

SOUTH EASTERN UNIVERSITY OF SRI LANKA

BACHELOR OF BUSINESS ADMINISTRATION / BACHELOR OF COMMERCE

2007/2008

THIRD YEAR, SEMESTER -II, AUGUST/SEPTEMBER -2009

MIS 3206 DATABASE DESIGN AND DEVELOPMENT

Answer all questions

Time : 03 hours

01.

- a) What is Database Normalization? Explain in brief the 1st, 2nd, and 3rd Normal Forms (05 Marks)
- b) Go through the figure given below carefully. It is an invoice from a fictitious company called Fair Deal Fabrication (Pvt) Ltd.

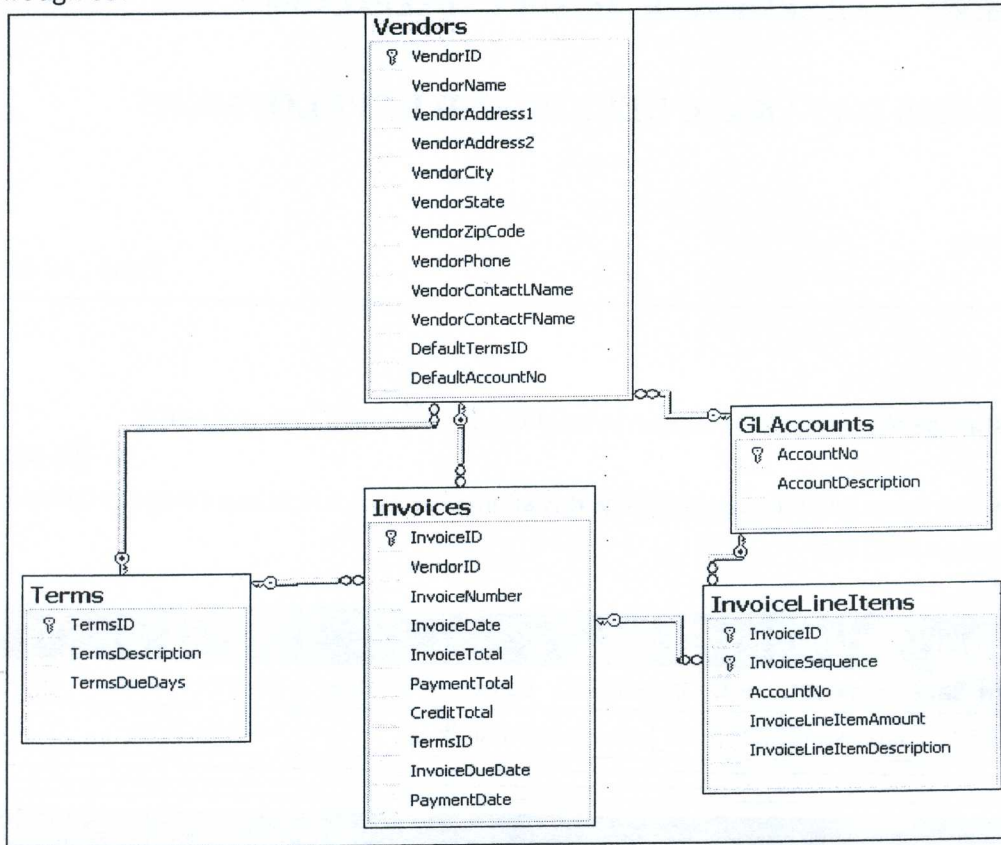
Fair Deal Fabrication (Pvt) Ltd.				
1234, Main Road, Sainthamaruthu, P.O Code 32280, Eastern Province			Invoice Number: 101-1088	
Tel: +94672255067	Fax: +94672255067	www.fairdeal.lk	Invoice Date: 10/07/2009	
Part No	Qty	Description	Unit Price	Line Amount
CUST345	12	Design Service, hr	100.00	1200.00
453433	7	Baling wire, 25x2ft roll	79.90	559.30
32433	4375	Duct tape, black, yd	1.09	4768.75
328771	2	Rubber tubing, 100ft roll	4.79	9.58
CUST281	7	Assembly, hr	75.00	525.00
CUST917	2	Testing, hr	125.00	250.00
Your Salesperson:			Aris Samsueen, ext 4512	Rs. 7,557.83
Accounts receivable:			Sanath Jayasuriy, ext 4003	PLEASE PAY THIS AMOUNT
Thanks for your business!				

The management of the company has appointed you as the database developer and your first task is to develop a database to track inventory of items available. The information system to be created is supposed to have details about customers, suppliers, items, invoices, invoice details, etc. By applying the

Normalization knowledge you have draw a Database Diagram for the database base to be created. You can add as many fields as you need based on your knowledge. All relationships must be shown clearly. (15 Marks)

02.

You can use the Database Diagram for Accounts Payable database given below to answer the question from 02 through 05.



- To extract all details from Invoices table.
- To get details about an invoice of which the InvoiceID is 17.
- To get all details from Vendors table sorted by State in descending order.
- To get details about Vendor's ID, Name, address details in one column, and Phone Number.
- To get details about vendors who are not from states CA, NV, NY (imagine that the Vendor state column contains two lettered abbreviation for cities).
- To retrieve all invoice details from invoice table which have Invoice Total more than 1000 and Invoice date after 01-01-2009.
- To retrieve details about vendors whose names start in SA or AM
- To retrieve details about vendors whose cities that start with "NA" up to "NJ" but not (imagine that the vendor state column might contain state abbreviations that start from NA through NZ)

(20 Marks)

03.

- a) What is a Join in SQL? What are its types? Explain in details using the Database Diagram given. (05 Marks)
- b) Write an SQL Query that retrieves VendorID, his name, his address (address1, address2, and City), and their corresponding InvoiceID, InvoiceDate, and InvoiceTotal. (03 Marks)
- c) Write an SQL Query that retrieves all VendorID, his name, his address (address1, address2, and City), and InvoiceID, InvoiceDate, and InvoiceTotal. (03 Marks)
- d) Write an SQL Query that retrieves VendorID, his name, his address (address1, address2, and City), and all InvoiceID, InvoiceDate, and InvoiceTotal. (03 Marks)
- e) You are given the following tables.

Departments Table

	DeptName	DeptNo
1	Accounting	1
2	Payroll	2
3	Operations	3
4	Personnel	4
5	Maintenance	5

Employees Table

	EmployeeID	LastName	FirstName	DeptNo
1	1	Smith	Cindy	2
2	2	Jones	Elmer	4
3	3	Simonian	Ralph	2
4	4	Hernandez	Olivia	1
5	5	Aaronsen	Robert	2
6	6	Watson	Denise	6
7	7	Hardy	Thomas	5
8	8	O'Leary	Rhea	4
9	9	Locario	Paulo	6

Projects

	ProjectNo	EmployeeID
1	P1011	8
2	P1011	4
3	P1012	3
4	P1012	1
5	P1012	5
6	P1013	6
7	P1013	9
8	P1014	10

Write down an SQL query that retrieves DeptName, LastName, ProjectNo.

(06 Marks)

04.

- a) Briefly explain the of ROLLUP and CUBE operators. (05 Marks)
- b) What are aggregate functions? Explain six basic aggregate functions available in MS SQL Server 2005 briefly. (05 Marks)
- c) What are Subqueries? Where can they be used in MS SQL Server 2005? Briefly indicate why they are used in each occurrences. (04 Marks)
- d) Write down an SQL query that retrieves InvoiceNumber, InvoiceDate, InvoiceTotal from Invoices table for vendors who are from "CA" state. (03 Marks)

- e) Write down an SQL query that retrieves VendorID, VendorName, VendorState that don't have invoices in the Invoices table.

(03 Marks)

05.

- a) Write down the SQL statement to create a table StudentInfo that includes the following columns. You can add more columns that are needed.

StudentInfo	
ID	Primary Key
Name	Not Null
Street	
City	
NIC Number	
Date of Birth	
Gender	

(06 Marks)

- b) Write down the SQL Statement to create a View of vendors who have invoices. The view should include VendorID, VendorName, VendorCity and VendorState columns.

(04 Marks)

- c) What is a data types? Why is it important in database development? Briefly explain.

(06 Marks)

- d) Imagine that you have developed a database using a PC at your home. Now you need to attach it a PC at your workplace running SQL Server 2005. Clearly write down the command sequence that you will follow to attach that database file to that PC at your workplace using SQL Server Management Studio.

(04 Marks)