



PAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE (SYSTEMS ADMINISTRATION)	
QUALIFICATION CODE: 07BCMS	LEVEL: 7
COURSE: Database Administration	COURSE CODE: DBA712S
DATE: July 2022	SESSION: 2
DURATION: 3 hours	MARKS: 100

SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
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THIS EXAM QUESTION PAPER CONSISTS OF 7 PAGES

(Excluding this front page)

INSTRUCTIONS

1. Answer ALL the questions on the answer scripts.
2. Write clearly and neatly.
3. Number the answers clearly.
4. When answering questions you should be guided by the allocation of marks in []. Do not give too few or too many facts in your answers.

PERMISSIBLE MATERIALS

1. Non-programmable calculator.

Section A (Multiple Choice)

[20 marks]

1. In your multitenant container database (CDB) with two pluggable database (PDBs). You want to create a new PDB by using SQL Developer. Which statement is true?
 - A. The CDB must be open.
 - B. The CDB must be in the mount stage.
 - C. The CDB must be in the nomount stage.
 - D. All existing PDBs must be closed.

2. In which two scenarios do you use SQL* Loader to load data? (Choose two.)
 - A. Transform the data while it is being loaded into the database.
 - B. Use transparent parallel processing without having to split the external data first.
 - C. Load data into multiple tables during the same load statement.
 - D. Generate unique sequential key values in specified columns.

3. Your multitenant container database has three pluggable databases (PDBs): PDB1, PDB2, and PDB3. Which two RMAN commands may be; used to back up only the PDB1 pluggable database? (Choose two.)
 - A. BACKUP PLUGGABLE DATABASE PDB1 while connected to the root container
 - B. BACKUP PLUGGABLE DATABASE PDB1 while connected to the PDB1 container
 - C. BACKUP DATABASE while connected to the PDB1 container
 - D. BACKUP DATABASE while connected to the boot container
 - E. BACKUP PLUGGABLE database PDB1 while connected to PDB2

4. You are managing an Oracle Database 12c database. The database is open, and you plan to perform Recovery Manager (RMAN) backups. Which three statements are true about these backups? (Choose three.)
 - A. The backups would be possible only if the database is running in ARCHIVELOG mode.
 - B. The backups need to be restored and the database has to be recovered in case of a media failure.
 - C. The backups by default consist of all the data blocks within the chosen files or the full database.
 - D. The backups would be consistent.
 - E. The backups would be inconsistent.

5. You want to create a database with a block size other than the default 8 kilobytes (KB) by using the Database Configuration Assistant (DBCA). Which option should you use?
- A. Automatic Storage Management (ASM) for storage of data files
 - B. a custom database template
 - C. a file system for storage of data files
 - D. a Data Warehouse database template
6. You create a new pluggable database, HR_PDB, from the seed database. Which three tablespaces are created by default in HR_PDB? (Choose three.)
- A. SYSTEM
 - B. SYSAUX
 - C. EXAMPLE
 - D. UNDO
 - E. TEMP
 - F. USERS
7. What is the outcome of the SHUTDOWN ABORT command?
- A. Uncommitted transactions are rolled back
 - B. Instance recovery must be requested by the DBA at the next startup
 - C. Pending transactions are committed and the database is closed.
 - D. Dirty buffers in the buffer cache and unwritten redo are not written to the data files and redo log files respectively.
8. Which task is performed by a background process in a database instance?
- A. Copying online redo log files to offline storage
 - B. Creating dedicated server connections
 - C. Connecting between a client process and a dispatcher
 - D. Executing PL/SQL code

9. Which two statements are true about initialization parameter files? (Choose two.)
- A. Both the SPFILE and PFILE must always reside on a file system accessible from the database host server.
 - B. On startup, by default a database instance always first searches for an SPFILE, and if it does not find any, searches for a PFILE.
 - C. A PFILE must exist for an SPFILE to be created.
 - D. A lost or damaged SPFILE can be re-created by using the parameter values listed in the alert log.
 - E. The ALTER SYSTEM command cannot be used to change the value of any parameter if a database instance has started using a PFILE.

10. Your database is open and the listener LISTENER is up. You issue the command:

```
LSNRCTL> RELOAD
```

What is the effect of RELOAD on sessions that were originally established by LISTENER?

- A. Existing connections are not disconnected; however, they cannot perform any operations until the listener completes the re-registration of the database instance and service handlers.
 - B. Only sessions based on static listener registrations are disconnected.
 - C. All the sessions are terminated and active transactions are rolled back.
 - D. The sessions are not affected and continue to function normally.
11. You configured the Fast Recovery Area (FRA) for your database. The database instance is in ARCHIVELOG mode. The default location for the archived redo log files is the FRA.

Which two files are removed automatically if space is required in the FRA as per the retention policy? (Choose two.)

- A. flashback logs
- B. RMAN backups that are obsolete
- C. user-managed backups of data files and control files
- D. Archived redo log files that have multiple copies in a different archive location

12. Which two are true concerning a multitenant container database with three pluggable database? (Choose two.)
- A. The pluggable databases are patched together.
 - B. Pluggable databases are only used for database consolidation.
 - C. The pluggable databases increase patching time.
 - D. All administration tasks must be done to a specific pluggable database.
 - E. The pluggable databases reduce administration effort.

Section B (Structured Questions)

[65 marks]

Question 1

Describe what the use each of the following schema objects in Database Administration (Do not just define the objects but state what DBAs can use them for): [10]

- i. View
- ii. Sequence
- iii. Data Dictionary
- iv. Trigger
- v. Package

Question 2

- a. You are installing a Database and have a choice to install Enterprise Edition or Express Edition. Give two reasons you would choose to install the Enterprise Edition over the Express Edition and two reasons you would choose to install the Express Edition over the Enterprise Edition. [8]
- b. There are four Database Administrative Tools used with the Oracle database namely:
 - i. SQL PLUS,
 - ii. SQL Developer,
 - iii. Enterprise Manage Database Express,
 - iv. Enterprise Manage Database Cloud Control.

Choose any two administrative tools from the above and give two limitations and two benefits of each. [8]

- c. You are managing passwords for users in an organisation. Describe in detail what four aspects you look into when managing a database password. [4]

Question 3

You are installing your database and you have set your pluggable as **YourLastname** where **YourLastname** is your surname.

- a. Outline three advantages of using a pluggable database (Multitenant architecture) over a container database. [6]
- b. Given that you create a user called **YourName** where **YourName** is your first name and password is **YourSurname**. State how you would connect this user to the pluggable database called **Exampdb**, assuming it has been set as the container database and is open for reading and writing? [2]
- c. What are some of the system privileges you would give the user **YourName** to enable them to connect to the pluggable database (Name two). [2]

Question 4

Outline five challenges that have been presented by the COVID-19 pandemic to database administration. [10]

Question 5

- a. In oracle 12c/19c there are three startup and four shutdown modes.
 - i. List the startup modes. [1]
 - ii. Give examples of situations where you would use each of the shutdown modes. [8]
- b. As a DBA you will normally perform database installations following the following guidelines; **pre-installation**, **installation** then **post-installation**. State at least two tasks you would perform at each of the stages of the above guidelines. [6]

Section C (SQL Commands)

[15 marks]

Question 1

You are given that a user has created a text file called **YourLastname.txt** where **YourLastname** is your surname in the folder **c:\Test>**. This text file contains the following information.

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Adam Everson,17,M

Jefrey Shilongo,18,M

Joe Peters,19,M

- a. Write SQL statements to create a table, **Student_Details**, in your database given that the data above is Full_name, Age and Sex: [5]
- b. Write the contents of a control file that can be used to load the data in the file **YourLastname.txt** into the table **Student_Details** using the SQL Loader. [10]

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