of backuped up file.  
  
Oracle Enhancement for RMAN in 10 G  
  
Flash Recovery Area  
Right now the price of hard disk is falling. Many dba are taking oracle database backup inside the hard disk itself since it results in lesser mean time between recoverability.  
The new parameter introduced is  
DB\_RECOVERY\_FILE\_DEST = /oracle/flash\_recovery\_area  
By configuring the RMAN RETENTION POLICY the flash recovery area will automatically delete obsolete backups and archive logs that are no longer required based on that configuration Oracle has introduced new features in incremental backup  
  
Change Tracking File  
Oracle 10g has the facility to deliver faster incrementals with the implementation of changed tracking file feature.This will results in faster backups lesser space consumption and also reduces the time needed for daily backups  
  
Incrementally Updated Backups  
Oracle database 10g Incrementally Updates Backup features merges the image copy of a datafile with RMAN incremental backup. The resulting image copy is now updated with block changes captured by incremental backups.The merging of the image copy and incremental backup is initiated with RMAN recover command. This results in faster recovery.  
  
Binary compression technique reduces backup space usage by 50-75%.  
  
With the new DURATION option for the RMAN BACKUP command, DBAs can weigh backup performance against system service level requirements. By specifying a duration, RMAN will automatically calculate the appropriate backup rate; in addition, DBAs can optionally specify whether backups should minimize time or system load.  
  
New Features in Oem to identify RMAN related backup like backup pieces, backup sets and image copy  
  
Oracle 9i New features Persistent RMAN Configuration  
A new configure command has been introduced in Oracle 9i , that lets you configure various features including automatic channels, parallelism ,backup options, etc.  
These automatic allocations and options can be overridden by commands in a RMAN command file.  
  
Controlfile Auto backups  
Through this new feature RMAN will automatically perform a controlfile auto backup. after every backup or copy command.   
  
Block Media Recovery  
If we can restore a few blocks rather than an entire file we only need few blocks.  
We even dont need to bring the data file offline.  
Syntax for it as follows  
Block Recover datafile 8 block 22;  
  
Configure Backup Optimization  
Prior to 9i whenever we backed up database using RMAN our backup also used take backup of read only table spaces which had already been backed up and also the same with archive log too.  
Now with 9i backup optimization parameter we can prevent repeat backup of read only tablespace and archive log. The command for this is as follows Configure backup optimization on  
  
Archive Log failover  
If RMAN cannot read a block in an archived log from a destination. RMAN automatically attempts to read from an alternate location this is called as archive log failover  
  
There are additional commands like  
backup database not backed up since time '31-jan-2002 14:00:00'  
Do not backup previously backed up files  
(say a previous backup failed and you want to restart from where it left off).  
Similar syntax is supported for restores  
backup device sbt backup set all Copy a disk backup to tape  
(backing up a backup  
Additionally it supports  
. Backup of server parameter file  
. Parallel operation supported  
. Extensive reporting available  
. Scripting  
. Duplex backup sets  
. Corrupt block detection  
. Backup archive logs  
  
Pitfalls of using RMAN  
Previous to version Oracle 9i backups were not that easy which means you had to allocate a channel compulsorily to take backup You had to give a run etc . The syntax was a bit complex …RMAN has now become very simple and easy to use..  
If you changed the location of backup set it is compulsory for you to register it using RMAN or while you are trying to restore backup It resulted in hanging situations  
There is no method to know whether during recovery database restore is going to fail because of missing archive log file.  
Compulsory Media Management only if using tape backup  
Incremental backups though used to consume less space used to be slower since it used to read the entire database to find the changed blocks and also They have difficult time streaming the tape device. .  
Considerable improvement has been made in 10g to optimize the algorithm to handle changed block.  
  
Observation  
Introduced in Oracle 8 it has become more powerful and simpler with newer version of Oracle 9 and 10 g.  
So if you really don't want to miss something critical please start using RMAN.

Explain UNION,MINUS,UNION ALL, INTERSECT ?INTERSECT returns all distinct rows selected by both queries.MINUS - returns all distinct rows selected by the first query but not by the second.UNION - returns all distinct rows selected by either queryUNION ALL - returns all rows selected by either query, including all duplicates.

**Should the OEM Console be displayed at all times (when there are scheduled jobs)? (for DBA)**  
When a job is submitted the agent will confirm the status of the job. When the status shows up as scheduled, you can close down the OEM console. The processing of the job is managed by the OIA (Oracle Intelligent Agent). The OIA maintains a .jou file in the agent's subdirectory. When the console is launched communication with the Agent is established and the contents of the .jou file (binary) are reported to the console job subsystem. Note that OEM will not be able to send e-mail and paging notifications when the Console is not started.

**Difference between SUBSTR and INSTR ?**   
INSTR (String1,String2(n,(m)),INSTR returns the position of the mth occurrence of the string 2 instring1. The search begins from nth position of string1.SUBSTR (String1 n,m)SUBSTR returns a character string of size m in string1, starting from nth position of string1.

**What kind of jobs can one schedule with OEM? (for DBA)**  
OEM comes with pre-defined jobs like Export, Import, run OS commands, run sql scripts, SQL\*Plus commands etc. It also gives you the flexibility of scheduling custom jobs written with the TCL language.

**What are the pre requisites ?**   
I. to modify data type of a column ? ii. to add a column with NOT NULL constraint ? To Modify the datatype of a column the column must be empty. to add a column with NOT NULL constrain, the table must be empty.

**How does one backout events and jobs during maintenance slots? (for DBA)**  
Managemnet and data collection activity can be suspended by imposing a blackout. Look at these examples:   
agentctl start blackout # Blackout the entrire agent  
agentctl stop blackout # Resume normal monitoring and management  
agentctl start blackout ORCL # Blackout database ORCL  
agentctl stop blackout ORCL # Resume normal monitoring and management  
agentctl start blackout -s jobs -d 00:20 # Blackout jobs for 20 minutes

**What are the types of SQL Statement ?**   
Data Definition Language :   
CREATE,ALTER,DROP,TRUNCATE,REVOKE,NO AUDIT & COMMIT.  
  
Data Manipulation Language:   
INSERT,UPDATE,DELETE,LOCK  
  
TABLE,EXPLAIN PLAN & SELECT.Transactional Control:  
COMMIT & ROLLBACKSession Control: ALTERSESSION & SET  
  
ROLESystem Control :  
ALTER SYSTEM.

**What is the Oracle Intelligent Agent? (for DBA)**  
The Oracle Intelligent Agent (OIA) is an autonomous process that needs to run on a remote node in the network to make the node OEM manageable. The Oracle Intelligent Agent is responsible for:   
. Discovering targets that can be managed (Database Servers, Net8 Listeners, etc.);   
. Monitoring of events registered in Enterprise Manager; and   
. Executing tasks associated with jobs submitted to Enterprise Manager.

**How does one start the Oracle Intelligent Agent? (for DBA)**  
One needs to start an OIA (Oracle Intelligent Agent) process on all machines that will to be managed via OEM.   
For OEM 9i and above:  
agentctl start agent  
agentctl stop agent  
  
For OEM 2.1 and below:  
lsnrctl dbsnmp\_start  
lsnrctl dbsnmp\_status  
  
On Windows NT, start the "OracleAgent" Service.  
If the agent doesn't want to start, ensure your environment variables are set correctly and delete the following files before trying again:  
1) In $ORACLE\_HOME/network/admin: snmp\_ro.ora and snmp\_rw.ora.  
2) Also delete ALL files in $ORACLE\_HOME/network/agent/.

**Can one write scripts to send alert messages to the console?**  
Start the OEM console and create a new event. Select option "Enable Unsolicited Event". Select test "Unsolicited Event". When entering the parameters, enter values similar to these:   
Event Name: /oracle/script/myalert  
Object: \*  
Severity: \*  
Message: \*  
One can now write the script and invoke the oemevent command to send alerts to the console. Look at this example: oemevent /oracle/script/myalert DESTINATION alert "My custom error message" where DESTINATION is the same value as entered in the "Monitored Destinations" field when you've registered the event in the OEM Console.

**Where can one get more information about TCL? (for DBA)**  
One can write custom event checking routines for OEM using the TCL (Tool Command Language) language. Check the following sites for more information about TCL:   
. The Tcl Developer Xchange - download and learn about TCL  
. OraTCL at Sourceforge - Download the OraTCL package  
. Tom Poindexter's Tcl Page - Oratcl was originally written by Tom Poindexter

**Are there any troubleshooting tips for OEM? (for DBA)**  
. Create the OEM repository with a user (which will manage the OEM) and store it in a tablespace that does not share any data with other database users. It is a bad practice to create the repository with SYS and System.   
. If you are unable to launch the console or there is a communication problem with the intelligent agent (daemon). Ensure OCX files are registered. Type the following in the DOS prompt (the current directory should be $ORACLE\_HOME\BIN:   
C:\Orawin95\Bin> RegSvr32 mmdx32.OCX  
C:\Orawin95\Bin> RegSvr32 vojt.OCX  
. If you have a problem starting the Oracle Agent   
Solution A: Backup the \*.Q files and Delete all the \*.Q Files ($Oracle\_home/network/agent folder)   
Backup and delete SNMP\_RO.ora, SNMP\_RW.ora, dbsnmp.ver and services.ora files ($Oracle\_Home/network/admin folder) Start the Oracle Agent service.   
Solution B: Your version of Intelligent Agent could be buggy. Check with Oracle for any available patches. For example, the Intelligent Agent that comes with Oracle 8.0.4 is buggy.   
Sometimes you get a Failed status for the job that was executed successfully.   
Check the log to see the results of the execution rather than relying on this status.

**What is import/export and why does one need it? (for DBA)**  
The Oracle export (EXP) and import (IMP) utilities are used to perform logical database backup and recovery. They are also used to move Oracle data from one machine, database or schema to another.   
The imp/exp utilities use an Oracle proprietary binary file format and can thus only be used between Oracle databases. One cannot export data and expect to import it into a non-Oracle database. For more information on how to load and unload data from files, read the SQL\*Loader FAQ.   
The export/import utilities are also commonly used to perform the following tasks:   
. Backup and recovery (small databases only)   
. Reorganization of data/ Eliminate database fragmentation   
. Detect database corruption. Ensure that all the data can be read.   
. Transporting tablespaces between databases   
. Etc.

**What is a display item?**   
Display items are similar to text items but store only fetched or assigned values. Operators cannot navigate to a display item or edit the value it contains.

**How does one use the import/export utilities? (for DBA)**  
Look for the "imp" and "exp" executables in your $ORACLE\_HOME/bin directory. One can run them interactively, using command line parameters, or using parameter files. Look at the imp/exp parameters before starting. These parameters can be listed by executing the following commands: "exp help=yes" or "imp help=yes".   
The following examples demonstrate how the imp/exp utilities can be used:   
exp scott/tiger file=emp.dmp log=emp.log tables=emp rows=yes indexes=no  
exp scott/tiger file=emp.dmp tables=(emp,dept)  
imp scott/tiger file=emp.dmp full=yes  
imp scott/tiger file=emp.dmp fromuser=scott touser=scott tables=dept  
exp userid=scott/tiger@orcl parfile=export.txt  
... where export.txt contains:  
BUFFER=100000  
FILE=account.dmp  
FULL=n  
OWNER=scott  
GRANTS=y  
COMPRESS=y  
NOTE: If you do not like command line utilities, you can import and export data with the "Schema Manager" GUI that ships with Oracle Enterprise Manager (OEM).

**What are the types of visual attribute settings?**   
Custom Visual attributes Default visual attributes Named Visual attributes. Window

**Can one export a subset of a table? (for DBA)**  
From Oracle8i one can use the QUERY= export parameter to selectively unload a subset of the data from a table. Look at this example:   
exp scott/tiger tables=emp query=\"where deptno=10\"

**What are the two ways to incorporate images into a oracle forms application?**   
Boilerplate Images  
Image\_items

**Can one monitor how fast a table is imported? (for DBA)**  
If you need to monitor how fast rows are imported from a running import job, try one of the following methods:  
Method 1:   
select substr(sql\_text,instr(sql\_text,'INTO "'),30) table\_name,  
rows\_processed,  
round((sysdate-to\_date(first\_load\_time,'yyyy-mm-dd hh24:mi:ss'))\*24\*60,1) minutes,  
trunc(rows\_processed/((sysdate-to\_date(first\_load\_time,'yyyy-mm-dd hh24:mi:ss'))\*24\*60)) rows\_per\_min  
from sys.v\_$sqlarea  
where sql\_text like 'INSERT %INTO "%'  
and command\_type = 2  
and open\_versions > 0;  
For this to work one needs to be on Oracle 7.3 or higher (7.2 might also be OK). If the import has more than one table, this statement will only show information about the current table being imported.   
Contributed by Osvaldo Ancarola, Bs. As. Argentina.   
Method 2:  
Use the FEEDBACK=n import parameter. This command will tell IMP to display a dot for every N rows imported.

**Can one import tables to a different tablespace? (for DBA)**  
Oracle offers no parameter to specify a different tablespace to import data into. Objects will be re-created in the tablespace they were originally exported from. One can alter this behaviour by following one of these procedures: Pre-create the table(s) in the correct tablespace:  
. Import the dump file using the INDEXFILE= option   
. Edit the indexfile. Remove remarks and specify the correct tablespaces.   
. Run this indexfile against your database, this will create the required tables in the appropriate tablespaces   
. Import the table(s) with the IGNORE=Y option.   
Change the default tablespace for the user:  
  
. Revoke the "UNLIMITED TABLESPACE" privilege from the user   
. Revoke the user's quota from the tablespace from where the object was exported. This forces the import utility to create tables in the user's default tablespace.   
. Make the tablespace to which you want to import the default tablespace for the user   
. Import the table

**What do you mean by a block in forms4.0?**   
Block is a single mechanism for grouping related items into a functional unit for storing, displaying and manipulating records.

**How is possible to restrict the user to a list of values while entering values for parameters?**   
By setting the Restrict To List property to true in the parameter property sheet.

**What is SQL\*Loader and what is it used for? (for DBA)**  
SQL\*Loader is a bulk loader utility used for moving data from external files into the Oracle database. Its syntax is similar to that of the DB2 Load utility, but comes with more options. SQL\*Loader supports various load formats, selective loading, and multi-table loads.

**How does one use the SQL\*Loader utility? (for DBA)**   
One can load data into an Oracle database by using the sqlldr (sqlload on some platforms) utility. Invoke the utility without arguments to get a list of available parameters. Look at the following example:   
sqlldr scott/tiger control=loader.ctl  
This sample control file (loader.ctl) will load an external data file containing delimited data:   
load data  
infile 'c:\data\mydata.csv'  
into table emp  
fields terminated by "," optionally enclosed by '"'   
( empno, empname, sal, deptno )  
The mydata.csv file may look like this:   
10001,"Scott Tiger", 1000, 40  
10002,"Frank Naude", 500, 20  
Another Sample control file with in-line data formatted as fix length records. The trick is to specify "\*" as the name of the data file, and use BEGINDATA to start the data section in the control file.   
load data  
infile \*  
replace  
into table departments  
( dept position (02:05) char(4),  
deptname position (08:27) char(20)  
)  
begindata  
COSC COMPUTER SCIENCE  
ENGL ENGLISH LITERATURE  
MATH MATHEMATICS  
POLY POLITICAL SCIENCE

How can a cross product be created? By selecting the cross products tool and drawing a new group surrounding the base group of the cross products.

**Is there a SQL\*Unloader to download data to a flat file? (for DBA)**  
Oracle does not supply any data unload utilities. However, you can use SQL\*Plus to select and format your data and then spool it to a file:   
set echo off newpage 0 space 0 pagesize 0 feed off head off trimspool on  
spool oradata.txt  
select col1 || ',' || col2 || ',' || col3  
from tab1  
where col2 = 'XYZ';  
spool off  
Alternatively use the UTL\_FILE PL/SQL package:   
rem Remember to update initSID.ora, utl\_file\_dir='c:\oradata' parameter  
declare  
fp utl\_file.file\_type;  
begin  
fp := utl\_file.fopen('c:\oradata','tab1.txt','w');  
utl\_file.putf(fp, '%s, %s\n', 'TextField', 55);  
utl\_file.fclose(fp);  
end;  
/  
You might also want to investigate third party tools like SQLWays from Ispirer Systems, TOAD from Quest, or ManageIT Fast Unloader from CA to help you unload data from Oracle.

**Can one load variable and fix length data records? (for DBA)**  
Yes, look at the following control file examples. In the first we will load delimited data (variable length):   
LOAD DATA  
INFILE \*  
INTO TABLE load\_delimited\_data  
FIELDS TERMINATED BY "," OPTIONALLY ENCLOSED BY '"'  
TRAILING NULLCOLS  
( data1,  
data2  
)  
BEGINDATA  
11111,AAAAAAAAAA  
22222,"A,B,C,D,"  
If you need to load positional data (fixed length), look at the following control file example:  
LOAD DATA  
INFILE \*  
INTO TABLE load\_positional\_data  
( data1 POSITION(1:5),  
data2 POSITION(6:15)  
)  
BEGINDATA  
11111AAAAAAAAAA  
22222BBBBBBBBBB  
Can one skip header records load while loading?  
Use the "SKIP n" keyword, where n = number of logical rows to skip. Look at this example:   
LOAD DATA  
INFILE \*  
INTO TABLE load\_positional\_data  
SKIP 5  
( data1 POSITION(1:5),  
data2 POSITION(6:15)  
)  
BEGINDATA  
11111AAAAAAAAAA  
22222BBBBBBBBBB

**Can one modify data as it loads into the database? (for DBA)**  
Data can be modified as it loads into the Oracle Database. Note that this only applies for the conventional load path and not for direct path loads.   
LOAD DATA  
INFILE \*  
INTO TABLE modified\_data  
( rec\_no "my\_db\_sequence.nextval",  
region CONSTANT '31',  
time\_loaded "to\_char(SYSDATE, 'HH24:MI')",  
data1 POSITION(1:5) ":data1/100",  
data2 POSITION(6:15) "upper(:data2)",  
data3 POSITION(16:22)"to\_date(:data3, 'YYMMDD')"  
)  
BEGINDATA  
11111AAAAAAAAAA991201  
22222BBBBBBBBBB990112  
LOAD DATA  
INFILE 'mail\_orders.txt'  
BADFILE 'bad\_orders.txt'  
APPEND  
INTO TABLE mailing\_list  
FIELDS TERMINATED BY ","  
( addr,  
city,  
state,  
zipcode,  
mailing\_addr "decode(:mailing\_addr, null, :addr, :mailing\_addr)",  
mailing\_city "decode(:mailing\_city, null, :city, :mailing\_city)",  
mailing\_state  
)

**Can one load data into multiple tables at once? (for DBA)**  
Look at the following control file:   
LOAD DATA  
INFILE \*  
REPLACE  
INTO TABLE emp  
WHEN empno != ' '  
( empno POSITION(1:4) INTEGER EXTERNAL,  
ename POSITION(6:15) CHAR,  
deptno POSITION(17:18) CHAR,  
mgr POSITION(20:23) INTEGER EXTERNAL  
)  
INTO TABLE proj  
WHEN projno != ' '  
( projno POSITION(25:27) INTEGER EXTERNAL,  
empno POSITION(1:4) INTEGER EXTERNAL  
)

**What is the difference between boiler plat images and image items?**   
Boiler plate Images are static images (Either vector or bit map) that you import from the file system or database to use a graphical elements in your form, such as company logos and maps. Image items are special types of interface controls that store and display either vector or bitmap images. Like other items that store values, image items can be either base table items(items that relate directly to database columns) or control items. The definition of an image item is stored as part of the form module FMB and FMX files, but no image file is actually associated with an image item until the item is populate at run time.

What are the triggers available in the reports?Before report, Before form, After form , Between page, After report.

**Why is a Where clause faster than a group filter or a format trigger?**   
Because, in a where clause the condition is applied during data retrievalthan after retrieving the data.

**Can one selectively load only the records that one need? (for DBA)**  
Look at this example, (01) is the first character, (30:37) are characters 30 to 37:   
LOAD DATA  
INFILE 'mydata.dat' BADFILE 'mydata.bad' DISCARDFILE 'mydata.dis'  
APPEND  
INTO TABLE my\_selective\_table  
WHEN (01) <> 'H' and (01) <> 'T' and (30:37) = '19991217'  
(  
region CONSTANT '31',  
service\_key POSITION(01:11) INTEGER EXTERNAL,  
call\_b\_no POSITION(12:29) CHAR  
)

**Can one skip certain columns while loading data? (for DBA)**  
One cannot use POSTION(x:y) with delimited data. Luckily, from Oracle 8i one can specify FILLER columns. FILLER columns are used to skip columns/fields in the load file, ignoring fields that one does not want. Look at this example: -- One cannot use POSTION(x:y) as it is stream data, there are no positional fields-the next field begins after some delimiter, not in column X. -->   
LOAD DATA  
TRUNCATE INTO TABLE T1  
FIELDS TERMINATED BY ','  
( field1,  
field2 FILLER,  
field3  
)

**How does one load multi-line records? (for DBA)**  
One can create one logical record from multiple physical records using one of the following two clauses:   
. CONCATENATE: - use when SQL\*Loader should combine the same number of physical records together to form one logical record.   
. CONTINUEIF - use if a condition indicates that multiple records should be treated as one. Eg. by having a '#' character in column 1.

**How can get SQL\*Loader to COMMIT only at the end of the load file? (for DBA)**  
One cannot, but by setting the ROWS= parameter to a large value, committing can be reduced. Make sure you have big rollback segments ready when you use a high value for ROWS=.

**Can one improve the performance of SQL\*Loader? (for DBA)**  
A very simple but easily overlooked hint is not to have any indexes and/or constraints (primary key) on your load tables during the load process. This will significantly slow down load times even with ROWS= set to a high value.  
Add the following option in the command line: DIRECT=TRUE. This will effectively bypass most of the RDBMS processing. However, there are cases when you can't use direct load. Refer to chapter 8 on Oracle server Utilities manual.  
Turn off database logging by specifying the UNRECOVERABLE option. This option can only be used with direct data loads. Run multiple load jobs concurrently.

**How does one use SQL\*Loader to load images, sound clips and documents? (for DBA)**  
SQL\*Loader can load data from a "primary data file", SDF (Secondary Data file - for loading nested tables and VARRAYs) or LOGFILE. The LOBFILE method provides and easy way to load documents, images and audio clips into BLOB and CLOB columns. Look at this example:   
Given the following table:   
CREATE TABLE image\_table (  
image\_id NUMBER(5),  
file\_name VARCHAR2(30),  
image\_data BLOB);  
Control File:   
LOAD DATA  
INFILE \*  
INTO TABLE image\_table  
REPLACE  
FIELDS TERMINATED BY ','  
(  
image\_id INTEGER(5),  
file\_name CHAR(30),  
image\_data LOBFILE (file\_name) TERMINATED BY EOF  
)  
BEGINDATA  
001,image1.gif  
002,image2.jpg

**What is the difference between the conventional and direct path loader? (for DBA)**  
The conventional path loader essentially loads the data by using standard INSERT statements. The direct path loader (DIRECT=TRUE) bypasses much of the logic involved with that, and loads directly into the Oracle data files. More information about the restrictions of direct path loading can be obtained from the Utilities Users Guide.

**GENERAL INTERVIEW QUESTIONS**What are the various types of Exceptions ?   
User defined and Predefined Exceptions.

**Can we define exceptions twice in same block ?**  
No.

**What is the difference between a procedure and a function ?**   
Functions return a single variable by value whereas procedures do not return any variable by value. Rather they return multiple variables by passing variables by reference through their OUT parameter.

**Can you have two functions with the same name in a PL/SQL block ?**   
Yes.

**Can you have two stored functions with the same name ?**   
Yes.

**Can you call a stored function in the constraint of a table ?**   
No.

**What are the various types of parameter modes in a procedure ?**   
IN, OUT AND INOUT.

**What is Over Loading and what are its restrictions ?**   
OverLoading means an object performing different functions depending upon the no. of parameters or the data type of the parameters passed to it.

**Can functions be overloaded ?**   
Yes.

**Can 2 functions have same name & input parameters but differ only by return datatype ?**  
No.

**What are the constructs of a procedure, function or a package ?**   
The constructs of a procedure, function or a package are :  
variables and constants   
cursors   
exceptions

**Why Create or Replace and not Drop and recreate procedures ?**   
So that Grants are not dropped.

**Can you pass parameters in packages ? How ?**   
Yes. You can pass parameters to procedures or functions in a package.

**What are the parts of a database trigger ?**   
The parts of a trigger are:   
A triggering event or statement   
A trigger restriction   
A trigger action

**What are the various types of database triggers ?**   
There are 12 types of triggers, they are combination of :  
Insert, Delete and Update Triggers.  
Before and After Triggers.  
Row and Statement Triggers.  
(3\*2\*2=12)

What is the advantage of a stored procedure over a database trigger ?We have control over the firing of a stored procedure but we have no control over the firing of a trigger.

**What is the maximum no. of statements that can be specified in a trigger statement ?**   
One.

**Can views be specified in a trigger statement ?**   
No

**What are the values of :new and :old in Insert/Delete/Update Triggers ?**   
INSERT : new = new value, old = NULL  
DELETE : new = NULL, old = old value  
UPDATE : new = new value, old = old value

**What are cascading triggers? What is the maximum no of cascading triggers at a time?**   
When a statement in a trigger body causes another trigger to be fired, the triggers are said to be cascading. Max = 32.

**What are mutating triggers ?**   
A trigger giving a SELECT on the table on which the trigger is written.

**What are constraining triggers ?**   
A trigger giving an Insert/Update on a table having referential integrity constraint on the triggering table.

**Describe Oracle database's physical and logical structure ?**   
Physical : Data files, Redo Log files, Control file.  
Logical : Tables, Views, Tablespaces, etc.

**Can you increase the size of a tablespace ? How ?**   
Yes, by adding datafiles to it.

**What is the use of Control files ?**   
Contains pointers to locations of various data files, redo log files, etc.

**What is the use of Data Dictionary ?**   
Used by Oracle to store information about various physical and logical Oracle structures e.g. Tables, Tablespaces, datafiles, etc

**What are the advantages of clusters ?**   
Access time reduced for joins.

**What are the disadvantages of clusters ?**   
The time for Insert increases.

**Can Long/Long RAW be clustered ?**   
No.

**Can null keys be entered in cluster index, normal index ?**   
Yes.

**Can Check constraint be used for self referential integrity ? How ?**   
Yes. In the CHECK condition for a column of a table, we can reference some other column of the same table and thus enforce self referential integrity.

**What are the min. extents allocated to a rollback extent ?**   
Two

**What are the states of a rollback segment ? What is the difference between partly available and needs recovery ?**   
The various states of a rollback segment are :  
ONLINE, OFFLINE, PARTLY AVAILABLE, NEEDS RECOVERY and INVALID.

**What is the difference between unique key and primary key ?**   
Unique key can be null; Primary key cannot be null.

**An insert statement followed by a create table statement followed by rollback ? Will the rows be inserted ?**   
No.

**an you define multiple savepoints ?**   
Yes.

**Can you Rollback to any savepoint ?**   
Yes.

**What is the maximum no. of columns a table can have ?**   
254.

**What is the significance of the & and && operators in PL SQL ?**   
The & operator means that the PL SQL block requires user input for a variable. The && operator means that the value of this variable should be the same as inputted by the user previously for this same variable. If a transaction is very large, and the rollback segment is not able to hold the rollback information, then will the transaction span across different rollback segments or will it terminate ? It will terminate (Please check ).

**Can you pass a parameter to a cursor ?**   
Explicit cursors can take parameters, as the example below shows. A cursor parameter can appear in a query wherever a constant can appear. CURSOR c1 (median IN NUMBER) IS SELECT job, ename FROM emp WHERE sal > median;

**What are the various types of RollBack Segments ?**   
Public Available to all instances  
Private Available to specific instance

**Can you use %RowCount as a parameter to a cursor ?**   
Yes

Is the query below allowed : **Select sal, ename Into x From emp Where ename = 'KING'  
(Where x is a record of Number(4) and Char(15))**  
Yes

Is the assignment given below allowed : **ABC = PQR (Where ABC and PQR are records)**   
Yes

Is this for loop allowed : **For x in &Start..&End Loop**   
Yes

How many rows will the following SQL return : **Select \* from emp Where rownum < 10;**   
9 rows

How many rows will the following SQL return : **Select \* from emp Where rownum = 10;**   
No rows

Which symbol preceeds the path to the table in the remote database ?  
@

**Are views automatically updated when base tables are updated ?**   
Yes

**Can a trigger written for a view ?**   
No

**If all the values from a cursor have been fetched and another fetch is issued, the output will be : error, last record or first record ?**   
Last Record

**A table has the following data : [[5, Null, 10]]. What will the average function return ?**   
7.5

**Is Sysdate a system variable or a system function?**   
System Function

**Consider a sequence whose currval is 1 and gets incremented by 1 by using the nextval reference we get the next number 2. Suppose at this point we issue an rollback and again issue a nextval. What will the output be ?**   
3

**Definition of relational DataBase by Dr. Codd (IBM)?**   
A Relational Database is a database where all data visible to the user is organized strictly as tables of data values and where all database operations work on these tables.

**What is Multi Threaded Server (MTA) ?**   
In a Single Threaded Architecture (or a dedicated server configuration) the database manager creates a separate process for each database user. But in MTA the database manager can assign multiple users (multiple user processes) to a single dispatcher (server process), a controlling process that queues request for work thus reducing the databases memory requirement and resources.

**Which are initial RDBMS, Hierarchical & N/w database ?**   
RDBMS - R system  
Hierarchical - IMS  
N/W - DBTG

**What is Functional Dependency**   
Given a relation R, attribute Y of R is functionally dependent on attribute X of R if and only if each X-value has associated with it precisely one -Y value in R

What is Auditing ?The database has the ability to audit all actions that take place within it.   
a) Login attempts, b) Object Accesss, c) Database Action Result of Greatest(1,NULL) or Least(1,NULL) NULL

**While designing in client/server what are the 2 imp. things to be considered ?**   
Network Overhead (traffic), Speed and Load of client server

**When to create indexes ?**   
To be created when table is queried for less than 2% or 4% to 25% of the table rows.

**How can you avoid indexes ?**   
TO make index access path unavailable - Use FULL hint to optimizer for full table scan - Use INDEX or AND-EQUAL hint to optimizer to use one index or set to indexes instead of another. - Use an expression in the Where Clause of the SQL.

What is the result of the following SQL : **Select 1 from dual  
UNION  
Select 'A' from dual;**  
Error

**Can database trigger written on synonym of a table and if it can be then what would be the effect if original table is accessed.**   
Yes, database trigger would fire.

**Can you alter synonym of view or view ?**   
No

**Can you create index on view ?**  
No

**What is the difference between a view and a synonym ?**   
Synonym is just a second name of table used for multiple link of database. View can be created with many tables, and with virtual columns and with conditions. But synonym can be on view.

**What is the difference between alias and synonym ?**   
Alias is temporary and used with one query. Synonym is permanent and not used as alias.

**What is the effect of synonym and table name used in same Select statement ?**   
Valid

**What's the length of SQL integer ?**   
32 bit length

**What is the difference between foreign key and reference key ?**   
Foreign key is the key i.e. attribute which refers to another table primary key. Reference key is the primary key of table referred by another table.

**Can dual table be deleted, dropped or altered or updated or inserted ?**   
Yes

**If content of dual is updated to some value computation takes place or not ?**   
Yes

**If any other table same as dual is created would it act similar to dual?**   
Yes

**For which relational operators in where clause, index is not used ?**   
<> , like '% ...' is NOT functions, field +constant, field || ''

**Assume that there are multiple databases running on one machine. How can you switch from one to another ?**   
Changing the ORACLE\_SID

**What are the advantages of Oracle ?**   
Portability : Oracle is ported to more platforms than any of its competitors, running on more than 100 hardware platforms and 20 networking protocols.  
Market Presence : Oracle is by far the largest RDBMS vendor and spends more on R & D than most of its competitors earn in total revenue. This market clout means that you are unlikely to be left in the lurch by Oracle and there are always lots of third party interfaces available.  
Backup and Recovery : Oracle provides industrial strength support for on-line backup and recovery and good software fault tolerence to disk failure. You can also do point-in-time recovery.  
Performance : Speed of a 'tuned' Oracle Database and application is quite good, even with large databases. Oracle can manage > 100GB databases.  
Multiple database support : Oracle has a superior ability to manage multiple databases within the same transaction using a two-phase commit protocol.

**What is a forward declaration ? What is its use ?**   
PL/SQL requires that you declare an identifier before using it. Therefore, you must declare a subprogram before calling it. This declaration at the start of a subprogram is called forward declaration. A forward declaration consists of a subprogram specification terminated by a semicolon.

**What are actual and formal parameters ?**   
Actual Parameters : Subprograms pass information using parameters. The variables or expressions referenced in the parameter list of a subprogram call are actual parameters. For example, the following procedure call lists two actual parameters named emp\_num and amount:  
Eg. raise\_salary(emp\_num, amount);  
Formal Parameters : The variables declared in a subprogram specification and referenced in the subprogram body are formal parameters. For example, the following procedure declares two formal parameters named emp\_id and increase: Eg. PROCEDURE raise\_salary (emp\_id INTEGER, increase REAL) IS current\_salary REAL;

**What are the types of Notation ?**   
Position, Named, Mixed and Restrictions.

**What all important parameters of the init.ora are supposed to be increased if you want to increase the SGA size ?**   
In our case, db\_block\_buffers was changed from 60 to 1000 (std values are 60, 550 & 3500) shared\_pool\_size was changed from 3.5MB to 9MB (std values are 3.5, 5 & 9MB) open\_cursors was changed from 200 to 300 (std values are 200 & 300) db\_block\_size was changed from 2048 (2K) to 4096 (4K) {at the time of database creation}.  
The initial SGA was around 4MB when the server RAM was 32MB and The new SGA was around 13MB when the server RAM was increased to 128MB.

**If I have an execute privilege on a procedure in another users schema, can I execute his procedure even though I do not have privileges on the tables within the procedure ?**   
Yes

**What are various types of joins ?**   
Equijoins, Non-equijoins, self join, outer join

**What is a package cursor ?**   
A package cursor is a cursor which you declare in the package specification without an SQL statement. The SQL statement for the cursor is attached dynamically at runtime from calling procedures.

If you insert a row in a table, then create another table and then say Rollback. In this case will the row be inserted ? Yes. Because Create table is a DDL which commits automatically as soon as it is executed. The DDL commits the transaction even if the create statement fails internally (eg table already exists error) and not syntactically.

**What are the various types of queries ??**   
Normal Queries  
Sub Queries  
Co-related queries  
Nested queries  
Compound queries

**What is a transaction ?**   
A transaction is a set of SQL statements between any two COMMIT and ROLLBACK statements.

**What is implicit cursor and how is it used by Oracle ?**   
An implicit cursor is a cursor which is internally created by Oracle. It is created by Oracle for each individual SQL.

**Which of the following is not a schema object : Indexes, tables, public synonyms, triggers and packages ?**   
Public synonyms

**What is PL/SQL?**   
PL/SQL is Oracle's Procedural Language extension to SQL. The language includes object oriented programming techniques such as encapsulation, function overloading, information hiding (all but inheritance), and so, brings state-of-the-art programming to the Oracle database server and a variety of Oracle tools.

**Is there a PL/SQL Engine in SQL\*Plus?**   
No. Unlike Oracle Forms, SQL\*Plus does not have a PL/SQL engine. Thus, all your PL/SQL are send directly to the database engine for execution. This makes it much more efficient as SQL statements are not stripped off and send to the database individually.

**Is there a limit on the size of a PL/SQL block?**   
Currently, the maximum parsed/compiled size of a PL/SQL block is 64K and the maximum code size is 100K. You can run the following select statement to query the size of an existing package or procedure.  
SQL> select \* from dba\_object\_size where name = 'procedure\_name'

**Can one read/write files from PL/SQL?**   
Included in Oracle 7.3 is a UTL\_FILE package that can read and write files. The directory you intend writing to has to be in your INIT.ORA file (see UTL\_FILE\_DIR=... parameter). Before Oracle 7.3 the only means of writing a file was to use DBMS\_OUTPUT with the SQL\*Plus SPOOL command.  
DECLARE  
fileHandler UTL\_FILE.FILE\_TYPE;  
BEGIN  
fileHandler := UTL\_FILE.FOPEN('/home/oracle/tmp', 'myoutput','W');  
UTL\_FILE.PUTF(fileHandler, 'Value of func1 is %sn', func1(1));  
UTL\_FILE.FCLOSE(fileHandler);  
END;

**How can I protect my PL/SQL source code?**   
PL/SQL V2.2, available with Oracle7.2, implements a binary wrapper for PL/SQL programs to protect the source code. This is done via a standalone utility that transforms the PL/SQL source code into portable binary object code (somewhat larger than the original). This way you can distribute software without having to worry about exposing your proprietary algorithms and methods. SQL\*Plus and SQL\*DBA will still understand and know how to execute such scripts. Just be careful, there is no "decode" command available.  
The syntax is:   
wrap iname=myscript.sql oname=xxxx.yyy

**Can one use dynamic SQL within PL/SQL? OR Can you use a DDL in a procedure ? How ?**   
From PL/SQL V2.1 one can use the DBMS\_SQL package to execute dynamic SQL statements.   
Eg: CREATE OR REPLACE PROCEDURE DYNSQL  
AS  
cur integer;  
rc integer;  
BEGIN  
cur := DBMS\_SQL.OPEN\_CURSOR;  
DBMS\_SQL.PARSE(cur,'CREATE TABLE X (Y DATE)', DBMS\_SQL.NATIVE);  
rc := DBMS\_SQL.EXECUTE(cur);  
DBMS\_SQL.CLOSE\_CURSOR(cur);  
END;

<http://techpreparation.com/oracle-interview-questions-answers1.htm>

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***PL/SQL Questions:***  **1. Describe the difference between a procedure, function and anonymous pl/sql block.**  **Level: Low**  **Expected answer : Candidate should mention use of DECLARE statement, a function must return a value while a procedure doesn?t have to.**  **2. What is a mutating table error and how can you get around it?**  **Level: Intermediate**  **Expected answer: This happens with triggers. It occurs because the trigger is trying to update a row it is currently using. The usual fix involves either use of views or temporary tables so the database is selecting from one while updating the other.**  **3. Describe the use of %ROWTYPE and %TYPE in PL/SQL**  **Level: Low**  **Expected answer: %ROWTYPE allows you to associate a variable with an entire table row. The %TYPE associates a variable with a single column type.**  **4. What packages (if any) has Oracle provided for use by developers?**  **Level: Intermediate to high**  **Expected answer: Oracle provides the DBMS\_ series of packages. There are many which developers should be aware of such as DBMS\_SQL, DBMS\_PIPE, DBMS\_TRANSACTION, DBMS\_LOCK, DBMS\_ALERT, DBMS\_OUTPUT, DBMS\_JOB, DBMS\_UTILITY, DBMS\_DDL, UTL\_FILE. If they can mention a few of these and describe how they used them, even better. If they include the SQL routines provided by Oracle, great, but not really what was asked.**  **5. Describe the use of PL/SQL tables**  **Level: Intermediate**  **Expected answer: PL/SQL tables are scalar arrays that can be referenced by a binary integer. They can be used to hold values for use in later queries or calculations. In Oracle 8 they will be able to be of the %ROWTYPE designation, or RECORD.**  **6. When is a declare statement needed ?**  **Level: Low**  **The DECLARE statement is used in PL/SQL anonymous blocks such as with stand alone, non-stored PL/SQL procedures. It must come first in a PL/SQL stand alone file if it is used.**  **7. In what order should a open/fetch/loop set of commands in a PL/SQL block be implemented if you use the %NOTFOUND cursor variable in the exit when statement? Why?**  **Level: Intermediate**  **Expected answer: OPEN then FETCH then LOOP followed by the exit when. If not specified in this order will result in the final return being done twice because of the way the %NOTFOUND is handled by PL/SQL.**  **8. What are SQLCODE and SQLERRM and why are they important for PL/SQL developers?**  **Level: Intermediate**  **Expected answer: SQLCODE returns the value of the error number for the last error encountered. The SQLERRM returns the actual error message for the last error encountered. They can be used in exception handling to report, or, store in an error log table, the error that occurred in the code. These are especially useful for the WHEN OTHERS exception.**  **9. How can you find within a PL/SQL block, if a cursor is open?**  **Level: Low**  **Expected answer: Use the %ISOPEN cursor status variable.**  **10. How can you generate debugging output from PL/SQL?**  **Level:Intermediate to high**  **Expected answer: Use the DBMS\_OUTPUT package. Another possible method is to just use the SHOW ERROR command, but this only shows errors. The DBMS\_OUTPUT package can be used to show intermediate results from loops and the status of variables as the procedure is executed. The new package UTL\_FILE can also be used.**  **11. What are the types of triggers?**  **Level:Intermediate to high**  **Expected Answer: There are 12 types of triggers in PL/SQL that consist of combinations of the BEFORE, AFTER, ROW, TABLE, INSERT, UPDATE, DELETE and ALL key words:**  **BEFORE ALL ROW INSERT**  **AFTER ALL ROW INSERT**  **BEFORE INSERT**  **AFTER INSERT etc.**  **DBA:**  **1. Give one method for transferring a table from one schema to another:**  **Level:Intermediate**  **Expected Answer: There are several possible methods, export-import, CREATE TABLE... AS SELECT, or COPY.**  **2. What is the purpose of the IMPORT option IGNORE? What is it?s default setting?**  **Level: Low**  **Expected Answer: The IMPORT IGNORE option tells import to ignore "already exists" errors. If it is not specified the tables that already exist will be skipped. If it is specified, the error is ignored and the tables data will be inserted. The default value is N.**  **3. You have a rollback segment in a version 7.2 database that has expanded beyond optimal, how can it be restored to optimal?**  **Level: Low**  **Expected answer: Use the ALTER TABLESPACE ..... SHRINK command.**  **4. If the DEFAULT and TEMPORARY tablespace clauses are left out of a CREATE USER command what happens? Is this bad or good? Why?**  **Level: Low**  **Expected answer: The user is assigned the SYSTEM tablespace as a default and temporary tablespace. This is bad because it causes user objects and temporary segments to be placed into the SYSTEM tablespace resulting in fragmentation and improper table placement (only data dictionary objects and the system rollback segment should be in SYSTEM).**  **5. What are some of the Oracle provided packages that DBAs should be aware of?**  **Level: Intermediate to High**  **Expected answer: Oracle provides a number of packages in the form of the DBMS\_ packages owned by the SYS user. The packages used by DBAs may include: DBMS\_SHARED\_POOL, DBMS\_UTILITY, DBMS\_SQL, DBMS\_DDL, DBMS\_SESSION, DBMS\_OUTPUT and DBMS\_SNAPSHOT. They may also try to answer with the UTL\*.SQL or CAT\*.SQL series of SQL procedures. These can be viewed as extra credit but aren?t part of the answer.**  **6. What happens if the constraint name is left out of a constraint clause?**  **Level: Low**  **Expected answer: The Oracle system will use the default name of SYS\_Cxxxx where xxxx is a system generated number. This is bad since it makes tracking which table the constraint belongs to or what the constraint does harder.**  **7. What happens if a tablespace clause is left off of a primary key constraint clause?**  **Level: Low**  **Expected answer: This results in the index that is automatically generated being placed in then users default tablespace. Since this will usually be the same tablespace as the table is being created in, this can cause serious performance problems.**  **8. What is the proper method for disabling and re-enabling a primary key constraint?**  **Level: Intermediate**  **Expected answer: You use the ALTER TABLE command for both. However, for the enable clause you must specify the USING INDEX and TABLESPACE clause for primary keys.**  **9. What happens if a primary key constraint is disabled and then enabled without fully specifying the index clause?**  **Level: Intermediate**  **Expected answer: The index is created in the user?s default tablespace and all sizing information is lost. Oracle doesn?t store this information as a part of the constraint definition, but only as part of the index definition, when the constraint was disabled the index was dropped and the information is gone.**  **10. (On UNIX) When should more than one DB writer process be used? How many should be used?**  **Level: High**  **Expected answer: If the UNIX system being used is capable of asynchronous IO then only one is required, if the system is not capable of asynchronous IO then up to twice the number of disks used by Oracle number of DB writers should be specified by use of the db\_writers initialization parameter.**  **11. You are using hot backup without being in archivelog mode, can you recover in the event of a failure? Why or why not?**  **Level: High**  **Expected answer: You can?t use hot backup without being in archivelog mode. So no, you couldn?t recover.**  **12. What causes the "snapshot too old" error? How can this be prevented or mitigated?**  **Level: Intermediate**  **Expected answer: This is caused by large or long running transactions that have either wrapped onto their own rollback space or have had another transaction write on part of their rollback space. This can be prevented or mitigated by breaking the transaction into a set of smaller transactions or increasing the size of the rollback segments and their extents.**  **13. How can you tell if a database object is invalid?**  **Level: Low**  **Expected answer: By checking the status column of the DBA\_, ALL\_ or USER\_OBJECTS views, depending upon whether you own or only have permission on the view or are using a DBA account.**  **14. A user is getting an ORA-00942 error yet you know you have granted them permission on the table, what else should you check?**  **Level: Low**  **Expected answer: You need to check that the user has specified the full name of the object (select empid from scott.emp; instead of select empid from emp;) or has a synonym that points to the object (create synonym emp for scott.emp;)**  **15. A developer is trying to create a view and the database won?t let him. He has the "DEVELOPER" role which has the "CREATE VIEW" system privilege and SELECT grants on the tables he is using, what is the problem?**  **Level: Intermediate**  **Expected answer: You need to verify the developer has direct grants on all tables used in the view. You can?t create a stored object with grants given through views.**  **16. If you have an example table, what is the best way to get sizing data for the production table implementation?**  **Level: Intermediate**  **Expected answer: The best way is to analyze the table and then use the data provided in the DBA\_TABLES view to get the average row length and other pertinent data for the calculation. The quick and dirty way is to look at the number of blocks the table is actually using and ratio the number of rows in the table to its number of blocks against the number of expected rows.**  **17. How can you find out how many users are currently logged into the database? How can you find their operating system id?**  **Level: high**  **Expected answer: There are several ways. One is to look at the v$session or v$process views. Another way is to check the current\_logins parameter in the v$sysstat view. Another if you are on UNIX is to do a "ps -ef|grep oracle|wc -l? command, but this only works against a single instance installation.**  **18. A user selects from a sequence and gets back two values, his select is:**  **SELECT pk\_seq.nextval FROM dual;**  **What is the problem?**  **Level: Intermediate**  **Expected answer: Somehow two values have been inserted into the dual table. This table is a single row, single column table that should only have one value in it.**  **19. How can you determine if an index needs to be dropped and rebuilt?**  **Level: Intermediate**  **Expected answer: Run the ANALYZE INDEX command on the index to validate its structure and then calculate the ratio of LF\_BLK\_LEN/LF\_BLK\_LEN+BR\_BLK\_LEN and if it isn?t near 1.0 (i.e. greater than 0.7 or so) then the index should be rebuilt. Or if the ratio**  **BR\_BLK\_LEN/ LF\_BLK\_LEN+BR\_BLK\_LEN is nearing 0.3.**  ***SQL/ SQLPlus***  **1. How can variables be passed to a SQL routine?**  **Level: Low**  **Expected answer: By use of the & symbol. For passing in variables the numbers 1-8 can be used (&1, &2,...,&8) to pass the values after the command into the SQLPLUS session. To be prompted for a specific variable, place the ampersanded variable in the code itself:**  **"select \* from dba\_tables where owner=&owner\_name;" . Use of double ampersands tells SQLPLUS to resubstitute the value for each subsequent use of the variable, a single ampersand will cause a reprompt for the value unless an ACCEPT statement is used to get the value from the user.**  **2. You want to include a carriage return/linefeed in your output from a SQL script, how can you do this?**  **Level: Intermediate to high**  **Expected answer: The best method is to use the CHR() function (CHR(10) is a return/linefeed) and the concatenation function "||". Another method, although it is hard to document and isn?t always portable is to use the return/linefeed as a part of a quoted string.**  **3. How can you call a PL/SQL procedure from SQL?**  **Level: Intermediate**  **Expected answer: By use of the EXECUTE (short form EXEC) command.**  **4. How do you execute a host operating system command from within SQL?**  **Level: Low**  **Expected answer: By use of the exclamation point "!" (in UNIX and some other OS) or the HOST (HO) command.**  **5. You want to use SQL to build SQL, what is this called and give an example**  **Level: Intermediate to high**  **Expected answer: This is called dynamic SQL. An example would be:**  **set lines 90 pages 0 termout off feedback off verify off**  **spool drop\_all.sql**  **select ?drop user ?||username||? cascade;? from dba\_users**  **where username not in ("SYS?,?SYSTEM?);**  **spool off**  **Essentially you are looking to see that they know to include a command (in this case DROP USER...CASCADE;) and that you need to concatenate using the ?||? the values selected from the database.**  **6. What SQLPlus command is used to format output from a select?**  **Level: low**  **Expected answer: This is best done with the COLUMN command.**  **7. You want to group the following set of select returns, what can you group on?**  **Max(sum\_of\_cost), min(sum\_of\_cost), count(item\_no), item\_no**  **Level: Intermediate**  **Expected answer: The only column that can be grouped on is the "item\_no" column, the rest have aggregate functions associated with them.**  **8. What special Oracle feature allows you to specify how the cost based system treats a SQL statement?**  **Level: Intermediate to high**  **Expected answer: The COST based system allows the use of HINTs to control the optimizer path selection. If they can give some example hints such as FIRST ROWS, ALL ROWS, USING INDEX, STAR, even better.**  **9. You want to determine the location of identical rows in a table before attempting to place a unique index on the table, how can this be done?**  **Level: High**  **Expected answer: Oracle tables always have one guaranteed unique column, the rowid column. If you use a min/max function against your rowid and then select against the proposed primary key you can squeeze out the rowids of the duplicate rows pretty quick. For example:**  **select rowid from emp e**  **where e.rowid > (select min(x.rowid)**  **from emp x**  **where x.emp\_no = e.emp\_no);**  **In the situation where multiple columns make up the proposed key, they must all be used in the where clause.**  **10. What is a Cartesian product?**  **Level: Low**  **Expected answer: A Cartesian product is the result of an unrestricted join of two or more tables. The result set of a three table Cartesian product will have x \* y \* z number of rows where x, y, z correspond to the number of rows in each table involved in the join.**  **11. You are joining a local and a remote table, the network manager complains about the traffic involved, how can you reduce the network traffic?**  **Level: High**  **Expected answer: Push the processing of the remote data to the remote instance by using a view to pre-select the information for the join. This will result in only the data required for the join being sent across.**  **12. What is the default ordering of an ORDER BY clause in a SELECT statement?**  **Level: Low**  **Expected answer: Ascending**  **13. What is tkprof and how is it used?**  **Level: Intermediate to high**  **Expected answer: The tkprof tool is a tuning tool used to determine cpu and execution times for SQL statements. You use it by first setting timed\_statistics to true in the initialization file and then turning on tracing for either the entire database via the sql\_trace parameter or for the session using the ALTER SESSION command. Once the trace file is generated you run the tkprof tool against the trace file and then look at the output from the tkprof tool. This can also be used to generate explain plan output.**  **14. What is explain plan and how is it used?**  **Level: Intermediate to high**  **Expected answer: The EXPLAIN PLAN command is a tool to tune SQL statements. To use it you must have an explain\_table generated in the user you are running the explain plan for. This is created using the utlxplan.sql script. Once the explain plan table exists you run the explain plan command giving as its argument the SQL statement to be explained. The explain\_plan table is then queried to see the execution plan of the statement. Explain plans can also be run using tkprof.**  **15. How do you set the number of lines on a page of output? The width?**  **Level: Low**  **Expected answer: The SET command in SQLPLUS is used to control the number of lines generated per page and the width of those lines, for example SET PAGESIZE 60 LINESIZE 80 will generate reports that are 60 lines long with a line width of 80 characters. The PAGESIZE and LINESIZE options can be shortened to PAGES and LINES.**  **16. How do you prevent output from coming to the screen?**  **Level: Low**  **Expected answer: The SET option TERMOUT controls output to the screen. Setting TERMOUT OFF turns off screen output. This option can be shortened to TERM.**  **17. How do you prevent Oracle from giving you informational messages during and after a SQL statement execution?**  **Level: Low**  **Expected answer: The SET options FEEDBACK and VERIFY can be set to OFF.**  **18. How do you generate file output from SQL?**  **Level: Low**  **Expected answer: By use of the SPOOL command**  ***Tuning Questions:***  **1. A tablespace has a table with 30 extents in it. Is this bad? Why or why not.**  **Level: Intermediate**  **Expected answer: Multiple extents in and of themselves aren?t bad. However if you also have chained rows this can hurt performance.**  **2. How do you set up tablespaces during an Oracle installation?**  **Level: Low**  **Expected answer: You should always attempt to use the Oracle Flexible Architecture standard or another partitioning scheme to ensure proper separation of SYSTEM, ROLLBACK, REDO LOG, DATA, TEMPORARY and INDEX segments.**  **3. You see multiple fragments in the SYSTEM tablespace, what should you check first?**  **Level: Low**  **Expected answer: Ensure that users don?t have the SYSTEM tablespace as their TEMPORARY or DEFAULT tablespace assignment by checking the DBA\_USERS view.**  **4. What are some indications that you need to increase the SHARED\_POOL\_SIZE parameter?**  **Level: Intermediate**  **Expected answer: Poor data dictionary or library cache hit ratios, getting error ORA-04031. Another indication is steadily decreasing performance with all other tuning parameters the same.**  **5. What is the general guideline for sizing db\_block\_size and db\_multi\_block\_read for an application that does many full table scans?**  **Level: High**  **Expected answer: Oracle almost always reads in 64k chunks. The two should have a product equal to 64 or a multiple of 64.**  **6. What is the fastest query method for a table?**  **Level: Intermediate**  **Expected answer: Fetch by rowid**  **7. Explain the use of TKPROF? What initialization parameter should be turned on to get full TKPROF output?**  **Level: High**  **Expected answer: The tkprof tool is a tuning tool used to determine cpu and execution times for SQL statements. You use it by first setting timed\_statistics to true in the initialization file and then turning on tracing for either the entire database via the sql\_trace parameter or for the session using the ALTER SESSION command. Once the trace file is generated you run the tkprof tool against the trace file and then look at the output from the tkprof tool. This can also be used to generate explain plan output.**  **8. When looking at v$sysstat you see that sorts (disk) is high. Is this bad or good? If bad -How do you correct it?**  **Level: Intermediate**  **Expected answer: If you get excessive disk sorts this is bad. This indicates you need to tune the sort area parameters in the initialization files. The major sort are parameter is the SORT\_AREA\_SIZe parameter.**  **9. When should you increase copy latches? What parameters control copy latches?**  **Level: high**  **Expected answer: When you get excessive contention for the copy latches as shown by the "redo copy" latch hit ratio. You can increase copy latches via the initialization parameter LOG\_SIMULTANEOUS\_COPIES to twice the number of CPUs on your system.**  **10. Where can you get a list of all initialization parameters for your instance? How about an indication if they are default settings or have been changed?**  **Level: Low**  **Expected answer: You can look in the init.ora file for an indication of manually set parameters. For all parameters, their value and whether or not the current value is the default value, look in the v$parameter view.**  **11. Describe hit ratio as it pertains to the database buffers. What is the difference between instantaneous and cumulative hit ratio and which should be used for tuning?**  **Level: Intermediate**  **Expected answer: The hit ratio is a measure of how many times the database was able to read a value from the buffers verses how many times it had to re-read a data value from the disks. A value greater than 80-90% is good, less could indicate problems. If you simply take the ratio of existing parameters this will be a cumulative value since the database started. If you do a comparison between pairs of readings based on some arbitrary time span, this is the instantaneous ratio for that time span. Generally speaking an instantaneous reading gives more valuable data since it will tell you what your instance is doing for the time it was generated over.**  **12. Discuss row chaining, how does it happen? How can you reduce it? How do you correct it?**  **Level: high**  **Expected answer: Row chaining occurs when a VARCHAR2 value is updated and the length of the new value is longer than the old value and won?t fit in the remaining block space. This results in the row chaining to another block. It can be reduced by setting the storage parameters on the table to appropriate values. It can be corrected by export and import of the effected table.**  **13. When looking at the estat events report you see that you are getting busy buffer waits. Is this bad? How can you find what is causing it?**  **Level: high**  **Expected answer: Buffer busy waits could indicate contention in redo, rollback or data blocks. You need to check the v$waitstat view to see what areas are causing the problem. The value of the "count" column tells where the problem is, the "class" column tells you with what. UNDO is rollback segments, DATA is data base buffers.**  **14. If you see contention for library caches how can you fix it?**  **Level: Intermediate**  **Expected answer: Increase the size of the shared pool.**  **15. If you see statistics that deal with "undo" what are they really talking about?**  **Level: Intermediate**  **Expected answer: Rollback segments and associated structures.**  **16. If a tablespace has a default pctincrease of zero what will this cause (in relationship to the smon process)?**  **Level: High**  **Expected answer: The SMON process won?t automatically coalesce its free space fragments.**  **17. If a tablespace shows excessive fragmentation what are some methods to defragment the tablespace? (7.1,7.2 and 7.3 only)**  **Level: High**  **Expected answer: In Oracle 7.0 to 7.2 The use of the 'alter session set events 'immediate trace name coalesce level ts#';? command is the easiest way to defragment contiguous free space fragmentation. The ts# parameter corresponds to the ts# value found in the ts$ SYS table. In version 7.3 the ?alter tablespace coalesce;? is best. If the free space isn?t contiguous then export, drop and import of the tablespace contents may be the only way to reclaim non-contiguous free space.**  **18. How can you tell if a tablespace has excessive fragmentation?**  **Level: Intermediate**  **If a select against the dba\_free\_space table shows that the count of a tablespaces extents is greater than the count of its data files, then it is fragmented.**  **19. You see the following on a status report:**  **redo log space requests 23**  **redo log space wait time 0**  **Is this something to worry about? What if redo log space wait time is high? How can you fix this?**  **Level: Intermediate**  **Expected answer: Since the wait time is zero, no. If the wait time was high it might indicate a need for more or larger redo logs.**  **20. What can cause a high value for recursive calls? How can this be fixed?**  **Level: High**  **Expected answer: A high value for recursive calls is cause by improper cursor usage, excessive dynamic space management actions, and or excessive statement re-parses. You need to determine the cause and correct it By either relinking applications to hold cursors, use proper space management techniques (proper storage and sizing) or ensure repeat queries are placed in packages for proper reuse.**  **21. If you see a pin hit ratio of less than 0.8 in the estat library cache report is this a problem? If so, how do you fix it?**  **Level: Intermediate**  **Expected answer: This indicate that the shared pool may be too small. Increase the shared pool size.**  **22. If you see the value for reloads is high in the estat library cache report is this a matter for concern?**  **Level: Intermediate**  **Expected answer: Yes, you should strive for zero reloads if possible. If you see excessive reloads then increase the size of the shared pool.**  **23. You look at the dba\_rollback\_segs view and see that there is a large number of shrinks and they are of relatively small size, is this a problem? How can it be fixed if it is a problem?**  **Level: High**  **Expected answer: A large number of small shrinks indicates a need to increase the size of the rollback segment extents. Ideally you should have no shrinks or a small number of large shrinks. To fix this just increase the size of the extents and adjust optimal accordingly.**  **24. You look at the dba\_rollback\_segs view and see that you have a large number of wraps is this a problem?**  **Level: High**  **Expected answer: A large number of wraps indicates that your extent size for your rollback segments are probably too small. Increase the size of your extents to reduce the number of wraps. You can look at the average transaction size in the same view to get the information on transaction size.**  **25. In a system with an average of 40 concurrent users you get the following from a query on rollback extents:**  **ROLLBACK CUR EXTENTS**  **--------------------- --------------------------**  **R01 11**  **R02 8**  **R03 12**  **R04 9**  **SYSTEM 4**  **You have room for each to grow by 20 more extents each. Is there a problem? Should you take any action?**  **Level: Intermediate**  **Expected answer: No there is not a problem. You have 40 extents showing and an average of 40 concurrent users. Since there is plenty of room to grow no action is needed.**  **26. You see multiple extents in the temporary tablespace. Is this a problem?**  **Level: Intermediate**  **Expected answer: As long as they are all the same size this isn?t a problem. In fact, it can even improve performance since Oracle won?t have to create a new extent when a user needs one.**  ***Installation/Configuration***  **1. Define OFA.**  **Level: Low**  **Expected answer: OFA stands for Optimal Flexible Architecture. It is a method of placing directories and files in an Oracle system so that you get the maximum flexibility for future tuning and file placement.**  **2. How do you set up your tablespace on installation?**  **Level: Low**  **Expected answer: The answer here should show an understanding of separation of redo and rollback, data and indexes and isolation os SYSTEM tables from other tables. An example would be to specify that at least 7 disks should be used for an Oracle installation so that you can place SYSTEM tablespace on one, redo logs on two (mirrored redo logs) the TEMPORARY tablespace on another, ROLLBACK tablespace on another and still have two for DATA and INDEXES. They should indicate how they will handle archive logs and exports as well. As long as they have a logical plan for combining or further separation more or less disks can be specified.**  **3. What should be done prior to installing Oracle (for the OS and the disks)?**  **Level: Low**  **Expected Answer: adjust kernel parameters or OS tuning parameters in accordance with installation guide. Be sure enough contiguous disk space is available.**  **4. You have installed Oracle and you are now setting up the actual instance. You have been waiting an hour for the initialization script to finish, what should you check first to determine if there is a problem?**  **Level: Intermediate to high**  **Expected Answer: Check to make sure that the archiver isn?t stuck. If archive logging is turned on during install a large number of logs will be created. This can fill up your archive log destination causing Oracle to stop to wait for more space.**  **5. When configuring SQLNET on the server what files must be set up?**  **Level: Intermediate**  **Expected answer: INITIALIZATION file, TNSNAMES.ORA file, SQLNET.ORA file**  **6. When configuring SQLNET on the client what files need to be set up?**  **Level: Intermediate**  **Expected answer: SQLNET.ORA, TNSNAMES.ORA**  **7. What must be installed with ODBC on the client in order for it to work with Oracle?**  **Level: Intermediate**  **Expected answer: SQLNET and PROTOCOL (for example: TCPIP adapter) layers of the transport programs.**  **8. You have just started a new instance with a large SGA on a busy existing server. Performance is terrible, what should you check for?**  **Level: Intermediate**  **Expected answer: The first thing to check with a large SGA is that it isn?t being swapped out.**  **9. What OS user should be used for the first part of an Oracle installation (on UNIX)?**  **Level: low**  **Expected answer: You must use root first.**  **10. When should the default values for Oracle initialization parameters be used as is?**  **Level: Low**  **Expected answer: Never**  **11. How many control files should you have? Where should they be located?**  **Level: Low**  **Expected answer: At least 2 on separate disk spindles. Be sure they say on separate disks, not just file systems.**  **12. How many redo logs should you have and how should they be configured for maximum recoverability?**  **Level: Intermediate**  **Expected answer: You should have at least three groups of two redo logs with the two logs each on a separate disk spindle (mirrored by Oracle). The redo logs should not be on raw devices on UNIX if it can be avoided.**  **13. You have a simple application with no "hot" tables (i.e. uniform IO and access requirements). How many disks should you have assuming standard layout for SYSTEM, USER, TEMP and ROLLBACK tablespaces?**  **Expected answer: At least 7, see disk configuration answer above.**  ***Data Modeler:***  **1. Describe third normal form?**  **Level: Low**  **Expected answer: Something like: In third normal form all attributes in an entity are related to the primary key and only to the primary key**  **2. Is the following statement true or false:**  **"All relational databases must be in third normal form"**  **Why or why not?**  **Level: Intermediate**  **Expected answer: False. While 3NF is good for logical design most databases, if they have more than just a few tables, will not perform well using full 3NF. Usually some entities will be denormalized in the logical to physical transfer process.**  **3. What is an ERD?**  **Level: Low**  **Expected answer: An ERD is an Entity-Relationship-Diagram. It is used to show the entities and relationships for a database logical model.**  **4. Why are recursive relationships bad? How do you resolve them?**  **Level: Intermediate**  **A recursive relationship (one where a table relates to itself) is bad when it is a hard relationship (i.e. neither side is a "may" both are "must") as this can result in it not being possible to put in a top or perhaps a bottom of the table (for example in the EMPLOYEE table you couldn?t put in the PRESIDENT of the company because he has no boss, or the junior janitor because he has no subordinates). These type of relationships are usually resolved by adding a small intersection entity.**  **5. What does a hard one-to-one relationship mean (one where the relationship on both ends is "must")?**  **Level: Low to intermediate**  **Expected answer: This means the two entities should probably be made into one entity.**  **6. How should a many-to-many relationship be handled?**  **Level: Intermediate**  **Expected answer: By adding an intersection entity table**  **7. What is an artificial (derived) primary key? When should an artificial (or derived) primary key be used?**  **Level: Intermediate**  **Expected answer: A derived key comes from a sequence. Usually it is used when a concatenated key becomes too cumbersome to use as a foreign key.**  **8. When should you consider denormalization?**  **Level: Intermediate**  **Expected answer: Whenever performance analysis indicates it would be beneficial to do so without compromising data integrity.**  ***UNIX:***  **1. How can you determine the space left in a file system?**  **Level: Low**  **Expected answer: There are several commands to do this: du, df, or bdf**  **2. How can you determine the number of SQLNET users logged in to the UNIX system?**  **Level: Intermediate**  **Expected answer: SQLNET users will show up with a process unique name that begins with oracle, if you do a ps -ef|grep oracle|wc -l you can get a count of the number of users.**  **3. What command is used to type files to the screen?**  **Level: Low**  **Expected answer: cat, more, pg**  **4. What command is used to remove a file?**  **Level: Low**  **Expected answer: rm**  **5. Can you remove an open file under UNIX?**  **Level: Low**  **Expected answer: yes**  **6. How do you create a decision tree in a shell script?**  **Level: intermediate**  **Expected answer: depending on shell, usually a case-esac or an if-endif or fi structure**  **7. What is the purpose of the grep command?**  **Level: Low**  **Expected answer: grep is a string search command that parses the specified string from the specified file or files**  **8. The system has a program that always includes the word nocomp in its name, how can you determine the number of processes that are using this program?**  **Level: intermediate**  **Expected answer: ps -ef|grep \*nocomp\*|wc -l**  **9. What is an inode?**  **Level: Intermediate**  **Expected answer: an inode is a file status indicator. It is stored in both disk and memory and tracts file status. There is one inode for each file on the system.**  **10. The system administrator tells you that the system hasn?t been rebooted in 6 months, should he be proud of this?**  **Level: High**  **Expected answer: Maybe. Some UNIX systems don?t clean up well after themselves. Inode problems and dead user processes can accumulate causing possible performance and corruption problems. Most UNIX systems should have a scheduled periodic reboot so file systems can be checked and cleaned and dead or zombie processes cleared out.**  **11. What is redirection and how is it used?**  **Level: Intermediate**  **Expected answer: redirection is the process by which input or output to or from a process is redirected to another process. This can be done using the pipe symbol "|", the greater than symbol ">" or the "tee" command. This is one of the strengths of UNIX allowing the output from one command to be redirected directly into the input of another command.**  **12. How can you find dead processes?**  **Level: Intermediate**  **Expected answer: ps -ef|grep zombie -- or -- who -d depending on the system.**  **13. How can you find all the processes on your system?**  **Level: Low**  **Expected answer: Use the ps command**  **14. How can you find your id on a system?**  **Level: Low**  **Expected answer: Use the "who am i" command.**  **15. What is the finger command?**  **Level: Low**  **Expected answer: The finger command uses data in the passwd file to give information on system users.**  **16. What is the easiest method to create a file on UNIX?**  **Level: Low**  **Expected answer: Use the touch command**  **17. What does >> do?**  **Level: Intermediate**  **Expected answer: The ">>" redirection symbol appends the output from the command specified into the file specified. The file must already have been created.**  **18. If you aren?t sure what command does a particular UNIX function what is the best way to determine the command?**  **Expected answer: The UNIX man -k command will search the man pages for the value specified. Review the results from the command to find the command of interest.**  ***Oracle Troubleshooting:***  **1. How can you determine if an Oracle instance is up from the operating system level?**  **Level: Low**  **Expected answer: There are several base Oracle processes that will be running on multi-user operating systems, these will be smon, pmon, dbwr and lgwr. Any answer that has them using their operating system process showing feature to check for these is acceptable. For example, on UNIX a ps -ef|grep dbwr will show what instances are up.**  **2. Users from the PC clients are getting messages indicating :**  **Level: Low**  **ORA-06114: (Cnct err, can't get err txt. See Servr Msgs & Codes Manual)**  **What could the problem be?**  **Expected answer: The instance name is probably incorrect in their connection string.**  **3. Users from the PC clients are getting the following error stack:**  **Level: Low**  **ERROR: ORA-01034: ORACLE not available**  **ORA-07318: smsget: open error when opening sgadef.dbf file.**  **HP-UX Error: 2: No such file or directory**  **What is the probable cause?**  **Expected answer: The Oracle instance is shutdown that they are trying to access, restart the instance.**  **4. How can you determine if the SQLNET process is running for SQLNET V1? How about V2?**  **Level: Low**  **Expected answer: For SQLNET V1 check for the existence of the orasrv process. You can use the command "tcpctl status" to get a full status of the V1 TCPIP server, other protocols have similar command formats. For SQLNET V2 check for the presence of the LISTENER process(s) or you can issue the command "lsnrctl status".**  **5. What file will give you Oracle instance status information? Where is it located?**  **Level: Low**  **Expected answer: The alert.ora log. It is located in the directory specified by the background\_dump\_dest parameter in the v$parameter table.**  **6. Users aren?t being allowed on the system. The following message is received:**  **Level: Intermediate**  **ORA-00257 archiver is stuck. Connect internal only, until freed**  **What is the problem?**  **Expected answer: The archive destination is probably full, backup the archive logs and remove them and the archiver will re-start.**  **7. Where would you look to find out if a redo log was corrupted assuming you are using Oracle mirrored redo logs?**  **Level: Intermediate**  **Expected answer: There is no message that comes to the SQLDBA or SRVMGR programs during startup in this situation, you must check the alert.log file for this information.**  **8. You attempt to add a datafile and get:**  **Level: Intermediate**  **ORA-01118: cannot add anymore datafiles: limit of 40 exceeded**  **What is the problem and how can you fix it?**  **Expected answer: When the database was created the db\_files parameter in the initialization file was set to 40. You can shutdown and reset this to a higher value, up to the value of MAX\_DATAFILES as specified at database creation. If the MAX\_DATAFILES is set to low, you will have to rebuild the control file to increase it before proceeding.**  **9. You look at your fragmentation report and see that smon hasn?t coalesced any of you tablespaces, even though you know several have large chunks of contiguous free extents. What is the problem?**  **Level: High**  **Expected answer: Check the dba\_tablespaces view for the value of pct\_increase for the tablespaces. If pct\_increase is zero, smon will not coalesce their free space.**  **10. Your users get the following error:**  **Level: Intermediate**  **ORA-00055 maximum number of DML locks exceeded**  **What is the problem and how do you fix it?**  **Expected answer: The number of DML Locks is set by the initialization parameter DML\_LOCKS. If this value is set to low (which it is by default) you will get this error. Increase the value of DML\_LOCKS. If you are sure that this is just a temporary problem, you can have them wait and then try again later and the error should clear.**  **11. You get a call from you backup DBA while you are on vacation. He has corrupted all of the control files while playing with the ALTER DATABASE BACKUP CONTROLFILE command. What do you do?**  **Level: High**  **Expected answer: As long as all datafiles are safe and he was successful with the BACKUP controlfile command you can do the following:**  **CONNECT INTERNAL**  **STARTUP MOUNT**  **(Take any read-only tablespaces offline before next step ALTER DATABASE DATAFILE .... OFFLINE;)**  **RECOVER DATABASE USING BACKUP CONTROLFILE**  **ALTER DATABASE OPEN RESETLOGS;**  **(bring read-only tablespaces back online)**  **Shutdown and backup the system, then restart**  **If they have a recent output file from the ALTER DATABASE BACKUP CONTROL FILE TO TRACE; command, they can use that to recover as well.**  **If no backup of the control file is available then the following will be required:**  **CONNECT INTERNAL**  **STARTUP NOMOUNT**  **CREATE CONTROL FILE .....;**  **However, they will need to know all of the datafiles, logfiles, and settings for MAXLOGFILES, MAXLOGMEMBERS, MAXLOGHISTORY, MAXDATAFILES for the database to use the command.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | [**OTN Ask Tom**](http://www.oraclepower.com/WebPortal/webportal?aid=rss&ch=asktomnew) | | |  |  | | --- | --- | |  | [rman question](JavaScript:OpenWindow(%22http://asktom.oracle.com/pls/asktom/f?p=100:11:0::::P11_QUESTION_ID:1082232742209%22,%22asktomnew%22)) | |  | [Data Guard](JavaScript:OpenWindow(%22http://asktom.oracle.com/pls/asktom/f?p=100:11:0::::P11_QUESTION_ID:4111318776437%22,%22asktomnew%22)) | |  | [New Features in 11g](JavaScript:OpenWindow(%22http://asktom.oracle.com/pls/asktom/f?p=100:11:0::::P11_QUESTION_ID:349660700346823279%22,%22asktomnew%22)) | |  | [Refresh on Materialized View](JavaScript:OpenWindow(%22http://asktom.oracle.com/pls/asktom/f?p=100:11:0::::P11_QUESTION_ID:4541191739042%22,%22asktomnew%22)) | |  | [Considering SQL as a Service](JavaScript:OpenWindow(%22http://asktom.oracle.com/pls/asktom/f?p=100:11:0::::P11_QUESTION_ID:672724700346558185%22,%22asktomnew%22)) | |  | [SQL Tuning](JavaScript:OpenWindow(%22http://asktom.oracle.com/pls/asktom/f?p=100:11:0::::P11_QUESTION_ID:8764517459743%22,%22asktomnew%22)) | |  | [Dynamic Dynamic SQL](JavaScript:OpenWindow(%22http://asktom.oracle.com/pls/asktom/f?p=100:11:0::::P11_QUESTION_ID:227413938857%22,%22asktomnew%22)) | |  | [SQL Profiles](JavaScript:OpenWindow(%22http://asktom.oracle.com/pls/asktom/f?p=100:11:0::::P11_QUESTION_ID:61313086268493%22,%22asktomnew%22)) | |  | [more..](http://www.oraclepower.com/WebPortal/webportal?aid=rss&ch=asktomnew) | | | | |  | | --- | | [**OTN Downloads**](http://www.oraclepower.com/WebPortal/webportal?aid=rss&ch=software) | | |  |  | | --- | --- | |  | [Oracle Enterprise Manager 10g Grid Control Management Agents (10.2.0.5) for Solaris x86, x86-64, IBM Power Based Linux](JavaScript:OpenWindow(%22http://www.oracle.com/technology/software/products/oem/index.html?rssid=rss_otn_soft%22,%22software%22)) | |  | [Oracle Service Bus 10gR3 (10.3.1.0)](JavaScript:OpenWindow(%22http://www.oracle.com/technology/software/products/osb/index.html?rssid=rss_otn_soft%22,%22software%22)) | |  | [more..](http://www.oraclepower.com/WebPortal/webportal?aid=rss&ch=software) | | | | |  | | --- | | [**Security Alerts**](http://www.oraclepower.com/WebPortal/webportal?aid=rss&ch=security) | | |  |  | | --- | --- | |  | [Critical Patch Update - April 2009](JavaScript:OpenWindow(%22http://www.oracle.com/technology/deploy/security/critical-patch-updates/cpuapr2009.html%22,%22security%22)) | |  | [more..](http://www.oraclepower.com/WebPortal/webportal?aid=rss&ch=security) | | | | |  | | --- | | **Site Statistics** | | |  | | --- | |  |  |  | | --- | | **Page Views** | | **2,170 today** | | **5,785 yesterday** | | **112,274 last month** | | **11,674,711 total** | | | |

<http://www.oraclepower.com/WebPortal/webportal?aid=sp&pg=/pages/hiringquestions.htm>