Database Concepts, 8e **(Kroenke)**
Appendix A Getting Started with Microsoft SQL Server 2016

1) To start working with SQL Server 2016 in Windows 10, use the command Start | All Apps | Microsoft SQL Server 2016 | Microsoft SQL Server Management Studio.
Answer: TRUE
Diff: 1 Page Ref: A-34
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

2) Users log into SQL Server 2016 using the Connect to Server dialog box.
Answer: TRUE
Diff: 1 Page Ref: A-34-A-35
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

3) SQL Server 2016 uses DBMS authentication by default.
Answer: FALSE
Diff: 2 Page Ref: A-34
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

4) Database objects are displayed in the Object Explorer window in the SQL Server Management Studio.
Answer: TRUE
Diff: 1 Page Ref: A-34
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

5) A new SQL Server database is created using the New Database dialog box.
Answer: TRUE
Diff: 2 Page Ref: A-37
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

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6) Logging into the SQL Server 2016 Express DBMS is done using _____.
A) the Connect to Server command
B) the Connect to Server dialog box
C) the Connect to SQL Server Instance command
D) the Connect to SQL Server Instance dialog box
E) None of the above is correct.
Answer: B
Diff: 2 Page Ref: A-34-A35
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

7) SQL Server DBMS objects are displayed _____.
A) in the Navigation Pane
B) in the Object Explorer
C) in the tabbed database window
D) in the tabbed document window
E) in the command tab
Answer: B
Diff: 2 Page Ref: A-34
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

8) A new SQL Server database is created using _____.
A) the New Database dialog box
B) the Create Database command
C) the Create New Schema dialog box
D) the Create Schema command
E) the New Object dialog box
Answer: A
Diff: 2 Page Ref: A-37
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

9) Users log into SQL Server 2016 Express using the _____ dialog box.
Answer: Connect to Server
Diff: 2 Page Ref: A-34-A-35
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

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10) SQL Server 2016 uses _____ authentication by default.
Answer: Windows
Diff: 2 Page Ref: A-34
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

11) Database objects are displayed in the _____ window in the SQL Server Management Studio.
Answer: Object Explorer
Diff: 2 Page Ref: A-34
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

12) A new SQL Server database is created using the _____ dialog box.
Answer: New Database
Diff: 1 Page Ref: A-37
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

13) Describe how to create a new database in SQL Server 2016 Express.
Answer: In SQL Server 2016, new databases are created in the SQL Server Management Studio. Right-click the Databases folder object to display a shortcut menu, then click the New Database command. The New Database dialog box is displayed. In the New Database dialog box, enter the database name and any other needed data. Click the OK button to create the database.
Diff: 2 Page Ref: A-37-A-38
AACSB: Information Technology
Chapter Obj: Learn how to create a database in SQL Server 2016
Classification: Concept

14) To properly import a table from Microsoft Excel 2016, which of the following steps is <u>not</u> taken?
A) Use the SQL Server Import and Export Wizard to import data into a temporary table
B) Use an SQL Create Table statement to create the actual table
C) Use SQL Server to normalize the table
D) Use an SQL Insert statement to copy data from the temporary table to the actual table
E) Delete the temporary table from the database
Answer: C
Diff: 2 Page Ref: A-55
AACSB: Information Technology
Chapter Obj: Learn how to import Microsoft Excel worksheet data into a database
Classification: Concept

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15) SQL Server 2016 Express requires that the .NET Framework version 3.5 be automatically installed.
Answer: FALSE
Diff: 1 Page Ref: A-7
AACSB: Information Technology
Chapter Obj: Learn how to install SQL Server 2016
Classification: Concept

16) An important reason for using SQL Server 2016 Express is that it has full SQL capabilities.
Answer: TRUE
Diff: 1 Page Ref: A-5
AACSB: Information Technology
Chapter Obj: Learn how to install SQL Server 2016
Classification: Concept

17) Microsoft .NET Framework 4.6.1 is provided by Windows 10.
Answer: TRUE
Diff: 1 Page Ref: A-7
AACSB: Information Technology
Chapter Obj: Learn how to install SQL Server 2016
Classification: Concept

18) Microsoft SQL Server 2016 Express Advanced includes _____.
A) MySQL Workbench
B) SQL Server 2016 Reporting Services
C) Windows Installer 4.5
D) Oracle Advanced Analytics
E) Maximum database size of 524 Petabytes
Answer: B
Diff: 2 Page Ref: A-5
AACSB: Information Technology
Chapter Obj: Learn how to install SQL Server 2016
Classification: Concept

19) SQL Server 2016 requires that _____ be installed.
Answer: the .NET Framework version 4.6.1
Diff: 2 Page Ref: A-7
AACSB: Information Technology
Chapter Obj: Learn how to install SQL Server 2016
Classification: Concept

20) The _____ edition is a free, single-user version of the Enterprise Edition.
Answer: Developer
Diff: 1 Page Ref: A-5
AACSB: Information Technology
Chapter Obj: Learn how to install SQL Server 2016
Classification: Concept

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21) The Microsoft SQL Server 2016 Management Studio is included with Microsoft SQL Server 2016 Express Advanced.
Answer: TRUE
Diff: 1 Page Ref: A-30
AACSB: Information Technology
Chapter Obj: Learn how to install SQL Server Management Studio
Classification: Concept

22) When SQL Server 2016 is installed, the SQL Server 2016 ODBC client is _____.
A) installed automatically as part of the installation
B) installed manually as a separate part of the installation process
C) not installed, and must be downloaded and installed manually
D) not installed because there is no ODBC client for SQL Server 2016
E) Either A or B
Answer: A
Diff: 2 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to install the Microsoft SQL Server 2016 ODBC Client
Classification: Concept

23) The name of the SQL Server 2016 ODBC client as it appears in the ODBC Data Source Administrator is _____.
A) SQL Server ODBC Client 2016
B) ODBC Driver 13 for SQL Server
C) SQL Server Native Client 2008
D) SQL Server Native Client 2008 R2
E) SQL Server Native Client 11.0
Answer: B
Diff: 2 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to install the Microsoft SQL Server 2016 ODBC Client
Classification: Concept

24) The ODBC Driver 11 for SQL Server is installed _____ when SQL Server 2016 is installed.
Answer: automatically
Diff: 2 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to install the Microsoft SQL Server 2016 ODBC Client
Classification: Concept

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25) The name of the Microsoft SQL Server 2016 ODBC Client as it appears the ODBC Data Source Administrator is _____.
Answer: ODBC Driver 13 for SQL Server
Diff: 2 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to install the Microsoft SQL Server 2016 ODBC Client
Classification: Concept

26) SQL Server Management Studio provides a text editor to create SQL commands, such as creating tables.
Answer: TRUE
Diff: 1 Page Ref: A-40
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to create table structures
Classification: Concept

27) An SQL command to add data into a database is ADD INTO…
Answer: FALSE
Diff: 1 Page Ref: A-45-A-48
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to insert database data
Classification: Concept

28) SQL statements can be run individually or as part of a related group of SQL statements known as a script.
Answer: TRUE
Diff: 1 Page Ref: A-39
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

29) To run an SQL script, click the Execute button on the Query Toolbar.
Answer: FALSE
Diff: 2 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

30) To create a new SQL query, click the New Query button.
Answer: TRUE
Diff: 1 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

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31) SQL query results are displayed in a tabbed Results window.
Answer: TRUE
Diff: 1 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

32) SQL statements can be run individually or as part of a related group of SQL statements known as a _____.
A) Result
B) Resultset
C) Script
D) Scriptset
E) Commandset
Answer: C
Diff: 1 Page Ref: A-39
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

33) To run an SQL script or SQL command in SQL Server 2016 _____.
A) click the Execute button on the SQL Editor Toolbar
B) click the Execute button on the Browser Toolbar
C) click the Run button on the Query Toolbar
D) click the Run button on the Browser Toolbar
E) click the Results button on the Query Toolbar
Answer: A
Diff: 2 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

34) SQL query results are displayed _____.
A) in a tabbed Resultset window
B) in a tabbed Results window
C) in a tabbed Document window
D) in a tabbed Messages window
E) in a tabbed Finished window
Answer: B
Diff: 2 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

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35) SQL statements can be run individually or as part of a related group of SQL statements known as a(n) _____.
Answer: script; SQL script
Diff: 1 Page Ref: A-39
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

36) To run an SQL script, click the _____ button on the SQL Editor Toolbar.
Answer: Execute
Diff: 1 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

37) Users can click the _____ button to enable or disable the SQL editor windows set of outlining and auto-completion features.
Answer: IntelliSense Enabled
Diff: 1 Page Ref: A-40 -A-42
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

38) To create a new SQL query, click the _____ button.
Answer: New Query
Diff: 1 Page Ref: A-40-A-42
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

39) SQL query results are displayed in a tabbed _____ window.
Answer: Results
Diff: 1 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

40) What is an SQL script, and why are SQL scripts useful?
Answer: An SQL Script is a group of SQL statements that are run consecutively. Each of the SQL statements in the script could be run separately, but running them as a group is more efficient, and this is what makes SQL scripts useful. A good example is grouping all the SQL CREATE TABLE statements necessary to build a database structure into a single SQL script.
Diff: 2 Page Ref: A-39
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

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41) Describe how to create and run an SQL script in SQL Server 2016 Express.
Answer: SQL scripts are created in a text editor and saved with an *.sql file extension. While a text editor, such as Microsoft Notepad, can be used, the most efficient editor is the text editor built into the Microsoft SQL Server Management Studio. In the Microsoft SQL Server Management Studio, the SQL script text is edited and then saved as an *.sql file. The Parse button is used to test the script, and the Execute button is used to run the SQL script.
Diff: 2 Page Ref: A-39
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

42) Describe how to create and run an SQL query in SQL Server 2016 Express.
Answer: In SQL Server 2016, SQL queries are created and run in the SQL Server Management Studio. Click the New Query button on the Standard toolbar to open a new tabbed query window and display the SQL Editor toolbar. Type the SQL query into the tabbed document. Click the Execute button on the SQL Editor toolbar to run the query. Results are displayed in the tabbed Results window.
Diff: 2 Page Ref: A-48
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

43) Describe why SQL Server 2016 is sensitive to certain words being used in SQL commands or scripts, and what to do about it.
Answer: SQL Server 2016 has a set of SQL keywords that are reserved words. Thus, SQL statements using these words may cause conflicts. For example, the SQL statement "SELECT Select FROM From;" would be difficult for SQL Server 2016 to work with. The solution is to either use modified versions of the words (SelectColumn, FromTable), or to enclose the SQL keywords that are used as table or column names in square brackets ([Select], [From]).
Diff: 3 Page Ref: A-43
AACSB: Information Technology
Chapter Obj: Learn how to submit SQL commands to query a database
Classification: Concept

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Database Concepts, 8e **(Kroenke)**
Chapter 2 The Relational Model

1) A key must be unique.
Answer: FALSE
Diff: 1 Page Ref: 74
AACSB: Information Technology
Chapter Obj: Learn basic relational terminology
Classification: Concept

2) Ensuring that every value of a foreign key matches a value of the corresponding primary key is an example of a referential integrity constraint.
Answer: TRUE
Diff: 1 Page Ref: 80
AACSB: Information Technology
Chapter Obj: Learn basic relational terminology
Classification: Concept

3) A double arrow notation, A →→ B, is used to indicate a multivalued dependency.
Answer: TRUE
Diff: 2 Page Ref: 96
AACSB: Information Technology
Chapter Obj: Learn basic relational terminology
Classification: Concept

4) Microsoft Access forms can only contain data from one table.
Answer: FALSE
Diff: 1 Page Ref: 115
AACSB: Information Technology
Chapter Obj: Learn basic relational terminology
Classification: Concept

5) Which of the following terms is synonymous with "tuple"?
A) Attribute
B) Table
C) Field
D) Row
E) Relation
Answer: D
Diff: 1 Page Ref: 73
AACSB: Information Technology
Chapter Obj: Learn basic relational terminology
Classification: Concept

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6) Which of the following is not true about null values?
A) A null value can mean that the value is unknown.
B) A null value is ambiguous.
C) A null value can mean that the value is known to be blank.
D) A null value can mean that no value for the field is appropriate.
E) Null values cannot be avoided.
Answer: E
Diff: 2 Page Ref: 83-84
AACSB: Information Technology
Chapter Obj: Learn basic relational terminology
Classification: Concept

7) Explain the terms *relation*, *tuple*, and *attribute*.
Answer: The terms *relation*, *tuple*, and *attribute* are used primarily by database theoreticians. These terms are synonymous with the terms *table*, *row*, and *column*, respectively, in regards to a relational database. They are also equivalent to the terms *file*, *record*, and *field*, which tend to be used by many traditional data processing professionals.
Diff: 1 Page Ref: 73
AACSB: Information Technology
Chapter Obj: Learn basic relational terminology
Classification: Concept

8) Explain the possible interpretations of a null value.
Answer: The problem with allowing null values in a table is that the null value is open to three different interpretations. First, a null value in a field may mean that no value is appropriate for the field for the given record. Second, a null value may mean that the value of that field is known to be blank for the given record. Third, a null value may mean that the value of that field is not known for the given record.
Diff: 1 Page Ref: 83-84
AACSB: Information Technology
Chapter Obj: Learn basic relational terminology
Classification: Concept

9) While the relational model for databases appears to hold much promise, few commercial databases have implemented it.
Answer: FALSE
Diff: 1 Page Ref: 70
AACSB: Information Technology
Chapter Obj: Learn the conceptual foundation of the relational model
Classification: Concept

10) Every cell in a relation can hold only a single value.
Answer: TRUE
Diff: 1 Page Ref: 71
AACSB: Information Technology
Chapter Obj: Learn the conceptual foundation of the relational model
Classification: Concept

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11) In the relational model, each row of a table contains data that represents an attribute of the entity.
Answer: FALSE
Diff: 2 Page Ref: 71
AACSB: Information Technology
Chapter Obj: Learn the conceptual foundation of the relational model
Classification: Concept

12) Which of the following terms is synonymous with "relation"?
A) Attribute
B) Table
C) Record
D) Row
E) Tuple
Answer: B
Diff: 1 Page Ref: 70
AACSB: Information Technology
Chapter Obj: Learn the conceptual foundation of the relational model
Classification: Concept

13) _____ was the developer of the relational model for databases.
Answer: E. F. Codd
Diff: 1 Page Ref: 70
AACSB: Information Technology
Chapter Obj: Learn the conceptual foundation of the relational model
Classification: Concept

14) Although Microsoft Access is a personal database, the database tables in Access are still subject to _____ if they are not well-formed.
Answer: modification problems
Diff: 1 Page Ref: 101
AACSB: Information Technology
Chapter Obj: Learn the conceptual foundation of the relational model
Classification: Concept

15) To be considered a composite key, a key must contain at least two attributes.
Answer: TRUE
Diff: 1 Page Ref: 74
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

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16) Candidate keys may or may not be unique.
Answer: FALSE
Diff: 2 Page Ref: 74
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

17) The primary key is used both to identify unique rows in a relation and to represent rows in relationships.
Answer: TRUE
Diff: 2 Page Ref: 75
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

18) Null values can cause problems because they are ambiguous.
Answer: TRUE
Diff: 1 Page Ref: 84
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

19) Which of the following is true about a key?
A) It may be unique.
B) It may be non-unique.
C) It can only identify one row.
D) Both A and B
E) None of the above
Answer: D
Diff: 1 Page Ref: 74
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

20) A key that contains more than one attribute is called a(n) _____.
A) composite key
B) complex key
C) multi-key
D) n-key
E) candidate key
Answer: A
Diff: 1 Page Ref: 74
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

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21) A primary key is _____.
A) not required to be unique
B) used to represent columns in relationships
C) a candidate key
D) always automatically generated by the DBMS
E) comprised of exactly one attribute
Answer: C
Diff: 2 Page Ref: 74-75
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

22) A candidate key is _____.
A) never a primary key
B) a combination of two or more attributes
C) is always automatically generated by the DBMS
D) a candidate to be the primary key
E) None of the above
Answer: D
Diff: 3 Page Ref: 74-75
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

23) A(n) _____ is one or more columns of a relation that is used to identify a row.
Answer: key
Diff: 1 Page Ref: 74
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

24) A key that contains two or more attributes is called a(n) _____ key.
Answer: composite
Diff: 1 Page Ref: 74
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

25) The unique keys that are not chosen to be the primary key are called _____ keys.
Answer: alternate
Diff: 2 Page Ref: 75
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

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26) Distinguish between the primary key and a candidate key.
Answer: Both the primary key and a candidate key can uniquely identify the rows in a table. The primary key is the candidate key that is chosen by the database designer, working with the users, to uniquely identify rows and to represent relationships. Although any candidate key could, by definition, be selected to act as the primary key, the choice of primary key is often based on design decisions such as the amount of foreign key data that would be generated.
Diff: 2 Page Ref: 74
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

27) Briefly describe the various tasks of the primary key.
Answer: The primary key is used for four primary tasks. First, it is used to uniquely identify the rows in a table. Second, it is used to represent rows in relationships. Third, most DBMS products use the values of the primary key to organize the storage of the relation. Finally, primary keys are used in indexes and other structures to improve performance for search operations.
Diff: 2 Page Ref: 74-75
AACSB: Information Technology
Chapter Obj: Learn the meaning and importance of keys, foreign keys, and related terminology
Classification: Concept

28) If the condition exists such that knowing the value of attribute X determines the value of attribute Y, then attribute Y is functionally dependent on attribute X.
Answer: TRUE
Diff: 1 Page Ref: 85
AACSB: Information Technology
Chapter Obj: Learn the meaning of functional dependencies
Classification: Concept

29) Given the functional dependency for the attributes of ENTITY1, **X → (A, B, C)**, X is a candidate key for the relation ENTITY1 (A, B, C, X).
Answer: TRUE
Diff: 3 Page Ref: 87
AACSB: Information Technology
Chapter Obj: Learn the meaning of functional dependencies
Classification: Concept

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30) Given the below functional dependency,

MedicineCode → (MedicineName, ShelfLife, Manufacturer, Dosage)

which of the following statements is not known to be true?
A) MedicineCode is a determinant.
B) MedicineName is a determinant.
C) Manufacturer is functionally dependent on MedicineCode.
D) ShelfLife is functionally dependent on MedicineCode.
E) MedicineCode is a candidate key of the relation MEDICINE (MedicineName, ShelfLife, Manufacturer, Dosage).
Answer: B
Diff: 2 Page Ref: 85-86
AACSB: Information Technology
Chapter Obj: Learn the meaning of functional dependencies
Classification: Concept

31) Which of the following functional dependency diagrams accurately represents the following situation:
- A campus has many buildings.
- Each building has a unique name.
- Each building has many rooms.
- All rooms in any given building are numbered sequentially starting at "101."
- Each room has a certain capacity, although many rooms in the same building or different buildings may have the same capacity.
- Each room is assigned to a single department.
- A department may have many rooms in one or more buildings, each with the same or different capacities.

A) BuildingName → (RoomNumber, Capacity, Department)
B) RoomNumber → (BuildingName, Department, Capacity)
C) (Department, Capacity) → (BuildingName, RoomNumber)
D) (BuildingName, Capacity) → (Department, RoomNumber)
E) (BuildingName, RoomNumber) → (Capacity, Department)
Answer: E
Diff: 3 Page Ref: 85-86
AACSB: Information Technology
Chapter Obj: Learn the meaning of functional dependencies
Classification: Concept

32) The relationship between two attributes that denotes that if the value of the first attribute is known, then the value of the second attribute can be determined, is called a(n) _____.
Answer: functional dependency
Diff: 2 Page Ref: 85-86
AACSB: Information Technology
Chapter Obj: Learn the meaning of functional dependencies
Classification: Concept

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33) The key that has been designated the _____ key of a relation functionally determines all the other attributes in the relation.
Answer: primary
Diff: 2 Page Ref: 87
AACSB: Information Technology
Chapter Obj: Learn the meaning of functional dependencies
Classification: Concept

34) Explain the concept of a functional dependency.
Answer: A functional dependency is a relationship that exists among the attributes of a relation, such that if the value of one attribute or group of attributes is known, the value of another attribute or group of attributes can be determined. In a functional dependency, the attribute(s) whose value determines the value of the other attribute is called the "determinant." The other attribute, whose value is determined by the determinant, is said to be functionally dependent on the determinant.
Diff: 2 Page Ref: 85-86
AACSB: Information Technology
Chapter Obj: Learn the meaning of functional dependencies
Classification: Concept

35) Surrogate key values have no meaning to the users.
Answer: TRUE
Diff: 1 Page Ref: 79
AACSB: Information Technology
Chapter Obj: Learn the purpose and use of surrogate keys
Classification: Concept

36) Since surrogate keys are used to uniquely identify rows, their values are normally displayed prominently on all forms and reports for the users to see.
Answer: FALSE
Diff: 2 Page Ref: 79
AACSB: Information Technology
Chapter Obj: Learn the purpose and use of surrogate keys
Classification: Concept

37) The use of surrogate keys usually complicates application programming since most DBMS products require the application program to generate surrogate key values.
Answer: FALSE
Diff: 2 Page Ref: 79
AACSB: Information Technology
Chapter Obj: Learn the purpose and use of surrogate keys
Classification: Concept

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38) A surrogate key may be appropriate under which of the following circumstances?
A) The primary key is not unique.
B) The primary key is numeric.
C) The available candidate keys would be prone to typographical errors.
D) The available candidate keys have little meaning to the users.
E) The relation only has one attribute.
Answer: C
Diff: 2 Page Ref: 79
AACSB: Information Technology
Chapter Obj: Learn the purpose and use of surrogate keys
Classification: Concept

39) Which of the following is not true of surrogate keys?
A) They are meaningful to the users.
B) They are numeric.
C) They are usually generated by the DBMS.
D) They are unique.
E) They are usually hidden on forms and reports.
Answer: A
Diff: 2 Page Ref: 79
AACSB: Information Technology
Chapter Obj: Learn the purpose and use of surrogate keys
Classification: Concept

40) In SQL Server, the starting value of a surrogate key is called the _____.
A) identity
B) identity increment
C) identity Start
D) identity Seed
E) identity property
Answer: D
Diff: 3 Page Ref: 79
AACSB: Information Technology
Chapter Obj: Learn the purpose and use of surrogate keys
Classification: Concept

41) A(n) _____ is a unique, numeric value that is appended to the relation to serve as the primary key.
Answer: surrogate key
Diff: 2 Page Ref: 79
AACSB: Information Technology
Chapter Obj: Learn the purpose and use of surrogate keys
Classification: Concept

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42) Explain the concept of a surrogate key.
Answer: A surrogate key is an artificial key that is created to act as the primary key for a relation. The surrogate key is a unique, numeric value that is appended to the relation. Surrogate keys are used in situations when no suitable primary key exists within the user data, or when all available primary keys within the data are too cumbersome for an efficient design. Surrogate key values have no meaning to the users and are normally hidden on all forms, reports, and displays. Most DBMS products have the ability to automatically generate values for surrogate keys as needed.
Diff: 1 Page Ref: 79
AACSB: Information Technology
Chapter Obj: Learn the purpose and use of surrogate keys
Classification: Concept

43) Normalization is the process of removing all functional dependencies from a relation.
Answer: FALSE
Diff: 2 Page Ref: 88
AACSB: Information Technology
Chapter Obj: Learn to apply a process for normalizing relations
Classification: Concept

44) To create a well-formed relation through normalization, every determinant must be a candidate key.
Answer: TRUE
Diff: 1 Page Ref: 89
AACSB: Information Technology
Chapter Obj: Learn to apply a process for normalizing relations
Classification: Concept

45) Any table that meets the definition of a relation is said to be in second normal form.
Answer: FALSE
Diff: 2 Page Ref: 99
AACSB: Information Technology
Chapter Obj: Learn to apply a process for normalizing relations
Classification: Concept

46) The first step of the normalization process is to identify all the candidate keys of a relation.
Answer: TRUE
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47) In the normalization process, it is not necessary to identify all the functional dependencies in a relation.
Answer: FALSE
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Classification: Concept

48) In the normalization process, it is necessary to identify all the determinants in a relation.
Answer: TRUE
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49) In the normalization process, if you find a candidate key that is not a primary key, then you have determined that the relation needs to be broken into two or more other relations.
Answer: FALSE
Diff: 2 Page Ref: 90
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50) In the normalization process, if you find that every determinant in a relation is a candidate key, then you have determined that the relation is well formed.
Answer: TRUE
Diff: 2 Page Ref: 90
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51) Since Microsoft Access is a personal database, it is not subject to the modification problems that occur in other relational databases.
Answer: FALSE
Diff: 2 Page Ref: 107-108
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Classification: Concept

52) In Microsoft Access, relationships between tables are created in the Relationships window.
Answer: TRUE
Diff: 1 Page Ref: 110-112
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53) In Microsoft Access, foreign keys are designated by using the Foreign Key button in the toolbar.
Answer: FALSE
Diff: 2 Page Ref: 112
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Classification: Concept

54) In Microsoft Access, a relationship is created by dragging a foreign key column and dropping it on top of the corresponding primary key.
Answer: FALSE
Diff: 2 Page Ref: 112
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Classification: Concept

55) One important relational design principle is that _____.
A) every determinant must be a candidate key
B) every candidate key must not be a determinant
C) every primary key must be a surrogate key
D) every determinant must be functionally dependent on the primary key
E) every primary key must be functionally dependent on every determinant
Answer: A
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56) During the normalization process, the remedy for a relation that is not well formed is to _____.
A) create a surrogate key
B) create a functional dependency
C) break it into two or more relations that are well formed
D) combine it with another relation that is well formed
E) convert it into a list
Answer: C
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57) A table that meets the requirements of a relation is said to be in which normal form?
A) Relational normal form (RNF)
B) First normal form
C) Second normal form
D) Boyce-Codd normal form
E) Domain/key normal form
Answer: B
Diff: 1 Page Ref: 89
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Classification: Concept

58) The first step of the normalization process is to _____.
A) identify all the candidate keys of a relation
B) identify all the foreign keys of a relation
C) identify all the functional dependencies of a relation
D) identify all the determinants of a relation
E) split the relation into two or more new relations
Answer: A
Diff: 1 Page Ref: 89-90
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Classification: Concept

59) In the normalization process, it is <u>not</u> necessary to _____.
A) identify all the candidate keys of a relation
B) identify all the foreign keys of a relation
C) identify all the functional dependencies of a relation
D) identify all the determinants of a relation
E) determine if every determinant is a candidate key
Answer: B
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60) In the normalization process, if you find a candidate key that is not a primary key then you should _____.
A) place the columns of the functional dependency in a new relation
B) make the determinant of the functional dependency the primary key of the new relation
C) leave a copy of the determinant as a foreign key in the original relation
D) remove the determinant from the original relation
E) None of the above
Answer: E
Diff: 3 Page Ref: 90
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Classification: Concept

61) In the normalization process, if you find a candidate key that is not a determinant then you should not _____.
A) place the columns of the functional dependency in a new relation
B) make the determinant of the functional dependency the primary key of the new relation
C) leave a copy of the determinant as a foreign key in the original relation
D) rename the determinant to another attribute description
E) create a referential integrity constraint between the original relation and the new relation
Answer: D
Diff: 2 Page Ref: 90
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Classification: Concept

62) In the normalization process, if you find that every determinant in a relation is a candidate key then you have determined that _____.
A) the relation is well formed
B) the relation needs to be broken into two or more new relations
C) surrogate keys in the relation may not be correctly linked to other relations
D) the relation needs to have foreign keys added in order to be correctly linked to other relations
E) referential integrity constraints concerning the relation need to be established
Answer: A
Diff: 2 Page Ref: 90
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Classification: Concept

63) To be a well-formed relation, every _____ in the relation must be a candidate key.
Answer: determinant
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Classification: Concept

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64) Any table that meets the requirements of a(n) _____ is in first normal form.
Answer: relation
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Classification: Concept

65) What is normalization?
Answer: Normalization is a process whereby relations that are not well-formed are modified to become well-formed relations. A relation is considered to be well-formed if the data within it are not subject to unintended negative consequences when it is maintained. Although normalization recognizes several different normal forms, which are categories that the structure of a relation can be classified into based on the types of problems to which it is vulnerable, the basic premises of normalization are that (1) every determinant should be a candidate key, and (2) any relation that is not well formed should be broken into two or more relations that are well-formed.
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Classification: Concept

66) What are the basic steps of the normalization process?
Answer: Before starting the normalization process, the relation must be in first normal form, which means that it meets the basic requirements of being a relation. The first step of the normalization process is to identify all the candidate keys in the relation. The second step is to identify all the functional dependencies in the relation. Third, check to see if all the identified determinants are candidate keys. If all determinants are candidate keys, the relation is well-formed and nothing more needs to be done. On the other hand, if any of the determinants is not a candidate key, the relation is not well-formed, and it is necessary to: (1) place the columns of that functional dependency into a new relation, (2) make the determinant of that functional dependency the primary key of the new relation, (3) leave a copy of the determinant in the original relation as a foreign key, and (4) create a referential integrity constraint between the original relation and the new relation. This process should be repeated for every relation until every determinant in a relation is a candidate key of that relation.
Diff: 1 Page Ref: 89-90
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Classification: Concept

67) What is a multivalued dependency, and how do they affect the normalization process?
Answer: A multivalued dependency is the case where a determinant is associated with a set of values. When isolated, they do not have modification anomalies; tables with these isolated dependencies are considered to be in fourth normal form (4NF).
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68) To represent a relationship in the relational model, the primary key of one relation is placed into a second relation.
Answer: TRUE
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Classification: Concept

69) When used to represent a relationship, the primary key must have the same name as the corresponding foreign key.
Answer: FALSE
Diff: 3 Page Ref: 80
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Classification: Concept

70) When the primary key of one relation is placed into a second relation, it is called a _____.
A) field key
B) referential integrity
C) foreign key
D) candidate key
E) relocated key
Answer: C
Diff: 1 Page Ref: 80
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Classification: Concept

71) Given the relations:

STUDENT (<u>SID</u>, StudentName, Major, AdvisorID)
ADVISOR (<u>AdvisorID</u>, AdvisorName, Office, Phone)

such that each student is assigned to one advisor, which of the following is true?
A) SID is both a primary key and a foreign key.
B) AdvisorName is a determinant.
C) AdvisorID is a foreign key.
D) Phone is a candidate key.
E) Major is a candidate key.
Answer: C
Diff: 3 Page Ref: 80
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72) A rule that requires that the values in a foreign key must have a matching value in the primary key to which the foreign key corresponds is called _____.
A) normalization
B) a referential integrity constraint
C) a key matching constraint
D) a functional dependency
E) synchronization
Answer: B
Diff: 3 Page Ref: 80
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Classification: Concept

73) In Microsoft Access, relationships between tables are created _____.
A) by the Relationships button on the Create command tab
B) by the Relationships button on the Home command tab
C) in the Relationships window
D) in the Table window of the table containing the primary key
E) in the Table window of the table containing the foreign key
Answer: C
Diff: 1 Page Ref: 110-113
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Classification: Concept

74) In Microsoft Access, a relationship between two tables is created _____.
A) by entering the name of the foreign key in the appropriate table in Design View
B) by entering the name of the primary key in the appropriate table in Design View
C) by dragging the primary key column of one table onto the foreign key column of the other table in the Relationships window
D) by dragging the foreign key column of one table onto the primary key column of the other table in the Relationships window
E) by dragging the primary key column of one table onto the primary key column of the other table in the Relationships window
Answer: C
Diff: 2 Page Ref: 110-113
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75) In Microsoft Access, referential integrity constraints are created _____.
A) by setting a property value on the primary key in the table which contains it
B) by setting a property value on the foreign key in the table which contains it
C) by setting a property value on the primary key in the Relationships window
D) by setting a property value on the foreign key in the Relationships window
E) by checking the Enforce Referential Integrity check box in the Edit Relationships dialog box
Answer: E
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76) In Microsoft Access, the relationship between two tables is not actually created until _____.
A) the **OK** button in the Create Relationships dialog box is clicked
B) the **Create** button in the Create Relationships dialog box is clicked
C) the **OK** button in the Edit Relationships dialog box is clicked
D) the **Create** button in the Edit Relationships dialog box is clicked
E) the **Join** button in the Edit Relationships dialog box is clicked
Answer: D
Diff: 2 Page Ref: 113
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77) When the primary key of one relation is placed in a second relation to represent a relationship, the attribute in the second relation is called a(n) _____ key.
Answer: foreign
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Classification: Concept

78) A rule that requires every value in a foreign key to match values in the corresponding primary key is called a(n) _____ constraint.
Answer: referential integrity
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79) In Microsoft Access, relationships between tables are built in the _____.
Answer: Relationships window
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80) In Microsoft Access, the Relationships window is accessed by using the _____ button on the Database tools command tab.
Answer: Relationship
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Classification: Concept

81) To create a relationship in Microsoft Access, we drag and drop the _____ of a table.
Answer: primary key
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Classification: Concept

82) In Microsoft Access, referential integrity constraints are created in the _____.
Answer: Edit Relationships dialog box
Diff: 3 Page Ref: 112
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Classification: Concept

83) Explain the concept of a foreign key.
Answer: To implement a relationship within a relational database, the primary key of one relation is placed as an attribute in another relation. This attribute is called a foreign key in the second relation because it is the primary key of a relation that is foreign to the table in which the field resides.
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84) Explain how to create a relationship in Microsoft Access.
Answer: In Microsoft Access, relationships are created in the **Relationships** window, which is opened by using the **Relationships** button on the Database Tools command tab. Once the **Relationships** window is open, the needed database tables are displayed using the **Show Table** dialog box. A relationship is initiated by dragging the primary key of one table and dropping it on top of the corresponding foreign key in the related table. At this point the **Edit Relationships** dialog box is displayed. A referential integrity constraint can be set in this box by checking the **Enforce Referential Integrity** check box. The relationship is actually created by clicking the **Create** button in the **Edit Relationships** dialog box.
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85) Every table is a relation, but not every relation is a table.
Answer: FALSE
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Classification: Concept

86) Every relation is a table, but not every table is a relation.
Answer: TRUE
Diff: 2 Page Ref: 70-72
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Classification: Concept

87) Which of the following is <u>not</u> true about a relation?
A) A relation is a two-dimensional table.
B) The cells of a relation must hold a single value.
C) A relation may have duplicate column names.
D) A relation may not have duplicate rows.
E) The order of the rows of a relation is insignificant.
Answer: C
Diff: 1 Page Ref: 71
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Classification: Concept

88) Which of the following is true about a relation?
A) The order of the columns in a relation must go from largest to smallest.
B) All entries in any column must be of the same kind.
C) A relation may have duplicate column names.
D) A relation may have duplicate rows.
E) A relation may have multiple names.
Answer: B
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89) What requirements must a two-dimensional table satisfy in order to be a relation?
Answer: For a table to be considered a relation, it must meet several requirements. First, every cell must contain a single value. Second, there can be no duplicate rows. Third, each column must have a unique name. Fourth, the order of the columns must have no significance. Fifth, all values for a given column must be of the same type. Finally, the order of the rows must have no significance.
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Classification: Concept

90) In practice, why would tables that have duplicate rows be allowed?
Answer: It is not uncommon for a table that is returned as the result of a data manipulation operation, such as a query, to contain duplicate rows. This is often tolerated because of the processing time necessary for the DBMS to search the table to find and eliminate duplicate rows. This is especially true if the table is very large. In these cases, it is often acceptable to allow the duplicate rows to exist.
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