

SOUTH EASTERN UNIVERSITY OF SRI LANKA
BACHELOR OF BUSINESS ADMINISTRATION & COMMERCE EXAMINATION – 2005/2006
THIRD YEAR, SEMESTER – II, APRIL 2007

MIS 3106R – DATABASE DESIGN AND DEVELOPMENT

Answer all Questions.

Time: 03 hours

(01)

- i. State whether the following statements are *true* or *false*. If the answer is *false*, explain why
- a) Repeating Columns are allowed in the relational model.
 - b) An aggregate function can be used in the WHERE clause.
 - c) ORDER BY clause can be used in sub-query
 - d) The NVL function is used to substitute a value in place of NULLs
 - e) Privileges can be granted on columns
- (05 Marks)
- ii. Compare and contrast the three phases of database design?
- (06 Marks)
- iii. Discuss each of the following terms briefly
- a) Data & Information
 - b) Database
 - c) Database Management Systems
- (06 Marks)
- iv. Briefly discuss the advantages and disadvantages of Database Management Systems
- (03 Marks)

(02)

- i. Briefly describe the five components of the Database Management System environment.

(04 Marks)

- ii. Briefly Discuss the following roles in the database environment

-
- a) Database Administrator
 - b) Application Developer
 - c) Physical Database Designer
 - d) End-Users

(08 Marks)

- iii. Write Short Notes on the following

- a) Data Definition Language (DDL)
- b) Data Manipulation Language (DML)
- c) Degree
- d) Cardinality

(08 Marks)

(03)

- a) What is meant by the term Client-Server architecture? and what are the advantages of this approach?

(03 Marks)

- b) What do you mean by **normalization**? How does **second** normal form differ from **third** normal form? To support the answer give an example.

(05 Marks)

- c) Discuss the differences between four joins types? Give examples to illustrate your answer?

(08 Marks)

- d) Explain how the GROUP BY clause works? What is the difference between the WHERE and HAVING clauses?

(04 Marks)

(04) Use Oracle 9i sample tables to answer the following questions

a) What do you mean by a Sub-query? To support the answer give an example?

(04 Marks)

b) Write a query to display the employee name, department number, and salary of any employee whose department number and salary match the department number and salary of any employee who earns a commission

(04 Marks)

c) Create a query to display the name, hiredate, and salary for all employees who have both the same salary and commission as Scott.

(04 Marks)

d) Explain what is wrong with this statement?

```
SQL> Select empno, ename
2     From emp
3     Where sal=
4         (Select MIN (sal)
5         From emp
6         Group By deptno);
```

(04 Marks)

e) Explain what is wrong with this statement?

```
SQL> Update emp
2     SET deptno = 55
3     Where deptno = 10;
```

(04 Marks)

(05)

a) Write short notes on the following

- i. Rollback & Commit
- ii. Constraints in Oracle
- iii. Privileges in Oracle

(06 Marks)

b) DIGITAL WORLD is newly established video shop which has decided to maintain a database about their customers and transaction done.

The following information has given to you for the purpose of creating a database. Suppose that you are appointed as database developer in the DIGITAL WORLD, based on the following tables answer the questions given below

Member_Table

Column Name	Type	Size	Description
Mem_Id	Number	6	Member Identification
First_Name	Char	20	Character Data, Not Null
Last_Name	Char	20	Character Data, , Not Null
Address	Char	30	Character Data
City	Char	20	Character Data
Phone	Number	10	Number Data
Join_Date	Date	8	Date Type, Not Null

Title_Table

Column Name	Type	Size	Description
Title_Id	Number	4	Title Id of the Film
Title	Char	25	Title of the Film, Not Null
Description	Char	30	Description of the Film
Rating	Number	4,2	Rate of the Film, Not Null
Release_Date	Date	8	Release date of the Film

Rental_Table

Column Name	Type	Size	Description
Rental_Date	Date	8	Film Rented Date, Not Null
Mem_Id	Number	6	Member Identification
Title_Id	Number	4	Title Id of the Film
Expire_Date	Date	8	Film Return Date
Release_Date	Date	8	Release date of the Film

Reservation_Table

Column Name	Type	Size	Description
Reservation_Date	Date	8	Film Reservation Date, Not Null
Mem_Id	Number	6	Member Identification
Title_Id	Number	4	Title Id of the Film

-
- i. Identify the Constrains (Primary key & Foreign key) and write SQL Statements to create the above four tables by giving proper data types.
(06 Marks)
- ii. Insert 2 records into the **Member_Table** table
(04 Marks)
- iii. Write a query to update and Delete any two records from the **Mem_Table** and **Title_Table**.
(04 Marks)