



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF COMPUTING AND INFORMATICS**

DEPARTMENT OF COMPUTER SCIENCE

<b>QUALIFICATION:</b> BACHELOR OF COMPUTER SCIENCE, BACHELOR OF INFORMATION TECHNOLOGY	
<b>QUALIFICATION CODE:</b> 07BACS, 80BSAN, 80BSSD	<b>LEVEL:</b> 7
<b>COURSE:</b> DATABASE ADMINISTRATION	<b>COURSE CODE:</b> DBA712S
<b>DATE:</b> JANUARY 2020	<b>SESSION:</b> 2
<b>DURATION:</b> 3 HOURS	<b>MARKS:</b> 100

<b>SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
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**THIS QUESTION PAPER CONSISTS OF 6 PAGES**  
(Excluding this front page)

**INSTRUCTIONS**

1. Answer ALL the questions.
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 Scientific Calculator.

**Section A: Multiple Choice, 15 marks one mark each.**

1. Can an Integrity Constraint be enforced on a table if some existing table data does not satisfy the constraint?
  - A. Yes
  - B. No
  
2. A View is
  - A. A more detailed look at a table
  - B. A description of column names
  - C. A diagram of table relationships
  - D. A pre-programmed `SELECT` statement against one or more tables
  - E. A stored set of data on the database
  
3. SQL\*Pump is a utility for:
  - A. Loading data from an external file
  - B. Export and import data and metadata from a database
  - C. Reformat data during loading a database
  - D. Checking for incompatible data and discard them
  - E. Loading data using `SQL INSERT` commands
  
4. A User can
  - A. Be assigned multiple roles
  - B. Have multiple schemas
  - C. Have the privilege to access one or more table spaces
  - D. Have an authorization method that does not require a password
  - E. Have multiple concurrent sessions
  
5. What does the Listener NOT do??
  - A. Create a server process
  - B. Monitor network traffic on a particular port
  - C. Receive requests to connect to one or more databases
  - D. Keep a client session active
  - E. Provide network listening services for non-Oracle applications
  
6. Which of the following is not a reason for the fact that most of the processing is done at the server?
  - A. To reduce network traffic.
  - B. For application sharing.
  - C. To implement business rules centrally.
  - D. None of the above

7. Multiple Tablespaces can share a single datafile
  - A. TRUE
  - B. FALSE
  
8. Net Manager can NOT be used to:
  - A. Associate a connect string with a global database service name
  - B. Shutdown a database remotely over a network connection
  - C. Identify the network protocol used to access a database server
  - D. Implement logging and tracing for network connections
  - E. Verify that a user can log on from a client to the database
  
9. What is NOT true using a Shared Server
  - A. Is good when the number of users is small
  - B. Is good in a Data Warehouse environment
  - C. Should be used for Database Administration activities
  - D. Facilitates effective access for large numbers of transactional sessions
  - E. Is preferable when using the SQL\*Loader Utility
  
10. While loading data from a file, a record is rejected because of inconsistent data. Who should solve the problem?
  - A. Application User
  - B. Project manager
  - C. Database Administrator
  - D. Data Administrator
  - E. Applications Programmer
  
11. Creating an Account does not require
  - A. A unique user-id
  - B. A list of tables to be accessed
  - C. A user profile
  - D. An authentication method
  - E. One or more tablespaces to be used
  
12. SQL DOES NOT contain
  - A. IF ... THEN conditions
  - B. Data manipulation statements
  - C. The ROLLBACK command
  - D. A command to reset a user's own password

13. Which action is typical Reactive Monitoring?
- A. Monitor decrease in free space
  - B. Monitor CPU usage after response time drops significantly
  - C. Monitor memory usage over time
  - D. Monitor average number of rows in a table
  - E. Monitor average number of user sessions
14. The Data Manipulation Language statements are
- A. INSERT
  - B. UPDATE
  - C. SELECT
  - D. All of the above
15. After a server crash due to power failure, what is needed?
- A. Manual database recovery
  - B. The `STARTUP RECOVER` command
  - C. Automatic rollback of previously unfinished transactions
  - D. Empty out buffers
  - E. Reset the log files

## **Section B: Structured Questions**

### **Question 1**

- a. Describe what each of the following schema objects does for Database Administration: [10]
- i. SGA
  - ii. Index
  - iii. PMON
  - iv. Trigger
  - v. Sequence
- b. Describe the three common database interfaces in cloud based Oracle databases. [6]

### **Question 2**

- a. Put the following database storage structures in a hierarchy in order of size and indicate a typical size for each. [4]
- Extent, Segment, OS Block, Data Block
- b. In Database Administration, what is a Data Dictionary? [2]
- c. What information does it store (give three examples of such information including code on how to get that information). [6]

### **Question 3**

- a. Differentiate between User privileges and Roles. [2]
- b. Give four benefits for the use of Roles in database administration and explain what advantage they offer. [8]

#### **Question 4**

- a. What is the content of the Redo Log files, and why are they so important for a DBMS? [4]
- b. A block in a database file (after formatting) contains a header, data, and free space.
  - a) Why is free space important? [2]
  - b) Describe a situation where you would like very little free space in the database and why? [2]
  - c) Describe a situation where you would like a high percentage of free space and why. [4]

#### **Question 5**

- a. What is the purpose of assigning a profile to a user; describe two? [4]
- b. Give at least three factors that DBAs consider when selecting an authentication method for their users. [6]
- c. When creating users why is it important to assign them temporary tablespaces? [2]
- d. What happens if you do not assign them temporary tablespaces? [2]
- e. What is the relationship between a user and a schema? [2]
- f. Differentiate between image copies and backup sets types of backup. What is the main advantage of backup sets over image copies? [4]

## Section C: Database SQL commands

### Question 1

a. Describe what each of the following SQL commands achieve? [10]

- i. `CONNECT ruva/rashe @NUST.NA`
- ii. `lsnrctl STATUS`
- iii. `SELECT name, con_id from v$pdbs`
- iv. `Tnsping sales`
- v. `UTL_SMTP`

b. You are given a text file **Sal\_info.dat** with comma separated values **Full\_name**, **Salary**, **Grade** as shown in Figure 1 below.



```
Mweulwa Sheya, 3500, D
Emma Kahimise, 3500, D
Patritia Shilongo, 4100, C
Auther Niilungu, 5300, B
Letty Muyandulwa, 3500, D
David Simeon, 1800, F
Matilde Nehale, 6450, A
Eliaser Nekundi, 3500, D
Eunice Tomeka, 5300, B
```

Figure 1

Create table called **Sal\_Table** in the **SYSTEM** Schema with suitable column names and data types to accommodate the data in Figure 1. [6]

Create a suitable control file call it **Sal\_Info.ctl** in **C:\ExportLab**. Be sure to name the bad file and discard files appropriately. [10]

Show the **sqlldr** command used to load the data in Figure 1 to the **SYSTEM** schema. Assume the password for SYSTEM is **nustuser!**. [4]

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