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FINAL
Examination Paper

(COVER PAGE)

Session : January 2015

Programme : Diploma In Information And Communication Technology (DICTN)

Course : ICT1104 : Database Management

Date of Examination : March 12, 2015

Time : 2:00pm – 4:00pm Reading Time: Nil

Duration : 2 Hours

Special Instructions :

Answer any **FOUR (4)** questions.

Materials permitted : Nil

Materials provided : Nil

Examiner (s) : Mr. Tang Yang Tze, Koo Lee Chun.

Moderator : Ms. Leong Siok Jen.

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

INTI INTERNATIONAL COLLEGE SUBANG

DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY (DICTN)

ICT1104: DATABASE MANAGEMENT

FINAL EXAMINATION: JANUARY 2015 SESSION

Instructions: This paper consists of **SIX (6)** questions. Answer any **FOUR (4)** questions in the answer booklet provided. All questions carry equal marks.

Question 1

- (a) Differentiate between *data* and *information*. (4 marks)
- (b) Identify and describe **THREE (3)** basic components of database system. (9 marks)
- (c) Explain any **FOUR (4)** advantages of database system as compared to file-based system. (12 marks)

Question 2

- (a) Define the *primary key* and *foreign key* in relational model. (4 marks)
- (b) Explain the first, second and third normal forms (1NF, 2NF and 3NF) in normalization. (6 marks)
- (c) Given the following relation and functional dependencies, normalize the relation to third normal form (3NF). Explain your working steps.

R (p1, a1, p2, p3, p4, a2, a3, a4, a5, m1, m2, m3, m4, x1, x2, x3, x4, x5, x6)

fd1: p1 → p2, p3, p4

fd2: a1 → a2, a3, a4, a5

fd3: m1 → m2, m3, m4

fd4: x1 → x2, x3, x4, x5, x6

(15 marks)

Question 3

- (a) Convert the following relations into Entity-Relationship (ER) model. Specify the foreign keys, and relationships.

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

(15 marks)

- (b) Define the *entity integrity rule* and *referential integrity rule*.

(4 marks)

- (c) Explain the *view mechanism* in database system. Support your explanation with a suitable example.

(6 marks)

Question 4

Given the following tables of a company's database:

Staff (staffid, name, dob, gender, position, salary, deptcode)
 Department (deptcode, name, address, phone, fax, description)
 Training (refno, title, date, duration, venue, trainerid, description)
 Trainer (trainerid, name, specialty, status, remarks)

Define a query (in Query Design format) for each of the following requests.

- (a) List the id and names of the trainers with the status of 'GOOD'.

(6 marks)

- (b) List the titles of all training conducted in the year 2014.

(6 marks)

- (c) Group the training records by trainers. List the trainer names and numbers of training for each trainer.

(8 marks)

- (d) Change the date of the training with reference no 'TR000312' to 25-Jun-2014.

(5 marks)

Question 5

- (a) List any **SEVEN (7)** basic data types supported by Access 2010. (7 marks)
- (b) Explain the use of *Input Mask*, *Default Value* and *Validation Rule* properties in Access database. For each property, give a suitable example. (12 marks)
- (c) List and describe **TWO (2)** types of relationships that are identifiable by Access 2010. (6 marks)

Question 6

- (a) Differentiate between *Forms* and *Reports* in Access database. (6 marks)
- (b) Identify and describe **FIVE (5)** types of form controls for data entry. (15 marks)
- (c) Explain the use of single report and grouped report. (4 marks)

~ The End ~

ICT1104 (F)/January 2015 session/Tang Yang Tze/ (dd/mm/yy)