TEST BANK

CORONEL / MORRIS / ROB

DATABASE SYSTEMS

Design, Implementation and Management

NINTH EDITION

ch2

True/False
Indicate whether the statement is true or false.

____ 1. A matrix consisting of a series of a row and column intersection is a table.

____ 2. Relations are related to each other by sharing a common entity characteristic.

____ 3. A relational DBMS is a single data repository in which data independence is maintained.

____ 4. An entity is a person, place, or thing about which data are to be collected and stored.

____ 5. A model is an exact representation of a real-world event.

____ 6. A data model represents data structures and their characteristics.

____ 7. Data modeling is usually skipped due to time constraints.

____ 8. A data model is built out of tables, rows, and columns.

____ 9. There are five types of relationships that exist between entities.

____ 10. Business rules are policies written in the employee handbook.

____ 11. Business rules help you determine the relationships that exist between entities.

____ 12. The top layer of the hierarchical model is known as the treetop.

____ 13. A segment is the equivalent of a file system's record type.

____ 14. The limitations of the hierarchical model are that none of the concepts defined by that model are in use today.

____ 15. Each segment in a hierarchical structure is referenced by a path.

____ 16. Many-to-many relationships are easily represented using a hierarchical model.

____ 17. One of the advantages of the hierarchical model is the ease of maintaining data integrity.

____ 18. Hierarchal databases became popular in the 1980s.

____ 19. The only relationship type supported by the hierarchical model is 1:1.

____ 20. The hierarchical model was the first to define a standard DML and DDL.

____ 21. The DBTG report contained specifications for a schema and subschema.

____ 22. In 1975, it was decided that all databases should conform to the SPARC standard.

____ 23. In network database terminology, 1:M relationships are represented using a database table.

____ 24. In the network model, an entity can have more than one owner.

____ 25. In the network model, it is possible for a member to exist without an owner.

____ 26. One of the disadvantages of the network model was the lack of structural independence.

____ 27. The developer of the relational model worked for Microsoft.

____ 28. SQL makes pure ad hoc queries a reality.

____ 29. Only 1:M and M:N relationships can be represented in a relational schema.

_____ 30. Ad hoc query capability was introduced in the relational model.

Multiple Choice
Identify the choice that best completes the statement or answers the question.

_____ 31. A relational database is a group of _____.
   a. common fields
   b. field values
   c. records
   d. tables

_____ 32. A table is a matrix consisting of a series of row and column _____.
   a. links
   b. intersections
   c. systems
   d. models

_____ 33. One of the advantages of a relational database model is _____.
   a. structural dependence
   b. conceptual complexity
   c. easier database design
   d. complex database design

_____ 34. The most important advantages of the hierarchical database model are _____.
   a. conceptual simplicity, security, integrity, diversity, and security
   b. security, efficiency, diversity, simplicity, and integrity
   c. integrity, efficiency, diversity, independence, and simplicity
   d. conceptual simplicity, security, independence, integrity, and efficiency

_____ 35. Using network terminology, a relationship is called a(n) _____.
   a. member
   b. owner
   c. set
   d. table

_____ 36. The hierarchical database model is based on a _____.
   a. tree structure
   b. lack of a parent segment
   c. lack of a child segment
   d. matrix

_____ 37. The hierarchical database model uses the hierarchic sequence that always starts at the _____ of the tree.
   a. right side
   b. left side
   c. top
   d. bottom

_____ 38. The hierarchical database model depicts a set of _____ relationships.
   a. M:1
   b. 1:1
   c. 1:M
   d. M:N

_____ 39. Given its parent/child structure, the hierarchical model yields integrity and consistency; there cannot be _____.
   a. a root
   b. a large amount of data
   c. a child without a parent

    d. many transactions

____ 40. The hierarchical database is not very efficient when handling ____.
    a. large amounts of data
    b. few transactions
    c. many transactions
    d. 1:M relationships

____ 41. The hierarchical database models ____.
    a. have no implementation limitations
    b. promote database integrity
    c. have very strict standards
    d. have a simple navigational system

____ 42. A relational database model ____.
    a. does not require substantial hardware and system software overhead
    b. does not promote "islands of information" problems
    c. allows trained people to use a good system poorly
    d. lets the user operate in a human logical environment

____ 43. The OODM ____.
    a. adds semantic content
    b. has standards
    c. has a simple navigational system
    d. has a low system overhead that speeds transactions

____ 44. The network database models have a(n) ____.
    a. navigational system that yields simple design
    b. simple system that promotes efficiency
    c. owner/member relationship that promotes database integrity
    d. great deal of structural independence

____ 45. Database models were developed to ____.
    a. model real-world events or conditions
    b. deposit data within a single file
    c. keep data within multiple data repositories
    d. allow DBMSs to maintain loose control over the database activities

____ 46. Which of the following was NOT produced by the DBTG of CODASYL?
    a. Standard network specifications for a network schema
    b. Standard network specifications for a network sub-schema
    c. Standard specifications for a data management language
    d. Standard diagrams for database modeling known as ERD

____ 47. The RDBMS ____.
    a. performs functions provided by the hierarchical and network DBMS system
    b. does not manage data structures
    c. allows the user/designer to ignore the logical view of the database
    d. does not manage the details of physical storage

____ 48. Because an RDBMS hides the system's complexity from the user/designer, ____.
    a. it does not exhibit data independence
    b. it does not exhibit structural independence
    c. data management is easier
    d. data management is very difficult

____ 49. John is working in the customer table and needs to know what customers are located in Florida. To find the information he would ____.
    a. create a new table

b. create a new form
c. create a new query
d. utilize the Database Wizard

____ 50. Database models can be grouped into two categories: conceptual models and ____ models.
a. implementation
b. logical
c. physical
d. query

____ 51. In a network database each set is composed of two record types: an owner record and a ____ record.
a. root
b. child
c. member
d. renter

____ 52. Each row in the relational table is known as an entity ____.
a. instance
b. relationship
c. attribute
d. model

____ 53. Classes are organized into a class ____.
a. method
b. hierarchy
c. system
d. object

____ 54. In response to the increasing complexity of applications, two new data models emerged: the object-oriented data model and the ____ relational data model.
a. extended
b. flat-file
c. hierarchical
d. entity

____ 55. The ____ model is the relational model's challenge to the OODM.
a. ERD
b. network
c. hierarchical
d. KR

____ 56. Which of the following data models contains the least semantics?
a. Hierarchical
b. Network
c. Relational
d. Object-oriented

____ 57. Which of the following data models contains the most semantics?
a. Hierarchical
b. Network
c. Relational
d. Object-oriented

____ 58. Which of the following data models are dependent on their physical structure?
a. Object-oriented
b. Relational
c. Semantic
d. Hierarchical

____ 59. Which of the following database models is NOT still in use today?
   a. Object-oriented
   b. Network
   c. Relational
   d. ERD
____ 60. A data model must represent the ____ world as closely as possible.
   a. machine
   b. logical
   c. real
   d. abstract
____ 61. What modern development has dramatically changed the direction database technology was moving in?
   a. Object-oriented programming
   b. The Internet
   c. Y2K
   d. Mainframes
____ 62. A way of classifying data models is by degree of ____.
   a. difficulty
   b. knowledge
   c. abstraction
   d. unification
____ 63. Which of the following is not a degree of abstraction as defined by ANSI/SPARC?
   a. Conceptual
   b. Physical
   c. Internal
   d. External
____ 64. Successful database design is first and foremost based on ____.
   a. resource use
   b. cost savings
   c. programming ease
   d. end-user requirements
____ 65. Which of the following databases does NOT provide structural independence?
   a. network
   b. relational
   c. entity relationship
   d. object oriented
____ 66. The ____ model presents a global view of the database.
   a. network
   b. physical
   c. conceptual
   d. logical
____ 67. A(n) ____ model is independent of both hardware and software.
   a. conceptual
   b. external
   c. developmental
   d. logical
____ 68. The ____ model adapts a conceptual model to a specific DBMS.
   a. entity
   b. internal
   c. external

    d. database

____ 69. Which of the following requires the most detail in the internal model?
    a. Network
    b. Relational
    c. Semantic
    d. Entity relationship

____ 70. Which model represents the end user's view of the database?
    a. Internal
    b. Conceptual
    c. Physical
    d. External

____ 71. Which model operates at the lowest level of abstraction?
    a. Conceptual
    b. Internal
    c. External
    d. Physical

____ 72. What type of relationship is expressed with the phrase "Painter paints Painting"?
    a. 1:M
    b. 1:1
    c. M:1
    d. M:N

____ 73. What type of relationship is expressed with the phrase "Employee manages Store"?
    a. 1:M
    b. 1:1
    c. M:1
    d. M:N

____ 74. What type of relationship is expressed with the phrase "Student takes Class"?
    a. 1:M
    b. 1:1
    c. M:1
    d. M:N

____ 75. Which of the following is least likely to be a business rule as relates to data modeling?
    a. A customer may make many payments on an account.
    b. A machine operator may not work more than 10 hours in a 24-hour period.
    c. A training session cannot be scheduled for fewer than 10 employees or more than 30 employees.
    d. Casual Fridays take place in the summer.

Completion
Complete each statement.

76. Data in two or more tables can be related to each other by means of a(n) _____ entity characteristic.

77. The RDBMS performs the same basic functions provided by the hierarchical and _____ DBMS systems.

78. The _____ database is a collection of records that is logically organized to conform with the upside-down tree.

79. In the relational model, another name for a table is a(n) _____.

80. The network _____ is the conceptual organization of the entire database as viewed by the database administrator.

81. The _____ defines the portion of the database "seen" by the application programs that actually produce the desired information from the data contained within the database.

82. A(n) _____ is a matrix consisting of a series of row/column intersections.

83. A(n) _____ is a characteristic of an entity.

84. A(n) _____ describes an association among two (or more) entities.

85. The relationship described by the phrase "the Customer generates the Invoice" is _____.

86. A(n) _____ is a brief, concise, and unambiguous description of a policy.

87. The first database model developed was the _____ model.

88. In a hierarchical model, each level of the tree is called a(n) _____.

89. The top level in a hierarchical model is known as the _____.

90. A relational _____ is a visual representation of a relational database's entities, attributes, and relationships.

91. The _____ model was created to represent complex data relationships more effectively than the hierarchical model could and to impose a database standard.

92. In the network model, a(n) _____ language is used to define data characteristics.

93. In 1975, the ANSI _____ augmented the network model database standards.

94. In network database terminology, a relationship is called a(n) _____.

95. In network model terminology, each set is composed of a(n) _____ and a member.

96. _____ relationships are easier to represent in the network model than the hierarchical model.

97. The _____ model is to database design what the automatic transmission is to cars.

98. The query language for a relational database is _____.

99. The _____ data model was developed by Peter Chen.

100. A(n) _____ is a person, place, or thing about which information is stored.

Essay

101. List the different types of relationships and provide an example of each.

102. When designing a database, it is important to understand the business rules. Where do these rules come from? How do you go about gathering them? What are some of the problems that might occur when gathering business rules and how can you avoid them?

103. List at least three of the advantages of using a hierarchical database.

ch2
Answer Section

TRUE/FALSE

    1. ANS: T   PTS: 1   REF: 36
    2. ANS: T   PTS: 1   REF: 36
    3. ANS: T   PTS: 1   REF: 37
    4. ANS: T   PTS: 1   REF: 30
    5. ANS: F   PTS: 1   REF: 29
    6. ANS: T   PTS: 1   REF: 29
    7. ANS: F   PTS: 1   REF: 29
    8. ANS: F   PTS: 1   REF: 30
    9. ANS: F   PTS: 1   REF: 30
  10. ANS: F   PTS: 1   REF: 31
  11. ANS: T   PTS: 1   REF: 31
  12. ANS: F   PTS: 1   REF: 33
  13. ANS: T   PTS: 1   REF: 33
  14. ANS: F   PTS: 1   REF: 33
  15. ANS: T   PTS: 1   REF: 33
  16. ANS: F   PTS: 1   REF: 33
  17. ANS: T   PTS: 1   REF: 44
  18. ANS: F   PTS: 1   REF: 33
  19. ANS: F   PTS: 1   REF: 33
  20. ANS: F   PTS: 1   REF: 35
  21. ANS: T   PTS: 1   REF: 34
  22. ANS: F   PTS: 1   REF: 46
  23. ANS: T   PTS: 1   REF: 35
  24. ANS: T   PTS: 1   REF: 35
  25. ANS: F   PTS: 1   REF: 35
  26. ANS: T   PTS: 1   REF: 35
  27. ANS: F   PTS: 1   REF: 36
  28. ANS: T   PTS: 1   REF: 44
  29. ANS: F   PTS: 1   REF: 39
  30. ANS: T   PTS: 1   REF: 44-45

MULTIPLE CHOICE

  31. ANS: D   PTS: 1   REF: 36
  32. ANS: B   PTS: 1   REF: 36
  33. ANS: C   PTS: 1   REF: 36
  34. ANS: D   PTS: 1   REF: 44
  35. ANS: C   PTS: 1   REF: 35
  36. ANS: A   PTS: 1   REF: 33
  37. ANS: B   PTS: 1   REF: 33-34

38. ANS: C	PTS: 1	REF: 33
39. ANS: C	PTS: 1	REF: 33
40. ANS: B	PTS: 1	REF: 34
41. ANS: B	PTS: 1	REF: 44
42. ANS: D	PTS: 1	REF: 36
43. ANS: A	PTS: 1	REF: 41
44. ANS: C	PTS: 1	REF: 35
45. ANS: A	PTS: 1	REF: 29
46. ANS: D	PTS: 1	REF: 34-35
47. ANS: A	PTS: 1	REF: 36
48. ANS: C	PTS: 1	REF: 36
49. ANS: C	PTS: 1	REF: 36
50. ANS: A	PTS: 1	REF: 43-46
51. ANS: C	PTS: 1	REF: 35
52. ANS: A	PTS: 1	REF: 39
53. ANS: B	PTS: 1	REF: 42
54. ANS: A	PTS: 1	REF: 33
55. ANS: A	PTS: 1	REF: 43
56. ANS: A	PTS: 1	REF: 45
57. ANS: D	PTS: 1	REF: 45
58. ANS: D	PTS: 1	REF: 45
59. ANS: B	PTS: 1	REF: 45
60. ANS: C	PTS: 1	REF: 45
61. ANS: B	PTS: 1	REF: 43
62. ANS: C	PTS: 1	REF: 46
63. ANS: B	PTS: 1	REF: 46
64. ANS: D	PTS: 1	REF: 46
65. ANS: A	PTS: 1	REF: 44
66. ANS: C	PTS: 1	REF: 48
67. ANS: A	PTS: 1	REF: 48
68. ANS: B	PTS: 1	REF: 48
69. ANS: A	PTS: 1	REF: 49
70. ANS: D	PTS: 1	REF: 47
71. ANS: D	PTS: 1	REF: 49
72. ANS: A	PTS: 1	REF: 30
73. ANS: B	PTS: 1	REF: 30
74. ANS: D	PTS: 1	REF: 30
75. ANS: D	PTS: 1	REF: 31

COMPLETION

76. ANS: common

PTS: 1　　　REF: 36
77. ANS: network

PTS: 1　　　REF: 36

78. ANS: hierarchical

    PTS: 1   REF: 33

79. ANS: relation

    PTS: 1   REF: 36

80. ANS: schema

    PTS: 1   REF: 34

81. ANS: subschema

    PTS: 1   REF: 34

82. ANS: table

    PTS: 1   REF: 36

83. ANS: attribute

    PTS: 1   REF: 30

84. ANS: relationship

    PTS: 1   REF: 30

85. ANS:
one-to-many
one to many
1 to many
1:M

    PTS: 1   REF: 30

86. ANS: business rule

    PTS: 1   REF: 31

87. ANS: hierarchical

    PTS: 1   REF: 33

88. ANS: segment

    PTS: 1   REF: 33

89. ANS: root

    PTS: 1   REF: 33

90. ANS: schema

    PTS: 1   REF: 36

91. ANS: network

    PTS: 1   REF: 34

92. ANS: data management

    PTS: 1   REF: 35

93. ANS:
SPARC
Standards Planning and Requirements Committee

PTS: 1   REF: 46
94. ANS: set

PTS: 1   REF: 35
95. ANS: owner

PTS: 1   REF: 35
96. ANS:
M:N
Many-to-many
many to many

PTS: 1   REF: 45
97. ANS: relational

PTS: 1   REF: 36
98. ANS:
SQL
structured query language

PTS: 1   REF: 37
99. ANS:
ER
entity relationship

PTS: 1   REF: 38
100. ANS: entity

PTS: 1   REF: 30

ESSAY

101. ANS:
There are three types of relationships:
1) One-to-One (1:1) relationships: Employee manages Store
2) One-to-Many (1:M) relationships: Painter paints Painting
3) Many-to-Many (M:N or M:M) relationships: Student takes Class

PTS: 1   REF: 30
102. ANS:

The main sources of business rules are company managers, policy makers, department managers, and written documentation–such as a company's procedures, standards, or operations manuals. A faster and more direct source of business rules is direct interviews with end users. Unfortunately, because perceptions differ, end users sometimes are a less-reliable source when it comes to specifying business rules. For example, a maintenance department mechanic may believe that any mechanic may initiate a maintenance procedure, when actually only mechanics with inspection authorization may perform such a task. Such a distinction may seem trivial, but it can have major legal consequences. Although end users are crucial contributors to the development of business rules, it pays to verify end-user perceptions. Often, interviews with several people who perform the same job can yield very different perceptions of what the job components are. While such a discovery may point to "management problems," that general diagnosis does not help the database designer. Given the discovery of such problems, the database designer's job is to reconcile such differences and to verify the results of the reconciliation to ensure that the business rules are appropriate and accurate.

PTS: 1   REF: 31

103. ANS:
Any three of the following:
1) Conceptual simplicity. The relationship between the various layers of the model is logically simple. Therefore, it becomes easier to view the database conceptually, thus making its design process simpler.
2) Database security. Database security is provided and enforced by the DBMS. Therefore, security is enforced uniformly throughout the system, without having to rely on the efforts of individual applications programmers who may have very different ideas about the extent and type of required security.
3) Data independence. The DBMS creates an environment in which data independence can be maintained, thereby substantially decreasing programming effort and program maintenance. (Data independence exists when a change in a data type will be automatically cascaded throughout the database by the DBMS, thus eliminating the need to make changes in the program segments that reference the changed data type.)
4) Database integrity. Given the parent/child relationship, there is always a link between the parent segment and its child segment(s). Because the child segment is always automatically referenced to its parent, the hierarchical model promotes database integrity.
5) Efficiency. The hierarchical data model is very efficient when a database contains a large volume of data in 1:M relationships and when users require large numbers of transactions, using data having relationships that are fixed over time.

PTS: 1   REF: 33 | 44