



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF COMPUTING AND INFORMATICS
DEPARTMENT OF COMPUTER SCIENCE**

QUALIFICATION: Bachelor of Computer Science	
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COURSE NAME: Database Administration	COURSE CODE: DBA721S
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DURATION: 3 HOURS	MARKS: 70

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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THIS QUESTION PAPER CONSISTS OF 6 PAGES (Including this front page)

INSTRUCTIONS

- 1) Answer ALL the questions on the answer scripts provided.
- 2) Write clearly and neatly.
- 3) Be guided by the number of marks allocated when answering the questions.
- 4) Show all your calculations.
- 5) Number your questions clearly.

Section A: Multiple Choice and true and false: Write the question number and correct letter next to it.

[10]

1. Which statement correctly defines a trigger?
 - a) A piece of logic written in PL/SQL.
 - b) Executed at the arrival of a SQL*FORMS event.
 - c) Both A & B
 - d) None of the above.

2. The size of a tablespace can be increased by performing which of the following?
 - a) Increasing the size of one of the Datafiles
 - b) Adding one or more Datafiles
 - c) Cannot be increased
 - d) None of the above

3. What actions are required following a database server crash caused by a power failure?
 - a) Manual database recovery
 - b) STARTUP RECOVER command
 - c) Automatic rollback of previously unfinished transactions
 - d) Empty out buffers

4. Which of the following statements correctly describe a View?
 - 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

5. Which of the following is *not* required when creating an account?
 - a) A unique user-id
 - b) A Schema
 - c) A user profiles
 - d) An authentication method

6. SQL* Pump is a utility designed for which of the following functions?
 - a) Loading data from an external file
 - b) Export and import data and metadata from a database
 - c) Reformat data while loading a database
 - d) Checking for incompatible data and discarding them

7. Which of the following statements about a user is correct?
 - a) Have multiple schemas

- b) Have the privilege to access one or more table spaces
 - c) Have an authorization method that does not require a password
 - d) Have multiple concurrent sessions
8. Which of the following is **not** a function of the Oracle Listener?
- a) Monitor network traffic on a particular port
 - b) Receive requests to connect to one or more databases
 - c) Keep a client session active
 - d) Provide network listening services for non-Oracle applications
9. All data files related to a tablespace are removed when the tablespace is dropped.
- a) TRUE
 - b) FALSE
10. Can an Integrity Constraint be enforced on a table if some existing data does not satisfy the constraint?
- a) Yes
 - b) No

Section B: Structured Questions

[43]

1. Describe the role of each of the following database objects: [10]
- a) View
 - b) Index
 - c) Package
 - d) Trigger
 - e) Sequence
2. You have recently been appointed as a Junior Database Administrator in an organization. The finance department requires a new application that will rely on the Oracle database to manage sensitive financial data. Currently there is an older version of Oracle running on the servers. Your task is to recommend, install, and configuring the server to run the new version which is Oracle server Database 10g software to support this application. Discuss the steps you will undertake to correctly accomplish the tasks defined above. [5]
3. As a Junior Database Administrator setting up Oracle Database 10g for a finance application, one key task is ensuring that the right privileges and roles are granted to users. Explain the difference between roles and privileges with examples. [4]
4. Discuss any four benefits of assigning roles to users in database administration.

- [8]
5. When creating a user, the administrator may choose the appropriate authentication method based on the environment. List and explain three authentication techniques commonly used in database management. [6]
6. When creating users, why is it important to assign them temporary tablespaces? [2]
7. Explain the potential consequences of not assigning temporary tablespaces to users during their creation. [6]
8. Describe the relationship between a user and a schema? [2]

Question 4

1. As ad database administrator for **Tunga group of companies** you manage a huge **Sales** table containing multiple rows of their sales information. The sales table includes the following columns:
- Sale_ID (Primary Key)
 - Customer_ID
 - Product_ID
 - Sale_Date
 - Total_Amount
 - Region

On a weekly basis you run a query to generate weekly report using the following query:

```
SELECT Region,
SUM(Total_Amount) AS Total_Sales
FROM Sales
WHERE Sale_Date BETWEEN TO_DATE ('2025-04-01', 'YYYY-MM-DD')
AND TO_DATE ('2025-04-07', 'YYYY-MM-DD')
GROUP BY Region
```

- a) Identify the columns that you would index to improve the performance of the query and justify your answer. [4]
- b) Describe the drawbacks of creating indexes in the database [4]
- c) Explain any 2 instances where Oracle or any other DBMS automatically create indexes? [4]

Section C: Database SQL commands

[17]

1. Describe what each of the following SQL commands achieve? [10]
- i. CONNECT erasmus/kermit as sysdba
 - ii. SELECT name from v\$databases
 - iii. LSNRCTL>set cur backup
 - iv. STARTUP NOMOUNT

v. CREATE PROFILE app_user2 LIMIT PASSWORD_GRACE_TIME 10;

2. Describe the function of the Fine-Grained Audit Policy named *audit_emps_salary* below.

[7]

```
dbms_fga.add_policy (  
  object_schema    => 'hr',  
  object_name      => 'employees',  
  policy_name      => 'audit_emps_salary',  
  audit_condition  => 'dept_id=10',  
  audit_column     => 'salary',  
  handler_schema   => 'secure',  
  handler_module   => 'log_emps_salary',  
  enable           => TRUE,  
  statement_types  => 'select');
```

<<<<<<< END >>>>>>>>

