Quiz Format: True/False and Multiple Choice questions (20 questions); problem solving and procedural questions (3 questions). The problem solving questions will only be for materials in Chapters 5-7 of the text.

Duration: 70 minutes

Relative emphasis of the quiz on educational objectives (Bloom’s taxonomy): Comprehension (~30%), Analysis (~22%), Application (~30%), Synthesis (~36%).

Student Learning Objectives to be tested by the quiz:

Data Modeling with the Entity-Relationship Model (Chapter 5)

1. *Describe* the two-phase data modeling/database design process. [Comprehension]
2. *Discuss* the purpose of the data modeling process. [Comprehension]
3. *Describe* entity-relationship (E-R) diagrams. [Comprehension]
4. *Determine* entities, attributes and relationships. [Analysis]
5. *Create* entity identifiers. [Synthesis]
6. *Determine* minimum and maximum cardinalities. [Analysis]
7. *Describe* and *use* ID-dependent and other weak entities. [Comprehension/Application]
8. *Describe* and *use* supertype/subtype entities. [Comprehension/Application]
9. *Describe* and *use* strong entity patterns. [Comprehension/Application]
10. *Describe* and *use* the ID-dependent association pattern. [Comprehension/Application]
11. *Describe* and *use* the ID-dependent multivalued attribute pattern. [Comprehension/Application]
12. *Describe* and *use* the ID-dependent archetype-instance pattern. [Comprehension/Application]
13. *Describe* and *use* the Line-Item pattern. [Comprehension/application]
14. *Describe* and *use* the For-Use-By pattern. [Comprehension/Application]
15. *Describe* and *use* the recursive patterns. [Comprehension/Application]
16. *Discuss* iterative nature of the data modeling process. [Comprehension]
17. Use the data modeling process. [Application]

**Transforming Data Models into Database Designs (Chapter 6)**

1. Describe how to transform data models into database designs. [Comprehension]
2. Identify primary keys and describe when to use a surrogate key. [Comprehension]
3. Discuss the use of referential integrity constraints. [Comprehension]
4. Discuss the use of referential integrity actions. [Comprehension]
5. Represent ID-dependent, 1:1, 1:N, and N:M relationships in tables. [Application]
6. Represent weak entities in tables. [Application]
7. Represent supertype/subtypes as tables. [Application]
8. Represent recursive relationships as tables. [Application]
9. Represent ternary relationships in tables. [Application]
10. Implement referential integrity actions required by minimum cardinalities. [Synthesis]

**SQL for Database Construction (Chapter 7)**

1. Create and manage table structures using SQL. [Synthesis]
2. Explain how referential integrity actions are implemented in SQL code. [Comprehension]
3. Create constraints that use the CHECK clause in SQL. [Synthesis]
4. Discuss several uses for views. [Comprehension]
5. Use SQL to create views. [Application]
6. Update Views. [Application]
7. Discuss how SQL is used in an application program. [Comprehension]
8. Discuss how to use triggers to enforce integrity constraints. [Comprehension]
9. Discuss how to create stored procedures in SQL. [Comprehension]

**Managing Multi-User Databases (Chapter 9)**

1. Discuss the purpose and importance of database administration. [Comprehension]
2. Discuss the need for concurrency control and the basic techniques used. [Comprehension]
3. Explain the meaning of ACID transactions and the standard types of consistency and isolation. [Comprehension]
4. Discuss differences in cursor types. [Comprehension]
5. Explain techniques for database security. [Comprehension]
6. Describe the fundamental concepts of database backup and recovery. [Comprehension]
7. Explain concepts related to managing the DBMS itself. [Comprehension]
XML (Chapter 12)

1. *Explain* the importance of XML. *[Comprehension]*

2. *Explain* the elements of XML, including XML documents, document type declarations (DTD), and XML style sheets. *[Comprehension]*

3. *Explain* the role of XSLT in materializing XML documents. *[Comprehension]*

4. *Explain* the basic concepts of XML Schema and understand their importance to database processing. *[Comprehension]*

5. *Create* XML documents from database data *[Application]*