## Multiple Choice

1. Which of the following is not a general function of any application program?
2. Data storage
3. Presentation logic
4. Data access logic
5. Linked-list modules
6. Application logic

Ans: d

Reference: Introduction

Difficulty: hard

1. The two basic formats for data storage consist of which of the following?
2. Spreadsheets and documents
3. Files and databases
4. Databases and presentations
5. Flash and web forms
6. ERDs and Use cases

Ans: b

Reference: Data Storage Formats

Difficulty: hard

1. Which of the following is an open source DBMS?
2. Microsoft Access
3. SQL Server
4. MySQL
5. Excel
6. CASE

Ans: c

Reference: Data Storage Formats

Difficulty: medium

1. Juan is using a file that is created by an older, legacy system. It is likely that the data is what?
2. Unusable
3. In a proprietary format
4. In a standard format (like comma separated value)
5. Is sorted by customer’s middle name
6. In an object-oriented structure like Ariel

Ans: b

Reference: Files

Difficulty: medium

1. Which of the following is NOT a file type described in the textbook?
2. History files
3. Audit files
4. Look-up files
5. Algebra files
6. Transaction files

Ans: d

Response: Ssee Files

Difficulty: medium

1. This type of file stores “core information that is important to the business” and for the application (such as customer mailing lists).
2. History Files
3. Audit files
4. Master files
5. Transaction files
6. Intelligent files

Ans: c

Reference: Files

Difficulty: hard

1. This type of file is used to update a master file.
2. Roster Files
3. Training files
4. Master files
5. Transaction files
6. Integrated files

Ans: d

Reference: Files

Difficulty: hard

1. This type of file records “before” and “after” images of data as the data gets altered.
2. Intelligent files
3. Audit files
4. Master files
5. Raw files
6. Prime files

Ans: b

Reference: Files

Difficulty: hard

1. Which is NOT a type of database file?
2. Hierarchical databases
3. Relational databases
4. Object databases
5. Multidimensional databases
6. Federal database

Ans: e

Reference: Databases

Difficulty: hard

1. Legacy databases might include \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Master files and transaction files
3. Audit files and look-up files
4. Hierarchical databases and network databases
5. Tree databases and leaf databases
6. Red databases and Green databases

Ans: c

Reference: Databases

Difficulty: hard

1. The most popular type of database today is what?
2. Hierarchical database
3. Tree database
4. Green database
5. Relational database
6. Piecemeal database

Ans: d

Reference: Databases

Difficulty: medium

1. Most relational database systems support which of the following?
2. Referential integrity
3. Pop-up menus
4. Customizable user-interface colors and graphics
5. The ‘three-clicks’ rule
6. Broadband connectivity

Ans: a

Reference: Databases

Difficulty: medium

1. The acronym for the standard language used to access data in relational databases is:
2. ERD
3. CRM
4. ERP
5. BPR
6. SQL

Ans: e  
Reference: Databases

Difficulty: medium

1. New databases collectively referred to as NoSQL databases have appeared in recent years. Which of the following are categorized as a NoSQL database?
2. Document-oriented database
3. Wide column stores
4. Graph databases
5. Extensible record stores
6. Relational Database system

Ans: e

Reference: databases

Difficulty: medium

1. Document-oriented databases have the following characteristics, except which one?
2. Large bit files
3. Audio files
4. Video files
5. Files with uniform structure
6. image files

Ans: d

Reference: Databases

Difficulty: medium

1. Which of the following is not a RDBMS?
2. Oracle
3. NoSQL
4. SQL
5. MySQL
6. None of these

Ans: b

Reference: Databases

Difficulty: medium

1. Which of the following is not a characteristic of Big Data?
2. Huge volume
3. Rapid velocity
4. Great variety
5. All are characteristics
6. None are characteristics

Ans: d

Reference: Databases

Difficulty: medium

1. Which of the following is a concept not generally associated with decision support systems?
2. Data warehouses
3. Data marts
4. Aggregated data
5. Object orientation
6. Multidimensional databases

Ans: d

Reference: Databases

Difficulty: hard

1. In most cases, decision support systems are best at which of the following?
2. Finding particular records that are stored in legacy databases
3. Finding processes that are stored in object databases
4. Finding aggregated data
5. Analyzing audit (or log) files for possible intrusion and security breaches
6. Red and green linked list processing

Ans: c

Reference: Databases

Difficulty: hard

1. Omar is creating an order database for a multiple site car dealership. The data will be fairly simple: names, addresses, city, state, zip code, make of car, model, style, color, etc. Probably the best choice for him would be a \_\_\_\_\_\_\_\_\_\_\_\_\_ database.
2. Multidimensional
3. Hierarchical
4. Legacy
5. Object
6. Relational

Ans: e

Reference: Databases

Difficulty: medium

1. Marco is working for Apple on iTunes and needs to have a database that can store complex data. His best choice might be which of the following?
2. An object database
3. A relational database
4. A red-green database
5. A tree database
6. A spanning database

Ans: a

Reference: Databases

Difficulty: medium

1. FoodTitan is a large grocery store chain in the Chicago, Milwaukee, and the Upper Midwest. Generally their stores have from 18 to 36 checkout lanes with scanners. When somebody scans a bar code, the system is probably using a \_\_\_\_\_ to process the purchased items.
2. Executive support system (ESS)
3. Barcode processing system (BPS)
4. Management information system (MIS)
5. Transaction Processing system (TPS)
6. A grocery store processing system (GSPS)

Ans: d

Reference: Selecting a Storage Format

Difficulty: medium

1. The type of processing system that creates reports for supervisors (and other functional users) probably would be which of the following?
2. Transaction Processing System (TPS)
3. Management Information System (MIS)
4. Executive Support System (ESS)
5. Decision Support System (DSS)
6. Rebate Management System (RMS)

Ans: b

Reference: Selecting a Storage Format

Difficulty: medium

1. Systems that support decision making will probably be which of the following?
2. Do a lot of updating of data
3. Be transaction processing systems
4. Be audit files
5. Use Gantt charts
6. Usually just read data – and often in ad hoc ways

Ans: e

Reference: Selecting a Storage Format

Difficulty: medium

1. The project team is very knowledgeable about relational database management systems. In terms of feasibility, this might be best known as what?
2. Technical feasibility (‘can we build it’)
3. Economic feasibility (‘should we build it’)
4. Managerial feasibility (‘why would we build it’)
5. Graphical feasibility (‘does it fit this project’)
6. Organizational feasibility (‘if we build it, will they use it’)

Ans: a

Reference: Selecting a Storage Format Difficulty: medium

1. The purpose of creating physical ERDs is to do what?
2. Depict the “business view” of the data, but omit any implementation details
3. Normalize the database to third normal form
4. Do a new technology analysis
5. Drive the users nuts
6. Help junior analysts to find the transactions between systems

Ans: a

Reference: Moving from Logical to Physical Data Models

Difficulty: hard

1. Which is not a common data type?
2. Character
3. Text
4. Integer
5. Date
6. Video

Ans: e

Reference: Moving from Logical to Physical Data Models

Difficulty: medium

1. A default value is which of the following?
2. The first value in a table
3. The median value in a table
4. The smallest value in a table
5. A value that specif es what should be placed in a column
6. A mistake made by Dee (aka the name “Dee’s fault”)

Ans: d

Reference: The Physical Entity Relationship Diagram

Difficulty: hard

1. Primary keys are which of the following?
2. The same as default keys (or default values)
3. Unique values for each record in a file or table
4. Elementary values (like ‘primary’ school)
5. Prime numbers in a Fibonacci sequence
6. The same as foreign keys

Ans: b

Reference: The Physical Entity Relationship Diagram

Difficulty: hard

1. When you join two relational database tables together, frequently the primary key in one table will be a(n) \_\_\_\_\_\_\_\_\_\_\_\_ in the other table.
2. Foreign key
3. International key
4. Primary key
5. Linked list
6. Entity

Ans: a

Reference: The Physical Entity Relationship Diagram

Difficulty: medium

1. The CRUD matrix shows which of the following?
2. The crud that is coming into the system and how to quarantine it
3. Exactly how data are used and created by the major processes in the system
4. The 1:M relationships on an ERD diagram
5. The external entities, process and major data flows from the Context DFD diagram
6. Where customer, relationships, users and developers will interact with a system

Ans: b

Reference: Revisiting the CRUD Matrix

Difficulty: hard

1. The most efficient tables (in terms of storage efficiency) in relational database management systems have which of the following?
2. Have duplicate data, especially for when more than one table is joined together for queries
3. Have no redundant data
4. Are denormalized
5. Have entire tables duplicated
6. Use plasma technologies

Ans: b

Reference: Optimizing Storage Efficiency

Difficulty: medium

1. Barb is working on a database design. For the most efficient storage she should remove: \_\_\_\_\_\_ and \_\_\_\_\_\_.
2. Primary keys and foreign keys
3. International keys and redundancy
4. Adjectives and adverbs
5. Redundancy and null values
6. Special characters and primary keys

Ans: d

Reference: Optimizing Storage Efficiency

Difficulty: hard

1. In a registration database, Ross has tables for student, professor, classroom, class, class-hour. Since his campus has about 12,000 students, when he runs queries about what student is in what class, taught by what professor in what classroom at which hour, the DBMS software will have to perform many \_\_\_\_\_\_\_\_\_.
2. Axes
3. Parallels
4. Concretes
5. Joins
6. Enrolls

Ans: d

Reference: Optimizing Access Speed

Difficulty: medium

1. One common method to increase access speed is to:
2. Use legacy databases in a indexed sequential access method
3. Encrypt all data with 256 byte encryption
4. Denormalize the tables
5. Delete all primary keys
6. Only use alphabetic data

Ans: c

Reference: Optimizing Access Speed

Difficulty: medium

1. The concept of putting records that are somehow related together on the same server (or storage device) is called what?
2. Carmelization
3. Clustering
4. Joining
5. Normalization
6. Hybrid technologies

Ans: b

Reference: Optimizing Access Speed

Difficulty: medium

1. The concept for planning good performance of databases is known as what?
2. Volumetrics
3. Econometrics
4. Moving averages
5. Correlation
6. PERT

Ans: a

Reference: Estimating Storage Size

Difficulty: hard

1. Many \_\_\_\_\_\_\_\_ tools like ERwin can help you with database size information and the calculation of volumetrics.
2. ERD master
3. DFD master
4. Denormalization
5. Pop-up menu
6. CASE

Ans: e

Reference: Estimating Storage Size

Difficulty: medium

## TRUE/FALSE

1. One activity in the data storage design activity is to update the CRUDE matrix.

Ans: False

Reference: Introduction

Difficulty: medium

1. One goal is data storage design is to spread the data over all storage devices so that the redundancy will make for more efficient storage.

Ans: False

Reference: Introduction

Difficulty: medium

1. Microsoft Access is an end-user database.

Ans: True

Reference: Data Storage Formats

Difficulty: medium

1. Most relational database management systems support ‘sticky’ quantitative processing.

Ans: False

Reference: Databases

Difficulty: medium

1. Referential integrity is the idea of ensuring that values linking the tables together through the primary and foreign keys are valid and correctly synchronized.

Ans: True

Reference: Databases

Difficulty: medium

1. The standard method language for accessing the data in relational database tables is: SQL – Standard Query Logic.

Ans: False

Reference: Databases

Difficulty: medium

1. An ‘international key’ is used to relate two tables together (like customer ID from the customer table is an international key in the order table).

Ans: False

Reference: Databases

Difficulty: medium

1. Oracle is an example of an object-oriented database system.

Ans: False

Reference: Databases

Difficulty: medium

1. A great advantage of object-oriented database management systems is their easy of learning.

Ans: False

Reference: Databases

Difficulty: medium

1. Informix is a pure OODBMS package.

Ans: False

Reference: Databases

Difficulty: medium

1. A relational database that is used extensively in data warehousing is a multidimensional database.

Ans: True

Reference: Databases

Difficulty: medium

1. Data marts are larger, aggregated legacy databases.

Ans: False

Reference: databases

Difficulty: medium

1. A DSS is a design support structure and does the ‘ETL’ (extract, transform and load) to create data warehouses.

Ans: False

Reference: Databases

Difficulty: hard

1. Decision support systems are not designed to find individual records, but to find aggregated information (such as ‘what three products sold the best in Boston in February’).

Ans: True

Reference: Databases

Difficulty: medium

1. When working on a major project, project teams will always select and stay with only one database format for consistency of development and use.

Ans: False

Reference: Selecting a Storage Format

Difficulty: medium

1. Maria is working for the Minneapolis Dance Troop (MDT) and wants a database that can support text, numbers, video, and audio. She will probably select the multidimensional database format.

Ans: False

Reference: Selecting a Storage Format

Difficulty: medium

1. Brian wants an e-commerce system to be able to do a lot of rapid processing – like search for particular keywords in documents; return the price of an item; update quantities in the shopping cart. He is probably building an Expert System.

Ans: False

Reference: Selecting a Storage Format

Difficulty: medium

1. Rachel wants aggregated data like find the number of banking customers who have savings accounts over $100,000 and home mortgages with her bank. She probably wants to use a Decision Support System.

Ans: True

Reference: Selecting a Storage Format

Difficulty: medium

1. Systems to support decision making generally need to update data frequently with a large volume of data.

Ans: False

Reference: Selecting a Storage Format

Difficulty: medium

1. One process when considering data storage design is to move from physical data models to logical data models.

Ans: False

Reference: Moving from Logical to Physical Data Models

Difficulty: medium

1. When changing logical data models to physical data models, you will want to change entities to tables or files.

Ans: True

Reference: Moving from Logical to Physical Data Models

Difficulty: medium

1. When changing from logical data models to physical data models, you will want to change the attributes of the logical ERD to fields in the physical ERD.

Ans: True

Reference: Moving from Logical to Physical Data Models

Difficulty: medium

1. Sanjay is creating a screen form that interfaces with a relational database. He should use the median (middle) value in the database as his default value – as that will make it easier for the users to move up and down in the table.

Ans: False

Reference: Moving from Logical to Physical Data Models

Difficulty: medium

1. When converting a logical ERD into a physical data model, you will want to specify both primary keys and international keys.

Ans: False

Reference: Moving from Logical to Physical Data Models

Difficulty: medium

1. When moving from logical data models to physical data models, you should update your CRUD matrix.

Ans: True

Reference: Revisiting the CRUD Matrix

Difficulty: medium

1. The two primary ways to optimize a relational database are (a) for storage efficiency and (b) for using the smallest amount of space.

Ans: False

Reference: Optimizing Data Storage

Difficulty: medium

1. The best design for accessing data faster is generally the most efficient storage as well.

Ans: False

Reference: Optimizing Data Storage

Difficulty: medium

1. Although TJ did a lot of work normalizing the database so that it is in third normal form (3NF), he may want to ‘denormalize’ it so that access might be faster.

Ans: True

Reference: Optimizing Access Speed

Difficulty: medium

1. The most efficient tables in a relational database in terms of storage space have no redundant data and very few null values.

Ans: True

Reference: Optimizing Storage Efficiency

Difficulty: medium

## Essays

1. What is the difference between files and relational databases?

Answer

Files are electronic lists of data (and frequently in one of these types: master-files; look-up files, transaction files, audit files; history-files) and relational databases are tables (with primary keys and foreign keys) for easier use by developers (although can be more inefficient as far as the actual computer is concerned). Relational database are the most common type of database in use currently.

Reference: Files and Databases

Difficulty: medium

1. What is SQL? And what is its usage in relational databases?

Answer

SQL is the acronym for Structured Query Language. SQL is the standard language for accessing the data in the tables and it operates on complete tables (as compared to individual records in the tables). SQL is the standard for retrieving information from a relational database.

Reference: Databases

Difficulty: medium

1. If you were considering a media rich database, what type of database organization might be best and why?

Answer

Object Databases would be a wise choice as they have both data and processes and are used to support multimedia applications or systems that involve complex data.

Reference: Databases

Difficulty: medium

1. What is the difference between end-user databases and enterprise databases (and give at least one end-user database product and at least one enterprise database)?

Answer

An end-user database can reside on the end-users computer – and support the processes and activities of that one person or a very small workgroup. Enterprise databases reside on servers and support multiple users (or the entire business or entire enterprise). Microsoft Access might be the most common end-user database; and Oracle, DB2, Sybase, Informix, SQL Server, SAP might be considered as enterprise database systems.

Reference: Databases

Difficulty: medium