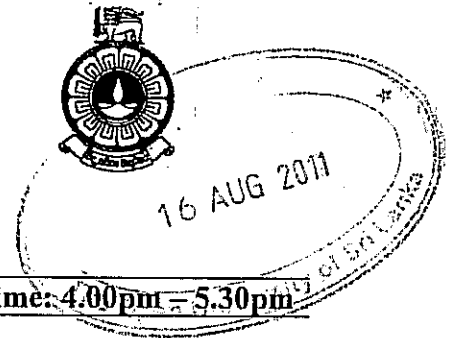


THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. Degree Programme: LEVEL 05
Department of Mathematics and Computer Science
OPEN BOOK TEST 2010/2011
CSU3278 – DATABASE MANAGEMENT SYSTEMS
DURATION: One and Half hours



Date: 02/03/2011

Time: 4.00pm – 5.30pm

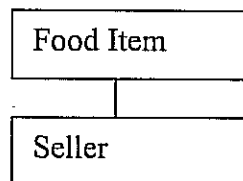
Answer All Questions

QUESTION 1

- 1.1) What is the difference between DATA and INFORMATION? Briefly explain using an example.
- 1.2) Explain the Role of a Database Administrator and a Database Designer.
- 1.3) What is a Database Management System (DBMS)? Explain 3 functions of a DBMS.
- 1.4) Explain the term DATA INDEPENDENCE.
- 1.5) Using Examples, explain 3 kinds of data Anomalies that can exist because of the data redundancy.

QUESTION 2

- 2.1) What is a database model? Explain the differences of the conceptual and implementation database models.
- 2.2) By means of an example, explain the terms RELATION, TUPLE, ATTRIBUTE in the context of relational data model.
- 2.3) Give three types of relationships that can exist in a relational database model giving an example for each relationship type.
- 2.4) Draw a suitable Network Database Diagram using the example of multiple food items sold by multiple sellers. Use at least 4 food items and 3 sellers with food item as parent.



QUESTION 3

A system is to be developed to record and monitor the activities of a sports club.

A sports club is providing playing court facilities to its members who like to play badminton, cricket, tennis and table tennis. Membership number, membership type (life, annual), name, address, date of birth, telephone and e-mail address are the basic information stored about a member of the club. One member can participate in a maximum of 3 sports. Members can form teams in order to play in sports tournaments.

Sports club is having five badminton courts, three tennis courts, two cricket practice courts, four table tennis courts. Members have to book the facilities in order to use them for practicing purposes. The booking date, required date and the time duration also need to be tracked. One member can book only one court at a time, whereas a team of members can book up to 5 courts at a time.

Sport club organizes tournaments on badminton, tennis and table tennis (for members only). Each tournament consists of a group of matches which is played in all the relevant courts. The tournament information, match number, match status (single / double), match status (prelim / quarter final / semi final / final), players and win/loss/draw information need to be recorded about a match.

- 3.1) Based on the above information list out the possible entities and relationships between them in the following tabular format or any other clear format.

Entity 1	Relationship (action verb)	Connectivity (1:1, 1:M)	Entity 2

- 3.2) Draw the attributes corresponding to each of the Entity using appropriate symbols.
- 3.3) Draw a Complete E-R Diagram for above description showing all Entities, Relationships and types, Cardinalities. (Do not draw attributes in the diagram)

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