

Chapter 2: Tools and Architecture

TRUE/FALSE

1. The Database Configuration Assistant creates new database instances.

ANS: T PTS: 1 REF: 36

2. The Schema Manager provides access to configuration, sessions and resource consumer group configuration. It also includes summary advisory performance metrics.

ANS: F PTS: 1 REF: 37

3. The Net Configuration Assistant views and modifies data; views and modifies table structures, indexes, views, objects, procedures, and packages.

ANS: F PTS: 1 REF: 37

4. The Security Manager views and modifies users, roles, and profiles; creates new users; changes passwords.

ANS: T PTS: 1 REF: 37

5. You can stop the database using SQL*Plus or iSQL*Plus.

ANS: T PTS: 1 REF: 39

6. Oracle Net Services resides only on the server side of the network.

ANS: F PTS: 1 REF: 40

7. When you are using tools that reside on the same computer as the database, you might assume that no Oracle Net Services connection is needed.

ANS: T PTS: 1 REF: 40

8. The port setting 1521 is the default port setting for most Oracle database listeners.

ANS: T PTS: 1 REF: 44

9. The SID has been replaced by the service name in Oracle8i and higher.

ANS: T PTS: 1 REF: 46

10. The listener listens for requests made by user connections.

ANS: T PTS: 1 REF: 50

11. Listener logging and tracing can be a drain on resources and is defaulted as on.

ANS: F PTS: 1 REF: 50

12. You can use Net Manager to start and stop the listener.

ANS: F PTS: 1 REF: 51

13. iSQL*Plus output looks like an HTML table.

ANS: T PTS: 1 REF: 55

14. A dedicated server is the best configuration for an OLTP database system with a large number of users.

ANS: F PTS: 1 REF: 56-57

15. A shared server is the best configuration for a database system with large amounts of memory and CPU power because user sessions never have to wait for a server process to be available.

ANS: F PTS: 1 REF: 57

16. A session lasts from the time you make a connection until you end the connection.

ANS: T PTS: 1 REF: 57

17. The process monitor process writes buffers to datafiles.

ANS: F PTS: 1 REF: 60

18. If there are multiple files in a log group, LGWR writes to all the files at the same time, in parallel.

ANS: T PTS: 1 REF: 60

19. The recoverer process is only present in a distributed database system.

ANS: T PTS: 1 REF: 60

20. The queue monitor process is optional and is utilized when running Oracle Streams Advanced Queuing.

ANS: T PTS: 1 REF: 61

21. The PGA is allocated when an instance is started and is deallocated when the instance is shut down.

ANS: F PTS: 1 REF: 62

22. The SGA is effectively used in session connection memory and is broken into private chunks for each server process.

ANS: F PTS: 1 REF: 63

23. In versions of Oracle prior to Oracle 10g, executing the Enterprise Manager console (or simply console) was complicated.

ANS: T PTS: 1 REF: 63

24. The Enterprise Manager console is only available in the Oracle client installation, for Oracle10g.

ANS: T PTS: 1 REF: 64

25. The Instance Manager allows starting and stopping of the database when running the console from a client machine.

ANS: F PTS: 1 REF: 66

26. The Schema Manager provides a way to manipulate anything in the database that is in a schema.

ANS: T PTS: 1 REF: 69

27. Each schema is owned by one Oracle user and is identified by the user's name.

ANS: T PTS: 1 REF: 69

28. The Security Manager's primary tasks involve setting up and maintaining users in Oracle10g.

ANS: T PTS: 1 REF: 72

29. The Schema Manager performs storage-related tasks in the Oracle10g database.

ANS: F PTS: 1 REF: 75

30. The Administration screen of the Database Control provides comprehensive maintenance access to database utilities, backup/recovery, and deployment activities.

ANS: F PTS: 1 REF: 78

MULTIPLE CHOICE

1. The ____ collects statistics about tables or objects, validates tables, finds continuing rows.

a. Backup and Restore Wizard c. Net Manager
b. Analyze Wizard d. Universal Installer

ANS: B PTS: 1 REF: 36

2. The ____ migrates data from older versions to newer versions of the database.

a. Export and Import Wizard c. Analyze Wizard
b. Database Configuration Assistant d. Data Upgrade Assistant

ANS: D PTS: 1 REF: 36

3. The ____ is used to install Oracle software, or change an existing installation.

a. Log Miner c. Universal Installer
b. Schema Manager d. Instance Manager

ANS: C PTS: 1 REF: 37

4. ____ is the Grid Computing (clustered) version of the Database Control.

a. Grid Control c. XML Database Manager
b. Storage Manager d. Warehouse Summary Management

ANS: A PTS: 1 REF: 37

5. The Oracle Net Services configuration is stored in the ____ configuration file on the client computer.
- a. listener.ora
 - b. client.ora
 - c. tnsnames.ora
 - d. netservices.ora

ANS: C PTS: 1 REF: 40

6. The database has a service called the ____ process. This process waits for requests and responds to requests as needed.
- a. listener
 - b. netservice
 - c. netserver
 - d. netnames

ANS: A PTS: 1 REF: 40

7. A ____ is a label given to a specific network configuration, usually a specific computer, at a specific TCP/IP address.
- a. bequeath protocol
 - b. network name
 - c. JDBC
 - d. database name

ANS: B PTS: 1 REF: 41

8. Computers on a network use ____ connections to communicate with each other.
- a. database
 - b. listener
 - c. database
 - d. network

ANS: D PTS: 1 REF: 42

9. ____ is the default method for connecting to a database.
- a. TNS
 - b. LDAP
 - c. Host naming
 - d. Easy connect

ANS: A PTS: 1 REF: 42

10. To start Net Manager in Unix or Linux, type ____ on the command line of a shell.
- a. sqlplus
 - b. sql+
 - c. sqlmgr
 - d. netmgr

ANS: D PTS: 1 REF: 43

11. To discover the name on a Unix or Linux machine use the ____ command in a shell.
- a. ls
 - b. ENV
 - c. netmgr
 - d. ps

ANS: B PTS: 1 REF: 46

12. The tnsnames.ora file is found in the ____ directory on Unix or Linux.
- a. /etc/network/admin
 - b. /user/network/admin
 - c. ORACLE_HOME/network/admin
 - d. /sbin/network/admin

ANS: C PTS: 1 REF: 48

13. The ____ variable is the directory upward from the ORACLE_HOME variable.
- a. ORACLE_DIR
 - b. ORACLE_ROOT
 - c. ORACLE_BEGIN
 - d. ORACLE_BASE

ANS: D PTS: 1 REF: 49

14. The listener.ora file is stored in the ____ directory.
- a. \$ORACLE_HOME/network/admin
 - b. /home/network/admin
 - c. /sbin/network/admin
 - d. /etc/network/admin
- ANS: A PTS: 1 REF: 49
15. The ____ file is placed onto the client machine, allowing communication between the client machine and the listener on the database sever.
- a. listener.ora
 - b. servers.ora
 - c. tnsnames.ora
 - d. clients.ora
- ANS: C PTS: 1 REF: 49
16. The ____ listens for requests and passes them on to the appropriate database server process for execution in the database.
- a. tnsnames
 - b. listener
 - c. schema manager
 - d. storage manager
- ANS: B PTS: 1 REF: 50
17. You can start and stop the listener using the listener control utility (____).
- a. netmgr
 - b. ps
 - c. lsnrctl
 - d. vi
- ANS: C PTS: 1 REF: 50
18. Load balancing between multiple listener processes is placed in the ____ configuration file on the client computer.
- a. listener.ora
 - b. processes.ora
 - c. balance.ora
 - d. tnsnames.ora
- ANS: D PTS: 1 REF: 51
19. The ____ allows definition of all possible individual sections of configuration for Oracle Net Services.
- a. Schema Manager
 - b. Net Configuration Assistant
 - c. Security Manager
 - d. Storage Manager
- ANS: B PTS: 1 REF: 52
20. An easy way to validate configuration is to use an Oracle version of the TCP/IP ping utility, called ____.
- a. tnsping
 - b. netmgr
 - c. netping
 - d. tcping
- ANS: A PTS: 1 REF: 52
21. ____ is a Web-based version of SQL*Plus.
- a. SQL *Plus Worksheet
 - b. iSQL*Plus
 - c. Net Services Console
 - d. Instance Manager
- ANS: B PTS: 1 REF: 54
22. The ____ is the part of an Oracle database executing in memory, when a database is started.
- a. lsnrctl
 - b. netmgr
 - c. LDAP
 - d. Oracle instance
- ANS: D PTS: 1 REF: 56

23. In the case of a ____ server, every user session (connection) has its own server process.
- a. dedicated
 - b. shared
 - c. background
 - d. foreground
- ANS: A PTS: 1 REF: 56
24. A ____ server uses CPU and memory more efficiently by swapping out user sessions during idle time.
- a. dedicated
 - b. foreground
 - c. shared
 - d. background
- ANS: C PTS: 1 REF: 56
25. Setting a user connection as being dedicated or shared can be controlled in the client-side configuration of Oracle Net Services, in the ____ file.
- a. tnsnames.ora
 - b. listener.ora
 - c. server.ora
 - d. mode.ora
- ANS: A PTS: 1 REF: 57
26. The ____ contains many of the memory buffer components for an up and running (online) Oracle instance.
- a. LDAP
 - b. PGA
 - c. SGA
 - d. TNS
- ANS: C PTS: 1 REF: 59
27. The ____ process cleans up after user sessions are finished.
- a. SMON
 - b. PMON
 - c. DBWn
 - d. CKPT
- ANS: B PTS: 1 REF: 60
28. The ____ does not write any data to disks. It signals the DBWn to begin writing to disk, by issuing a checkpoint.
- a. PMON
 - b. SMON
 - c. RECO
 - d. CKPT
- ANS: D PTS: 1 REF: 60
29. The ____ process handles recovery if it is needed.
- a. ARCn
 - b. SMON
 - c. RECO
 - d. LGWR
- ANS: B PTS: 1 REF: 60
30. The ____ is only present when a database is in ARCHIVELOG mode.
- a. ARCn
 - b. CKPT
 - c. DBWn
 - d. Dnnn
- ANS: A PTS: 1 REF: 60
31. ____ processes are only present in shared server mode to distribute user connection requests, between server processes.
- a. Queue monitor
 - b. Recoverer
 - c. Checkpoint
 - d. Dispatcher

ANS: D PTS: 1 REF: 61

32. The ____ processor runs scheduled jobs, submitted in background, using the DBMS_JOBS package, as scheduled batch job operations.
- a. system monitor
 - b. dispatcher
 - c. job queue
 - d. recoverer

ANS: C PTS: 1 REF: 61

33. The two main sections of memory for the Oracle instance are the System Global Area (SGA) and the ____.
- a. Queue Monitor Area (QMA)
 - b. Job Queue Area (JQA)
 - c. Dispatcher Global Area (DGA)
 - d. Program Global Area (PGA)

ANS: D PTS: 1 REF: 61

34. In Oracle10g the buffer cache can consist of multiple buffer caches, of different sizes. The default size is ____.
- a. 2K
 - b. 8K
 - c. 16K
 - d. 32K

ANS: B PTS: 1 REF: 62

35. The ____ area stores parsed SQL in memory.
- a. redo log buffer
 - b. Java pool
 - c. shared pool
 - d. large pool

ANS: C PTS: 1 REF: 63

36. Whenever a change is made to data, the ____ stores a copy of the changed data and the original data, in case it is needed.
- a. redo log buffer
 - b. Java pool
 - c. shared pool
 - d. streams pool

ANS: A PTS: 1 REF: 63

37. The ____ improves response time for background processes and for backup and recovery processes.
- a. streams pool
 - b. large pool
 - c. redo log buffer
 - d. shared pool

ANS: B PTS: 1 REF: 63

38. ____ and its console can be used as a centralized control center for many of the available DBA tools.
- a. Enterprise Manager
 - b. Buffer Cache
 - c. Process Monitor
 - d. Job Queue Process

ANS: A PTS: 1 REF: 64

39. The ____ button allows you to end a user session from the console.
- a. Sessions
 - b. SGA Memory
 - c. Kill Session
 - d. Dynamic

ANS: C PTS: 1 REF: 68

40. A ____ is a set of database structures, such as tables, indexes, user-defined attributes, and procedures.
- a. session
 - c. console

b. view

d. schema

ANS: D

PTS: 1

REF: 69

COMPLETION

1. The _____ monitors databases and provides access to database management tools.

ANS: Enterprise manager console

PTS: 1

REF: 36

2. The _____ queries redo log files and otherwise. Also called Data Miner.

ANS: Log Miner

PTS: 1

REF: 37

3. Oracle _____ is made up of several subcomponents that work together to translate your requests, such as SQL queries, into network packages for the local, or Internet, network.

ANS: Net Services

PTS: 1

REF: 39

4. A(n) _____ is the set of information (configuration) that Oracle Net Services uses to locate and communicate with an Oracle database.

ANS: service name

PTS: 1

REF: 40

5. A(n) _____ protocol allows a direct connection to a database, on a database server computer, without going through Oracle Net services and without requiring a network name.

ANS: bequeath

PTS: 1

REF: 40-41

6. A(n) _____ is a way in which a node name on a network will be translated into a form understandable and routable by hardware and network software on that network.

ANS: naming method

PTS: 1

REF: 42

7. Service names and their mappings are stored in a(n) _____ server.

ANS:

lightweight directory access protocol (LDAP)

lightweight directory access protocol

LDAP

PTS: 1 REF: 42

8. The _____ network name is used to call external programs (external to Oracle software), such as DLL's.

ANS: EXTPROC_CONNECTION_DATA

PTS: 1 REF: 43

9. The _____ variable refers to the directory where Oracle installs its executable files.

ANS: ORACLE_HOME

PTS: 1 REF: 49

10. The _____ file is stored on the database server, providing configuration for how the listener process listens over the network, for connection requests.

ANS: listener.ora

PTS: 1 REF: 49

11. The _____ configuration file is used to translate a connection string typed by the user into the network and database, addressing information needed to locate the database on the network.

ANS: tnsnames.ora

PTS: 1 REF: 50

12. The _____ utility attempts to contact the database server through Oracle Net Services, using both the client TNS configuration, and the database server listener process configuration.

ANS: tnsping

PTS: 1 REF: 52

13. _____ gives you a way to write queries and other SQL commands via the Internet, or across a network, returning results in a Web browser.

ANS:

iSQL*Plus (Internet SQL*Plus)

iSQL*Plus

Internet SQL*Plus

PTS: 1 REF: 54

14. The link from the user session, through the server session, and to the database instance is called a(n) _____.

ANS: connection

PTS: 1 REF: 57

15. The _____ processes support and monitor the server processes and handle database management tasks to keep the database running efficiently and to help maintain fast performance.

ANS: background

PTS: 1 REF: 59

16. The _____ process writes redo log buffers to the redo log files.

ANS:
log writer (LGWR)
log writer
LGWR

PTS: 1 REF: 60

17. A checkpoint is assigned a(n) _____ that is written into each redo log entry, the control files, and each data block that is written back to the datafiles.

ANS:
system change number (SCN)
system change number
SCN

PTS: 1 REF: 60

18. A(n) _____ system has multiple instances that are used as if they were one instance.

ANS: distributed database

PTS: 1 REF: 60

19. _____ service database connections (between database server and users) both with dedicated server configuration and with shared server configuration (using dispatchers).

ANS:
Server processes (Snnn)
Server processes
Snnn

PTS: 1 REF: 61

20. The _____ is used for java code buffering specific to user sessions.

ANS: Java pool

PTS: 1 REF: 63

21. A(n) _____ is like a direct pipeline between different databases, often used to manage replication (duplication) of data across multiple databases.

ANS: Oracle Stream

PTS: 1 REF: 63

22. The _____ monitors activities in the database.

ANS: Instance Manager

PTS: 1 REF: 66

23. The _____ views table structures, creates new tables, indexes, views, and any other type of object stored in the database.

ANS: Schema Manager

PTS: 1 REF: 66

24. The _____ creates new users, allocates storage resources to users, and changes passwords.

ANS: Security Manager

PTS: 1 REF: 66

25. The _____ monitors storage use (tablespaces and datafiles) and adds more space as needed or adjusts settings on existing storage units.

ANS: Storage Manager

PTS: 1 REF: 66

ESSAY

1. Why is it important for you to be familiar with both automated (using a tool) and manual (using a command) methods for performing tasks in Oracle?

ANS:

Whether you start the tools from the command line, console, or a Windows type menu, these tools give you a way to work on the database in a Windows-style environment, in which the actual Oracle commands may be generated for you. However, it is important to be familiar with both automated (using a tool) and manual (using a command) methods for some tasks.

Sometimes, you do not have a Windows-like interface for diagnosing and correcting a problem with the database. In these cases, you must understand how to work directly from the command line. Other times, as you become familiar with both methods, you may find that certain tasks are more quickly accomplished using manual methods. For example, changing a user's password can be done with a single command line in SQL*Plus. On the other hand, changing a user's password in Security Manager requires opening Windows, navigating through lists of users, and then typing the password twice. Of course, you must know the command by heart before the manual version is faster than the tool. Later chapters teach both manual and toolbased methods for many tasks.

PTS: 1 REF: 37-38

2. What are the three paths of communication used when you access the database while logged on to the server?

ANS:

The three methods are:

- * Client with Oracle Net: When a client computer runs applications such as those written in C or COBOL, the client computer must install the client-side version of Oracle10g. This provides Oracle Net Services and its tools, so the client can configure a service name to reach the database server over the network.
- * Client with JDBC driver: A client running a browser with a Java applet can use the JDBC thin driver to access a remote database via the Internet. The JDBC thin driver can be included in the applet, so that no additional software needs to be installed. On the server side, the database only requires a standard TCP/IP protocol program (which is generally already installed and used for most Internet communication).
- * Terminal with direct connection: When you log directly on to the database server (without using a network name), you access the database directly via the bequeath protocol. To use this, you simply leave the service name blank when logging on to any tools or utilities. You are automatically directed to the database that is running on the machine, based on the environmental configuration of the database server. This technique also supports a workstation computer that has its own copy of the database running. By default, you reach the database on your computer when you omit the service name during logon.

PTS: 1

REF: 41

3. What are the different naming methods supported by Oracle?

ANS:

The following describes the naming methods supported by Oracle:

- * Local naming: Use a configuration file called tnsnames.ora, commonly called TNS (Transparent Network Substrate). TNS is the default method for connecting to a database.
- * Directory naming: Service names and their mappings are stored in a lightweight directory access protocol (LDAP) server, much like a DNS server.
- * Host naming: This method uses an operating system-based IP address to hostname mapping host files. Host files on Solaris Unix are placed in the /etc/system directory and on Windows in the c:\windows\system32\drivers\etc directory.
- * External naming: Third-party naming services involve third-party software applications that are not part of Oracle software.
- * Easy connect: No naming, such as TNS lookup in the tnsnames.ora is required, allowing direct access to a database server. This option allows a direct connection to a database server using a connection string as shown in this syntax diagram:

```
CONNECT <user>/<password>@host:port/service
```

PTS: 1

REF: 42-43

4. How can you execute SQL *Plus and SQL *Plus Worksheet?

ANS:

To execute SQL*Plus, select Start/All Programs/Oracle .../Application Development/SQL Plus from the menu. A user name, password and host string (network name) are required to connect.

To execute SQL*Plus Worksheet, select Start/Programs/Oracle/Application Development/SQLPlus Worksheet from the menu. Note how SQL*Plus Worksheet allows a connection as a database super user (SYSDBA and SYSOPER), and SQL*Plus does not. Connect to SQL*Plus as a super user with the command-line version of SQL*Plus, as in the following example code:

```
sqlplus <username>/<password>@<tns network name>
```

PTS: 1 REF: 53-54

5. How can you configure a shared server and a dedicated server using the tnsnames.ora file?

ANS:

Setting a user connection as being dedicated or shared can be controlled in the client-side configuration of Oracle Net Services, in the tnsnames.ora file, for shared server processes, as shown in the following configuration:

```
ORAClass =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP) (HOST = 1300server) (PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = oraclass)
      (SERVER = SHARED)
    )
  )
)
```

And for dedicated server processes, as shown in the following configuration:

```
ORAClass =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP) (HOST = 1300server) (PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = oraclass)
      (SERVER = DEDICATED)
    )
  )
)
```

PTS: 1 REF: 57-58