

## SOUTH EASTERN UNIVERSITY OF SRI LANKA

FINAL EXAMINATION IN BACHELOR OF BUSINESS ADMINISTRATION /  
BACHELOR OF COMMERCE - 2008 / 2009

SEMESTER – I, MAY – 2010

MIS 4113 – ADVANCED RELATIONAL DATABASE MANAGEMENT  
SYSTEM

Answer all questions.

Time: 03 Hours

1.

- a) Illustrate the differences between hierarchical and network data models. Explain why relational data model is a better choice over the above two models.
- b) Explain the following relational operators with examples.
- i. Selection
  - ii. Projection
  - iii. Join
- c) Consider the following two relations:

DEPARTMENT

Department	Deptnumber	Managerid	Managename
Research	5	618567	Srinath
Administration	4	723152	Akram
Headoffice	1	452382	Nimal

PROJECT

Pname	Pnumber	Plocation	Deptnum
Productx	1	Kurunagala	5
Producty	2	Kandy	5
Productz	3	Galle	5
Computerization	10	Matara	4
Reorganization	12	Colombo	1

Determine the EQUI-JOIN of the two relations and obtain the NATURAL-JOIN of them

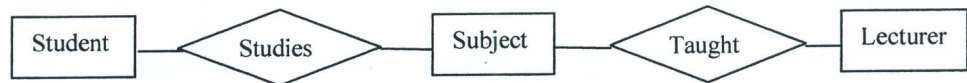
- d) Why is the administration of a database system required? What are various functions associated with database administration?

(20 Marks)

2

- a. Explain the following languages with respect to DBMS
- i. DDL
  - ii. DML
  - iii. VDL
- b. What is meant by Referential Integrity.? Give an example that violates this rule
- c. Consider the following relational database schema:

Student (name,registration\_number,birth\_date,address)  
Studies (subject\_code,registration\_number,marks,grade)  
Subject (subject\_code,title,year,no\_of\_tutorials,no\_of\_lectures)  
Taught (subject\_code,lecture\_name,no\_of\_hours)  
Lecture (name,dept)



Write SQL queries to perform the following:

- i. List the registration numbers and grades of those students studying "PM11".
- ii. List the names of lecturers teaching "CS11".
- iii. List the names of students taught by the lecturer "Ahmed".
- iv. List the names and registration numbers of those students who obtained marks greater than the average mark for the subject "CS11".

(20 Marks)

3

- a) What is a View in SQL? How is it defined? How are Views typically implemented?
- b) What are the differences between the procedural and non-procedural languages? Describe the main features of PL/SQL.
- c) What is a Cursor? Describe the different types of cursors and their functions with examples.
- d) Write down a General syntax to illustrate the following in PL/SQL.
- i. Variable
  - ii. If then else
  - iii. For loop

(20 Marks)

4

- a) There are enhanced features being used in SQL\*PLUS compared to SQL. Differentiate SQL\*PLUS with SQL?
- b) What are main features of the object Oriented Database Management System? How is this advantageous over RDBMS?
- c) Explain how the "GROUP By" clause works? What is the difference between WHERE and HAVING clauses? Explain them with the help of example for each.
- d) What do you mean by Sub-query?  
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.

(20 Marks)

5

- a. What is a Trigger? Discuss the different types of triggers and their purposes.
- b. Write notes on the following:
  - i Database Buffer
  - ii Redo-Log-Buffer
  - iii Log Archive Buffer
- c. What is Stored Procedure? Explain in brief the principal of stored procedure and discuss the contribution with PL/SQL.
- d. Discuss the Data Dictionary in DBMS.

(20 Marks)