ΠΑΜΙΒΙΑ UΠΙVERSITY
OF SCIENCE AND TECHNOLOGY
FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE, BACHELOR OF INFORMATION TECHNOLOGY	
QUALIFICATION CODE: 07BACS, 80BSAN, 80BSSD	LEVEL: 7
COURSE: DATABASE ADMINISTRATION	COURSE CODE: DBA712S
DATE: NOVEMBER 2019	SESSION: 1
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	MR. ISAAC NHAMU
MODERATOR:	DR. AMER DHEEDAN

THIS QUESTION PAPER CONSISTS OF 5 PAGES
(Excluding this front page)

INSTRUCTIONS

9. Answer ALL the questions in Sections A, B and C.
10. Write clearly and neatly.
11. Number the answers clearly.
12. 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

2. Non programmable Scientific Calculator.

1. Your multitenant database has three pluggable databases: PDB1, PDB2, and PDB 3. Which **two** RMAN commands may be used to backup only the PDB1 pluggable database?
   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 root container
   E. BACKUP PLUGGABLE DATABASE PDB1 while connected to the PDB2 container

2. Which of the following is the preferred way to recover a database after a transaction in progress terminates abnormally?
   A. Rollback
   B. Rollforward
   C. Switch to duplicate database
   D. Reprocess transactions

3. What is the effect of specifying the "ENABLE PLUGGABLE DATABASE" clause in a "CREATE DATABASE" statement?
   A. It will create a multitenant container database CBD with only the root opened.
   B. It will create a CBD with root and seed opened and one CBD mounted.
   C. It will create a CBD with root opened and seed in read only.
   D. It will create a CBD that must be plugged into a n existing CBD
   E. It will create a CBD with root opened and seed mounted

4. Which one if the following is stored in the operating system hosting a database?

   A. Redolog file,
   B. Data file,
   C. Control file,
   D. All of the above.

5. Why is it better to use an INTEGRITY CONSTRAINT to validate data in a table than to use a STORED PROCEDURE?

   A. Because an integrity constraint is automatically checked while data is inserted into or updated in a table while a stored procedure has to be specifically invoked
   B. Because the stored procedure occupies more space in the database than an integrity constraint definition
   C. Because a stored procedure creates more network traffic than a integrity constraint definition

6. Which **two** statements are true about the logical storage structure of an Oracle database?

    A. An extent contains data blocks that are always physically contiguous on disk.
    B. An extent can span multiple segments.
    C. Each data block always corresponds to one operating system block.
    D. It is possible to have a tablespace of different block sizes
    E. A data block is the smallest unit of I/O in data files.

7. Which one of the following SQL commands is a DCL command?

    A. GRANT
    B. SELECT
    C. DROP
    D. MERGE
    E. LOCK TABLE

8. If both data and database administration exist in an organization, the database administrator is responsible for which of the following?
    A. Data modeling
    B. Database design
    C. Metadata
    D. All of the above.

9. A data file can belong to more than one Tablespace.

    A. TRUE
    B. FALSE

10. A Transaction ends

    A. Only when it is Committed
    B. Only when it is Rolled back
    C. When it is Committed or Rolled back
    D. None of the above

11. What is read into the database buffer cache from data files?
    A. Rows
    B. Changes
    C. Blocks
    D. SQL
    E. Data file

12. PL/SQL does not contain the following objects
    A. Trigger
    B. Function
    C. Index
    D. Package Body
    E. Procedure

13. A database view is logically stored in a database.
    A. True
    B. False

Section B: Structured Questions

Question 1

a. Describe the following: [10]

    i.   MTBF
    ii.   PGA
    iii. SID
    iv.   SAVEPOINT
    v.   Segment

b. Identify which Oracle object names are invalid or invalid from the one listed below.
                                                                    [5]
    i.   "Old School"
    ii.   Lock
    iii. LifeisGood_LG
    iv.   MORE
    v.   Amount#$

Question 2

Indexes are regarded as one that needs to be carefully administered by DBAs.

    a. What is the purpose of indexes in Databases? [2]

    b. Outline two drawbacks of indexes. [4]

    c. Describe two instances where indexes are automatically created. [4]

Question 3

Database technologies have changed significantly over the past few years. The tasks that are performed by DBAs have also changed somewhat with the advent of these newer technologies. Outline at least 5 challenges that modern DBAs face that differ from the challenges faced 10 years ago. [10]

Question 4

    a. Distinguish between Roles, Privileges (System and Object), and Profiles as used in databases such as the Oracle database. In your answer outline scenarios/examples where each of the above is used. [12]

    b. Give an SQL command for granting SELECT privilege to user SCOTT on the table EMPLOYEES in the HR schema. [3]

Question 5

SQL *Loader can load data into an Oracle database using Conventional Path method or Direct Path method. You can specify the method by using DIRECT command line option. If you give DIRECT=TRUE then SQL loader will use Direct Path Loading otherwise, if omit this option or specify DIRECT=false, then SQL Loader will use Conventional Path loading method.

    a. Outline six reasons why direct path loading is faster and/or six reasons why conventional path loading of data into a database is slow. [12]

    b. State any three restrictions of using direct path loading. [3]

Section C: Database SQL commands

Question 1

As a DBA you have been asked to load the records of 3562 inmates who are saving time at a local prison into a database from csv file. You are given that the name of the file that stores the data to be moved is `Prisoner_Info.csv` and that this file has been saved on your local operating system in the folder `c:\PRISONERS>` by your assistant. The file contains the following information about each prisoner: Their prisoner number, Full name, Date of Birth, and Number of years sentenced. An example entry from the csv file is shown below

```
SS09875, Diego Loic, 12/10/1972, 10
```

a. Write SQL statements to create the structure for the table `Pensioner_Details` in your Database that is going to be used to store the content of the file `Prisoner_Info.csv`. call the table `Pensioner_Details`. Use relevant field names and data types with realist field sizes. [4]

b. Create a control file that is going to be used to export the contents of the file `Prisoner_Info.csv` into the Table `Prisoner_Details`. Comment on each line of the control file to explain what each line is doing. [8]

c. Give the command that is going to be typed at `c:\PRISONERS>` to effect the loading of the data from the csv file to the database table `Prisoner_Details`. (Suppose you are logged in as `yourname` with password `yoursurname`. Also suppose that the control file is saved as `Prisoners.ctl`.) [3]

Question 2

Give the SQL commands for achieving the following.

i. Connect to the pluggable database NOVEXAMPDB using the user *student* and password *easyExam!*.

ii. Show the status of the current listener.

iii. Start-up the database so that it is in mount mode. [5]

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

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