INTI International University & Colleges

FINAL
Examination Paper

(COVER PAGE)

Session	:	**January 2016**
Programme	:	Diploma In Information And Communication Technology (DICTN)
Course	:	**ICT1104: Database Management**
Date of Examination	:	March 9, 2016 (Wednesday)
Time	:	11.00am – 1.00pm Reading Time : Nil
Duration	:	2 Hours

Special Instructions :

Answer any **FIVE (5)** questions.

Materials permitted :

Nil

Materials provided :

Nil

Examiner(s)	:	**Ms. Koo Lee Chun** and Mr. Tang Yang Tze
Moderator	:	Ms. Noor Hasrina

This paper consists of 4 printed pages, including the cover page

DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY (DICTN)
ICT1104: DATABASE MANAGEMENT
FINAL EXAMINATION: JANUARY 2016 SESSION

Instructions: This paper consists of **SIX (6)** questions. Answer any **FIVE (5)** questions in the answer booklet provided. All questions carry equal marks.

Question 1

(a) Explain each of the following terms:
(i) Database
(ii) DBMS.
(6 marks)

(b) Specify the role and responsibilities of Database Administrator (DBA)
(6 marks)

(c) Explain **FOUR (4)** advantages of using database systems.
(8 marks)

Question 2

(a) Briefly explain the concept of data model (database model).
(5 marks)

(b) Given the following scenario:

FastPost prides itself on having up-to-date information on the processing and current location of each shipped item. To do this, FastPost relies on a company-wide information system. Shipped items are the heart of the FastPost product tracking information system.

Shipped items can be characterized by item number (unique), weight, dimensions, insurance amount, destination, and final delivery date. Shipped items are received into the FastPost system at a single retail center. Retail centers are characterized by their type, uniqueID, and address. Shipped items make their way to their destination via one or more standard FastPost transportation events (i.e., flights, truck deliveries). These transportation events are characterized by a unique scheduleNumber, a type (e.g, flight, truck), and a deliveryRoute

Present the above data model in a :
(i) conceptual ERD (Entities and relationships only)
(5 marks)

(ii) logical ERD (Entities, relationships, attributes, primary key and foreign key)
(10 marks)

Question 3

(a) What is "normalization" in the context of database design?

(2 marks)

(b) List at least **THREE (3)** update anomalies and provide an example to support each of them based on given relation below.

Student#	Advisor	Adv-Room	Class#	Class Capacity
1022	Jones	412	101-07	30
1022	Jones	412	143-01	40
4123	Smith	216	201-01	30
4123	Smith	216	211-02	40

(6 marks)

(c) Given the below relation :

Customer_ACCOUNT(customerID, customerName,customerContactNum,{accountNumber, accountType, balance, accountStatus, BankID, BankAddress})

Normalize the relation to 3NF. Show your working steps clearly (including functional dependencies and explanation).

(12 marks)

Question 4

(a) Define the following terms:

(i) Data

(2 marks)

(ii) Information

(2 marks)

(b) Briefly explain the **THREE (3)** differences between primary key and foreign key in a relational database.

(6 marks)

(c) Name **FIVE (5)** Microsoft Access data types. Provide ONE example each to support your answer.

(10 marks)

Question 5

(a) Explain **FOUR (4)** factors that you should consider when designing a data entry form.

(8 marks)

(b) Suggest any **FOUR (4)** types of form controls that allow user to enter data. Describe each of these controls.

(12 marks)

Question 6

Consider the following relations:

Customers (Cno, name, IC, company, address, contact)
Orders (Ono, date, Cno, total, remarks)
Order_Product (Ono, Pcode, quantity, subtotal)
Products (Pcode, name, description, category, price)
Payments (Pno, date, Cno, amount, description, Ono)

(a) Define the following request in design grid form (Query Design View)

(i) List all the customer number and name based on customer number entered by the user.

(4 marks)

(ii) Update all the product price with 5% increased.

(3 marks)

(iii) Display and calculate the total payment amount of the year 2015.

(6 marks)

(b) Write an SQL statement to perform the following task:

(i) Select all the order number, product code with product order quantity more than 50 for all product code begin with "P".

(4 marks)

(ii) Insert a new product with product code "P123"

(3 marks)

~THE END~