King Saud University
College of Computer and Information Sciences
Computer Science Department
CSC380: Introduction to Database
Instructor: Dr. Kamal Haouam

Midterm: 1   Monday: 15/10/2012 Time: 90 mn

Question: 1 Marks (5)
Encircle True or False on answer sheet provided to you for questions 1 to 10:

1. A database application is a system program that is used to perform a series of activities on behalf of database users. (True)

2. Data model does not describe the high-level entities in an organization and the relationship between these entities.(False)

3. A database is a self-describing collection of integrated records. (True)

4. Data that describes the properties and context of user data is known as Metadata. (True)

5. Entity type that is not existence-dependent on some other entity type is called a weak entity. (False)

6. The most common degree for relationships is binary. (True)

7. A user of a database system can be an entity. (False)

8. In DBMS architecture the conceptual level does not present a logical view of the entire database. (False)

9. An advantage of the database approach is the creation of maximum data redundancy. False

10. A database administrator designs, constructs, and manages the databases. True

Question: 2 Marks (5)
For following question 1 to 10 encircle only one correct answer on the answer sheet provided to you.

1. The hierarchical data model organizes data in a _____structure.
a) Tree b) Object Relational c) Object Oriented d)Relational

2. The first stage in the design of a database is to define the _____view.
a) External b) Conceptual c) Internal d) Physical

3. A software system that enables users to define, create, maintain, and control access to the database is called_____.
a) File System b) Operating System c) DBMS d)Application Program

4. Primary key attribute should contain_____values.
a) Duplicate b) Unique c) Single d) Null

5. Degree of a relationship is represented by the number of _____.
a) Relationship b) Users c) Entities d) Keys

6. Recursive relationship is of degree _____.
a) Quaternary b) Binary c) Ternary d) Unary

7. Entity type that is existence – dependent on some other entity type is called _____.
a)Strong Entity b) Weak Entity c) Parent Entity d) Zero Entity

8. Oracle is a _____.
a) DBMS b) Database c) Tuple d) Relation

9. Database management systems are intended to _____.
a)eliminate data redundancy b) establish relationship among records in different files
c)manage file access d)maintain data integrity e) all of the above

10. The language used application programs to request data from the DBMS is referred to as the _____.
a) DML b) DDL c) query language d) any of the above e) none of the above

Question: 3 Marks (5)

Match the term with the definition:

Term		Definition	
1.	Database design	a.	Represents database visually
2.	Record	b.	Program(s) used to interact with a database
3.	DBMS	c.	Duplication of data by storing it on more than one table
4.	Relationship	d.	Rule that the data in a database must adhere to
5.	Redundancy	e.	Characteristic or property of an entity
6.	Attribute	f.	Structure to store information about various types of entities, their attributes and the relationship among them
7.	E-R diagram	g.	Association between entities
8.	Data independence	h.	Contains information about a single entity in a table
9.	Database	i.	Determine the structure of the tables in the database
10.	Integrity constraint	j.	Allows changes in database structure without having to modify programs

Answer:

1. i   6. e
2. h   7. a
3. b   8. j
4. g   9.f
5. c   10.d

Question: 4 Marks (15)

Projects, Inc., is an engineering firm with approximately 500 employees. A database is required to keep track of all employees, projects assigned, and departments worked in. Every employee has a unique number assigned by the firm, required to store his or her name and date of birth. If an employee is currently married to another employee of P rojects, Inc., the date of marriage and who is married to whom must be stored; however, no record of marriage is required if an employee's spouse is not also an employee. Each employee is given a job title (for example, engineer, secretary, and so on).
An employee does only one type of job at any given time, and it is only needed to retain information for an employee's current job .
There are 11 different departments, each with a unique name. An employee can report to only one department. Each department has a phone number.
To procure various kinds of equipments, each department deals with many vendors. A vendor typically supplies equipment to many departments. It is required to store the name and address of each vendor and the date of the last meeting between a department and a vendor.
Many employees can work on a project. An employee can work on many projects. Projects are distinguished by project number, and the estimated cost of each project must be stored.

Draw an ER diagram that captures the information about the Projects, Inc. Underline primary keys and show the total participation.