

1) A physical representation of a database is called a data model.

- a. True
- b. False

Answer: b

Diff: 2

Type: TF

Page Reference: 152

Topic: Q2

Skill: RECALL

2) A data model describes the data and relationships that will be stored in the database.

- a. True
- b. False

Answer: a

Diff: 2

Type: TF

Page Reference: 152

Topic: Q2

Skill: RECALL

3) The data model should summarize the data requirements as derived from interviews with the end users.

- a. True
- b. False

Answer: a

Diff: 3

Type: TF

Page Reference: 152

Topic: Q2

Skill: APPLIED

4) The Object-Relationship (OR) technique is the most popular one for creating a data model.

- a. True
- b. False

Answer: b

Diff: 2

Type: TF

Page Reference: 152

Topic: Q3

Skill: RECALL

5) Once the entities have been defined, the data model can be implemented directly on the DBMS.

a. True

b. False

Answer: b

Diff: 2

Type: TF

Page Reference: 152

Topic: Q2

Skill: RECALL

6) "Address" would be a likely attribute of a customer entity in a database application.

a. True

b. False

Answer: a

Diff: 2

Type: TF

Page Reference: 153

Topic: Q2

Skill: RECALL

7) "Name" would be a good identifier for a customer entity in a database application.

a. True

b. False

Answer: b

Diff: 3

Type: TF

Page Reference: 153

Topic: Q3

Skill: APPLIED

8) "PartNumber" would be a good identifier for a part entity in a database application.

- a. True
- b. False

Answer: a

Diff: 3

Type: TF

Page Reference: 153

Topic: Q3

Skill: RECALL

9) Each entity should have one unique identifier.

- a. True
- b. False

Answer: a

Diff: 2

Type: TF

Page Reference: 153

Topic: Q3

Skill: RECALL

10) In E-R diagrams, entities are represented with rectangles.

- a. True
- b. False

Answer: a

Diff: 2

Type: TF

Page Reference: 154

Topic: Q3

Skill: RECALL

11) The notation N:N indicates a many-to-many relationship.

- a. True
- b. False

Answer: b

Diff: 2

Type: TF

Page Reference: 154

Topic: Q3

Skill: RECALL

12) In E-R diagrams, attributes can be represented with crow's feet.

a. True

b. False

Answer: b

Diff: 3

Type: TF

Page Reference: 154

Topic: Q3

Skill: RECALL

13) Normalization is a process that helps ensure that the tables from the database design process are well structured.

a. True

b. False

Answer: a

Diff: 2

Type: TF

Page Reference: 156

Topic: Q4

Skill: RECALL

14) In a 1:N type of relationship, the foreign key is stored on the "1" side.

a. True

b. False

Answer: b

Diff: 3

Type: TF

Page Reference: 158

Topic: Q4

Skill: RECALL

15) E-R diagrams are too cumbersome for use in database design discussions.

- a. True
- b. False

Answer: b

Diff: 3

Type: TF

Page Reference: 158

Topic: Q4

Skill: RECALL

16) An entity is something you want to track.

- a. True
- b. False

Answer: a

Diff: 2

Type: TF

Page Reference: 153

Topic: Q3

Skill: RECALL

17) A data model should show how users see their “world”.

- a. True
- b. False

Answer: a

Diff: 2

Type: TF

Page Reference: 152

Topic: Q2

Skill: RECALL

18) Users validate and approve the data model prior to its transformation into a database design.

- a. True
- b. False

Answer: a

Diff: 2

Type: TF
Page Reference: 152
Topic: Q2
Skill: RECALL

- 19) Users need to verify the data model for correctness.
- a. True
 - b. False

Answer: a
Diff: 1
Type: TF
Page Reference: 152
Topic: Q2
Skill: RECALL

- 20) Any mistake in the data modeling stage will come back to haunt you.
- a. True
 - b. False

Answer: a
Diff: 2
Type: TF
Page Reference: 152
Topic: Q2
Skill: APPLIED

- 21) At times you may not place a field in a table because it can be readily computed in forms or reports.
- a. True
 - b. False

Answer: a
Diff: 2
Type: TF
Page Reference: 163
Topic: Q6
Skill: RECALL

22) Normalization is a trade-off between the elimination of data duplication and processing speed.

- a. True
- b. False

Answer: a

Diff: 3

Type: TF

Page Reference: 157

Topic: Q4

Skill: RECALL

23) When a student can have more than one adviser it is a N:M relationship.

- a. True
- b. False

Answer: a

Diff: 1

Type: TF

Page Reference: 154

Topic: Q4

Skill: RECALL

24) When two rows in a database are supposed to refer to the same thing and they do not, you have a data integrity problem.

- a. True
- b. False

Answer: a

Diff: 2

Type: TF

Page Reference: 156

Topic: Q4

Skill: RECALL

25) The easiest time to change a database design is during the data modeling stage.

- a. True
- b. False

Answer: a

Diff: 1

Type: TF

Page Reference: 160

Topic: Q5

Skill: RECALL

26) UML stands for

- a. Unified Modeling Language.
- b. Unified Metadata Language.
- c. United Metadata Language.
- d. Universal Metadata Language.
- e. Universal Modeling Language.

Answer: a

Diff: 1

Type: MC

Page Reference: 152

Topic: Q3

Skill: RECALL

27) _____ is the process of converting poorly structured tables into two or more well-structured tables.

- a. Sharing
- b. Reengineering
- c. Normalization
- d. Decentralization
- e. Redesigning

Answer: c

Diff: 1

Type: MC

Page Reference: 156

Topic: Q4

Skill: RECALL

28) "One department can have many advisers" is an example of

- a. a one-to-many relationship.
- b. maximum cardinality relationship.
- c. a minimum cardinality relationship.
- d. a one-to-one relationship.
- e. a many-to-many relationship.

Answer: a

Diff: 1

Type: MC

Page Reference: 154

Topic: Q3

Skill: RECALL

29) Entities have _____ that describes characteristics of the entity.

- a. relations
- b. properties
- c. attributes
- d. names
- e. files

Answer: c

Diff: 1

Type: MC

Page Reference: 153

Topic: Q3

Skill: RECALL

30) Entities have an _____ which is an attribute whose value is associated with one and only one entity instance.

- a. index
- b. agenda
- c. attribute
- d. initial
- e. identifier

Answer: e

Diff: 2

Type: MC

Page Reference: 153

Topic: Q3

Skill: RECALL

31) A person, place or object would be represented in a database application as a(n)

- a. entity.
- b. record.
- c. table.
- d. class.
- e. object.

Answer: a

Diff: 1

Type: MC

Page Reference: 153

Topic: Q3

Skill: RECALL

32) A(n) _____ diagram is like a blueprint of a database application.

- a. flowchart
- b. O-O
- c. workflow
- d. Entity-Relationship (E-R)
- e. O-R

Answer: d

Diff: 2

Type: MC

Page Reference: 154

Topic: Q3

Skill: RECALL

33) _____ is (are) the most popular diagramming tool(s) for database applications.

- a. O-O

- b. E-R diagrams
- c. Flowcharts
- d. Workflows
- e. UML

Answer: b

Diff: 2

Type: MC

Page Reference: 154

Topic: Q3

Skill: RECALL

34) In a relational database, each entity is described by

- a. characters.
- b. data.
- c. bytes.
- d. attributes.
- e. records.

Answer: d

Diff: 2

Type: MC

Page Reference: 153

Topic: Q3

Skill: RECALL

35) When creating tables for an entity, the identifier of the entity becomes the _____ of the table.

- a. master column.
- b. key.
- c. index attribute.
- d. foreign key.
- e. index field.

Answer: b

Diff: 2

Type: MC

Page Reference: 158

Topic: Q4

Skill: RECALL

36) If the same data element is stored differently in another table, this is said to be an issue of

- a. inaccurate data.
- b. entity integrity.
- c. data repetition.
- d. normalization.
- e. data integrity.

Answer: e

Diff: 3

Type: MC

Page Reference: 157

Topic: Q4

Skill: RECALL

37) A(n) _____ data model captures the entities and their relationships in a database application.

- a. workflow
- b. O-O
- c. Semantic Object
- d. E-R
- e. flowchart

Answer: d

Diff: 2

Type: MC

Page Reference: 152

Topic: Q3

Skill: RECALL

38) An example of a one-to-many type of relationship might be

- a. an employee cannot be assigned a computer.
- b. an employee can be assigned an office.
- c. an employee can be assigned more than one computer.
- d. an employee can be assigned one and only one computer.
- e. an employee is assigned a company car.

Answer: c

Diff: 2

Type: MC

Page Reference: 154

Topic: Q3

Skill: APPLIED

39) The most confusing type of a relationship is the _____ relationship.

- a. 1:N
- b. M:M
- c. N:M
- d. 1:1
- e. N:1

Answer: c

Diff: 2

Type: MC

Page Reference: 155

Topic: Q3

Skill: RECALL

40) _____ is used to indicate a many-to-many relationship.

- a. N:M
- b. 1:M
- c. M:N
- d. M:M
- e. 1:1

Answer: a

Diff: 1

Type: MC

Page Reference: 154

Topic: Q3

Skill: RECALL

41) _____ would be the best identifier attribute for an employee table.

- a. Birth Date
- b. Social Insurance number
- c. Last Name
- d. Phone number
- e. First Name and Last Name

Answer: b

Diff: 2

Type: MC

Page Reference: 153

Topic: Q3

Skill: APPLIED

42) _____ is the last step in developing a database application.

- a. Designing the tables with the keys
- b. Getting the information requirements
- c. Reviewing the data model with users
- d. Creating the database
- e. Creating a data model

Answer: d

Diff: 2

Type: MC

Page Reference: 152

Topic: Q2

Skill: RECALL

43) If a student is allowed to have multiple majors and advisers are assigned to multiple students, these would be examples of _____ relationships.

- a. M:N

- b. N:1
- c. 1:1
- d. N:M
- e. 1:N

Answer: d

Diff: 2

Type: MC

Page Reference: 154

Topic: Q3

Skill: RECALL

44) The _____ shows the number of entities that can be involved in a relationship.

- a. E-R
- b. UML
- c. data integrity
- d. workflow
- e. cardinality

Answer: e

Diff: 1

Type: MC

Page Reference: 155

Topic: Q3

Skill: RECALL

45) _____ is the process of converting poorly-structured tables into two or more well-structured tables.

- a. Application development
- b. Normalization
- c. Structuring
- d. Clarification
- e. Conversion

Answer: b

Diff: 1

Type: MC

Page Reference: 156

Topic: Q4

Skill: RECALL

46) Database practitioners classify tables into various _____ depending on the type of data integrity problems to which they might be subject.

- a. layers
- b. categories
- c. normal forms
- d. strata
- e. types

Answer: c

Diff: 3

Type: MC

Page Reference: 157

Topic: Q4

Skill: RECALL

47) In a one-to-many relationship, the foreign key is stored in the table that is on the _____ side of the relationship.

- a. weak
- b. many
- c. many-to many
- d. one
- e. cardinal

Answer: b

Diff: 2

Type: MC

Page Reference: 159

Topic: Q4

Skill: RECALL

48) A N:M relationship is represented with a(n)

- a. intersection table.
- b. entity.
- c. composite table.
- d. linking field.
- e. index field.

Answer: a

Diff: 3

Type: MC

Page Reference: 160

Topic: Q4

Skill: RECALL

49) The cardinality of the relationship between a employer and its employees is

- a. 1:N
- b. M:N
- c. N:M
- d. 1:1
- e. N:1

Answer: a

Diff: 1

Type: MC

Page Reference: 155

Topic: Q3

Skill: RECALL

50) A 1:N relationship relates _____ record(s) to _____ record(s) in a database.

- a. many, one
- b. one, three
- c. one, one
- d. many, many
- e. one, many

Answer: e

Diff: 1

Type: MC

Page Reference: 155

Topic: Q3

Skill: RECALL

51) Understanding how to interpret E-R diagrams will help you interpret _____ with a bit of study.

- a. flow diagrams
- b. relational models
- c. UML models
- d. O-O models
- e. workflow models

Answer: c

Diff: 2

Type: MC

Page Reference: 152

Topic: Q3

Skill: RECALL

52) On difficulty with designing database is the _____ number of possibilities of what to include.

- a. small
- b. minimal
- c. large
- d. fixed
- e. known

Answer: c

Diff: 1

Type: MC

Page Reference: 152

Topic: Q2

Skill: RECALL

53) Database developers _____ as the first step in development.

- a. interview users
- b. create a relational model
- c. create an E-R diagram
- d. create a data model
- e. write queries

Answer: a

Diff: 1

Type: MC

Page Reference: 151

Topic: Q2

Skill: RECALL

54) There is (are) _____ style(s) of E-R diagrams.

- a. 2
- b. one
- c. several
- d. 15
- e. 10

Answer: c

Diff: 2

Type: MC

Page Reference: 155

Topic: Q3

Skill: RECALL

55) Tables are transformed into _____ to remove duplicate data and other problems.

- a. regular design
- b. normalized design
- c. regular form
- d. normal form
- e. relational form

Answer: d

Diff: 2

Type: MC

Page Reference: 157

Topic: Q4

Skill: RECALL

56) On the many side of a relationship you place the _____ of the _____ relationship to represent the relationships in the database.

- a. foreign key, one side
- b. primary key, one side
- c. index key, one side
- d. primary key, many side
- e. foreign key, many side

Answer: b

Diff: 3

Type: MC

Page Reference: 159

Topic: Q4

Skill: RECALL

57) When you place data into a database you need to place (the) _____ records first.

- a. first
- b. foreign key
- c. primary key
- d. any
- e. indexed

Answer: c

Diff: 3

Type: MC

Page Reference: 158

Topic: Q4

Skill: RECALL

58) The user's review of the data model is

- a. done after the database is programmed

- b. treated as a casual process
- c. not necessary
- d. not usually done
- e. crucial

Answer: e

Diff: 2

Type: MC

Page Reference: 161

Topic: Q5

Skill: RECALL

59) In an automobile table the _____ would make the best table key

- a. model
- b. a combination of make and model
- c. make
- d. license plate number
- e. VIN

Answer: e

Diff: 2

Type: MC

Page Reference: 158

Topic: Q4

Skill: APPLIED

60) A crow's foot diagram is a type of

- a. relationship map.
- b. data model.
- c. E-R diagram.
- d. UML model.
- e. normalization model.

Answer: c

Diff: 1

Type: MC

Page Reference: 155

Topic: Q3

Skill: RECALL

61) Normalization is a process for ensuring that the tables in a database design are efficient and well-structured.

Diff: 2

Type: ES

Page Reference: 156

Topic: Q4

Skill: RECALL

62) UML is the second most popular data modeling technique.

Diff: 3

Type: ES

Page Reference: 152

Topic: Q3

Skill: RECALL

63) An E-R data model captures both the entities involved and the relationships between the entities.

Diff: 3

Type: ES

Page Reference: 152

Topic: Q3

Skill: RECALL

64) The easiest time to make changes to the database structure is during the data modeling phase.

Diff: 2

Type: ES

Page Reference: 160

Topic: Q5

Skill: RECALL

65) A(n) identifier is an attribute or group of attributes whose value is associated with one and only one entity instance.

Diff: 2

Type: ES

Page Reference: 153

Topic: Q3
Skill: RECALL

66) N:M is the notation used to describe a many-to-many relationship.

Diff: 1
Type: ES
Page Reference: 154
Topic: Q3
Skill: RECALL

67) Maximum cardinality indicates the most entities that can be involved in a relationship.

Diff: 2
Type: ES
Page Reference: 155
Topic: Q3
Skill: RECALL

68) In an E-R data model, the crow's feet symbol is used to indicate the many side of the relationship.

Diff: 2
Type: ES
Page Reference: 155
Topic: Q3
Skill: RECALL

69) The number of entities that can be involved in a relationship in a data model is called the cardinality.

Diff: 2
Type: ES
Page Reference: 155
Topic: Q3
Skill: RECALL

70) The foreign key is put on the many side of a one-to-many relationship.

Diff: 2
Type: ES
Page Reference: 158
Topic: Q4
Skill: RECALL

71) In order to represent a(n) N:M type of relationship, a third table is created using the keys from the two entities being related.

Diff: 3

Type: ES

Page Reference: 155

Topic: Q3

Skill: RECALL

72) When a table contains inaccurate data for the same data elements in a table, it is said that the data in the table lacks integrity.

Diff: 2

Type: ES

Page Reference: 156

Topic: Q4

Skill: RECALL

73) A(n) attribute is a characteristic of an entity.

Diff: 1

Type: ES

Page Reference: 153

Topic: Q3

Skill: RECALL

74) A crow's foot diagram is a type of E-R diagram.

Diff: 1

Type: ES

Page Reference: 155

Topic: Q3

Skill: RECALL

75) Entities have relationships with one another.

Diff: 1

Type: ES

Page Reference: 153

Topic: Q3

Skill: RECALL

76) A(n) identifier is an attribute or group of attributes whose value is associated with one and only one entity instance.

Diff: 2

Type: ES
Page Reference: 153
Topic: Q3
Skill: RECALL

77) A(n) entity is something users want to track.

Diff: 1
Type: ES
Page Reference: 153
Topic: Q3
Skill: RECALL

78) Normal form removes duplicate data and other problems from a table.

Diff: 2
Type: ES
Page Reference: 157
Topic: Q4
Skill: RECALL

79) The easiest time to change a database is during the data modeling stage.

Diff: 2
Type: ES
Page Reference: 160
Topic: Q5
Skill: RECALL

80) Data integrity problems can occur when data is duplicated.

Diff: 2
Type: ES
Page Reference: 157
Topic: Q4
Skill: RECALL

81) Data integrity problems make your database unreliable.

Diff: 2
Type: ES
Page Reference: 158
Topic: Q4
Skill: APPLIED

82) Entities have a(an) Identifier, which is an attribute whose value is related to one and only one entity instance.

Diff: 1

Type: ES

Page Reference: 151

Topic: Q2

Skill: RECALL

83) Describe how normalization works.

Answer:

Normalization is the process of converting poorly structured tables into two or more well-structured tables.

Diff: 3

Type: ES

Page Reference: 156

Topic: Q4

Skill: RECALL

84) What are the stages in developing a database application? At what point is it easiest to make changes?

Answer:

Once a suitable application has been identified, the information requirements of the various users need to be identified. This entails interviewing the users about the reports, forms, and screens of data they need to access. A skilled database designer then identifies all the entities, attributes, and relationships needed and arrives at a data model for the application using E-R or possible UML, as the data modeling tool. This data model is then converted into a set of tables with primary and foreign keys that capture all the relationships previously identified in the data model. This set of tables is then normalized so that it is not subject to all the various anomalies that poorly designed databases have, and then the tables and attributes are created using the target DBMS for the application. Users will be involved in testing the system at all points of the development process, but as a rule, it is usually easiest to make changes earlier in the process. That is why it is important to test the data model with a wide range of queries and reports to make sure that it meets all the user requirements, since it is harder to change the database once it is implemented in the DBMS.

Diff: 3

Type: ES

Page Reference: 152

Topic: Q2

Skill: RECALL

85) What are the different types of relationships represented in a data model? How are these captured by the use of keys?

Answer:

There are four different types of relationships that have to be modeled in a data model; a 1:1, 1:N, N:1 and the most complex, N:M (many-to-many). In a 1:N and N:1 type of relationship, the foreign key is stored on the "many" side. In a 1:1 relationship, it can be stored on either side of the relationship. If the designer feels that the relationship may eventually change to a 1:N type, then the key should be stored on the potential "many" side. In a N:M type of relationship, a new intersection table is created using the identifier from each of the linked tables to form a new "composite" key.

Diff: 2

Type: ES

Page Reference: 154

Topic: Q3

Skill: APPLIED

86) What are the different keys used for in relational databases? How do they maintain the integrity of the information in the database applications?

Answer:

The primary key is also known as the identifier. This is the field or collection of fields that serves to uniquely identify a specific record. Setting the primary key enables the DBMS to maintain what is called entity integrity, which prevents any duplicates from being stored in that table. This key can also be stored as a field in other related tables. As such, it is known as a foreign key and helps to maintain referential integrity. This means that if a related record is deleted or modified, the DBMS will know that the other record will also have to be deleted or modified.

Diff: 3

Type: ES

Page Reference: VARIOUS

Topic: VARIOUS

Skill: APPLIED

87) Describe an E-R diagram.

Answer:

An E-R diagram is a high level data model of a database that list the following components:

1. Entities and their attributes including the potential primary keys of the entity
2. The relationships between the entities and their cardinalities

Diff: 3

Type: ES

Page Reference: 154

Topic: Q3

Skill: RECALL