1.	**(T or F) 1) When you are given a set of tables and asked to create a database to store their data, the first step is to assess the tables' structure and content.**	TRUE Diff: 1 Page Ref: 128
2.	**(T or F) 2) The first step in assessing table structure is to count rows and examine columns.**	TRUE Diff: 2 Page Ref: 128-129 Fig 4-1
3.	**(T or F) 3) To count the number of rows in a table, use the SQL construct COUNT(ROWS).**	FALSE Diff: 2 Page Ref: 128
4.	**(T or F) 4) To determine the number and type of columns in a table, use the SQL construct COUNT(*).**	FALSE Diff: 1 Page Ref: 128
5.	**(T or F) 5) To limit the number of rows retrieved from a table, use the SQL keyword TOP.**	TRUE Diff: 1 Page Ref: 128
6.	**(T or F) 6) The second step in assessing table structure is to examine data values and determine dependencies and keys.**	TRUE Diff: 2 Page Ref: 128-129 Fig 4-1
7.	**(T or F) 7) When examining data values as a part of assessing table structure, you should try to determine functional dependencies.**	TRUE Diff: 1 Page Ref: 128-129 Fig 4-1
8.	**(T or F) 8) When examining data values as a part of assessing table structure, you should try to determine multivalued dependencies.**	TRUE Diff: 1 Page Ref: 128-129 Fig 4-1
9.	**(T or F) 9) When examining data values as a part of assessing table structure, you should try to determine the table's primary key.**	TRUE Diff: 1 Page Ref: 128-129 Fig 4-1
10.	**(T or F) 10) When examining data values as a part of assessing table structure, there is no need to try to determine candidate keys other than the table's primary key.**	FALSE Diff: 1 Page Ref: 128-129 Fig 4-1
11.	**(T or F) 11) When examining data values as a part of assessing table structure, there is no need to try to determine foreign keys.**	FALSE Diff: 1 Page Ref: 128-129 Fig 4-1
12.	**(T or F) 12) The third step in assessing table structure is to check the validity of presumed referential integrity constraints.**	TRUE Diff: 2 Page Ref: 128-1129 Fig 4-1
13.	**(T or F) 13) Database design varies depending on whether you're building an updateable database or a read-only database.**	TRUE Diff: 2 Page Ref: 129
14.	**(T or F) 14) Normalization eliminates modification anomalies and data duplication.**	FALSE Diff: 3 Page Ref: 129 Fig 4-2
15.	**(T or F) 15) The presence of one or more foreign keys in a relation means that we cannot eliminate duplicated data in that table.**	TRUE Diff: 2 Page Ref: 129
16.	**(T or F) 16) Normalization requires applications to use more complex SQL since they will need to write subqueries and joins to recombine data stored in separate relations.**	TRUE Diff: 2 Page Ref: 129 Fig 4-2
17.	**(T or F) 17) The standard sales order/line item pattern is a classic example of unneeded normalization.**	FALSE Diff: 2 Page Ref: 131
18.	**(T or F) 18) Multivalued dependencies create anomalies so serious that multivalued dependencies must always be eliminated.**	TRUE Diff: 1 Page Ref: 132

19. **(T or F) 19) To eliminate multivalued dependencies, normalize your tables so that they are all in BCNF.**	FALSE Diff: 3 Page Ref: 132
20. **(T or F) 20) Creating a read-only database is a job often given to beginning database professionals.**	TRUE Diff: 1 Page Ref: 132
21. **(T or F) 21) Read-only databases are often updated.**	FALSE Diff: 2 Page Ref: 132
22. **(T or F) 22) Design guidelines and priorities are the same whether you're working with an updateable database or a read-only database.**	FALSE Diff: 1 Page Ref: 132
23. **(T or F) 23) Normalization is an advantage for a read-only database.**	FALSE Diff: 2 Page Ref: 132
24. **(T or F) 24) Denormalization is the process of joining previously normalized tables back together.**	TRUE Diff: 1 Page Ref: 132
25. **(T or F) 25) Denormalization reduces the complexity of the SQL statements needed in an application to read required data.**	TRUE Diff: 2 Page Ref: 133
26. **(T or F) 26) Read-only databases seldom use more than one copy of a set of same data.**	FALSE Diff: 2 Page Ref: 134
27. **(T or F) 27) Multivalued dependencies show up under a different name as the multivalued, multicolumn problem.**	TRUE Diff: 1 Page Ref: 135-136
28. **(T or F) 28) When you are creating a database from existing data, you will have only minor problems with inconsistent values.**	FALSE Diff: 1 Page Ref: 111
29. **(T or F) 29) Null values are a problem because they are ambiguous.**	TRUE Diff: 1 Page Ref: 137
30. **(T or F) 30) General-purpose remarks columns rarely contain important data.**	FALSE Diff: 1 Page Ref: 138139
31. **31) When you are given a set of tables and asked to create a database to store their data, the first step is to _____.** **A) assess the existing tables' structure and content** **B) design the database structure** **C) create one or more new tables** **D) move the data into the new database** **E) design the applications that will use the database**	A Diff: 1 Page Ref: 128-129 Fig 4-1
32. **32) The first step in assessing table structure includes _____.** **A) counting rows** **B) examining columns** **C) examining data values** **D) A and B** **E) B and C**	D Diff: 2 Page Ref: 128-129 Fig 4-1
33. **33) The second step in assessing table structure includes _____.** **A) counting rows** **B) examining columns** **C) examining data values** **D) A and B** **E) B and C**	C Diff: 2 Page Ref: 128-129 Fig 4-1
34. **34) During the second step of the assessing table structure, you are trying to determine _____.** **A) multivalued dependencies** **B) functional dependencies** **C) foreign keys** **D) A and B** **E) A, B and C**	E Diff: 2 Page Ref: 128-12 Fig 4-1
35. **35) During the second step of the assessing table structure, you are trying to determine _____.** **A) primary keys** **B) candidate keys** **C) foreign keys** **D) A and B** **E) A, B and C**	E Diff: 2 Page Ref: 128-129 Fig 4-1
36. **36) To count the number of rows in a table, use the SQL construct _____.** **A) SELECT *** **B) SELECT TOP n *** **C) SELECT COUNT(TOP n)** **D) SELECT COUNT(*)** **E) SELECT COUNT ***	D Diff: 3 Page Ref: 128

37. **37) The SQL function COUNT _____.**
A) counts the number of columns in a table
B) counts the number of rows in a table
C) counts the number of tables in a database
D) A and C
E) B and C

B
Diff: 1
Page Ref: 128

38. **38) To limit the number of rows retrieved from a table, use the SQL construct _____.**
A) SELECT *
B) SELECT TOP n *
C) SELECT COUNT(TOP n)
D) SELECT COUNT(*)
E) SELECT COUNT *

B
Diff: 2
Page Ref: 128

39. **39) The SQL keyword TOP _____.**
A) limits the number of columns retrieved from a table
B) limits the number of rows retrieved from a table
C) limits the number of tables retrieved from a database
D) A and C
E) B and C

B
Diff: 1
Page Ref: 128

40. **40) You have been given two tables, CUSTOMER and SALE. You want to check the referential integrity constraint: SALE.CustomerNumber must exist in CUSTOMER.CustomerNumber**
You run the following SQL query:
SELECT CustomerNumber
FROM SALE
WHERE CustomerNumber NOT IN
(SELECT CustomerNumber
FROM SALE, CUSTOMER
WHERE SALE.CustomerNumber = CUSTOMER.CustomerNumber);
What is shown in the results of this query?
A) All values of CustomerNumber that match the constraint.
B) All values of CustomerNumber that violate the constraint.
C) All values of CustomerNumber where SALE.CustomerNumber = CUSTOMER.CustomerNumber.
D) A and C
E) B and C

B
Diff: 3
Page Ref: 128

41. **41) The advantages of normalization include _____.**
A) the elimination of modification anomalies
B) the elimination of duplicated data
C) more complex SQL for multitable subqueries and joins
D) A and B
E) A, B and C

A
Diff: 3
Page Ref: 129 Fig 4-2

42. **42) The disadvantages of normalization include _____.**
A) the elimination of modification anomalies
B) the elimination of duplicated data
C) more complex SQL for multitable subqueries and joins
D) A and B
E) A, B and C

C
Diff: 1
Page Ref: 129 Fig 4-2

43. **43) The presence of one or more foreign keys in a relation prevents _____.**
A) the elimination of modification anomalies
B) the elimination of duplicated data
C) more complex SQL for multitable subqueries and joins
D) A and B
E) A, B and C

B
Diff: 3
Page Ref: 129

44. **44) Anomalies caused by functional dependencies can be eliminated by putting tables into _____.**
A) 1NF
B) 2NF
C) 3NF
D) BCNF
E) 4NF

D
Diff: 2
Page Ref: 129

45. **45) The defining characteristic of BCNF is that a table is in BCNF if _____.**
A) all rows are unique
B) all columns are consistent
C) the primary key is a candidate key
D) all determinants are candidate keys
E) all candidate keys are determinants

D
Diff: 2
Page Ref: 130

46. **46) A classic example of unneeded normalization is when we are dealing with _____.**
A) ZIP codes
B) sales orders and line items
C) association patterns
D) multivalued dependencies
E) general purpose remarks columns

A
Diff: 2
Page Ref: 131

47. **47) Unlike the anomalies from functional dependencies, the anomalies from _____ are so serious that they should always be eliminated.**
A) ZIP codes
B) sales orders and line items
C) association patterns
D) multivalued dependencies
E) general purpose remarks columns

D
Diff: 2
Page Ref: 132

48. **48) Read-only databases are used for _____.**
A) updating
B) querying
C) reporting
D) A and B
E) B and C

E
Diff: 1
Page Ref: 132

49. **49) For a number of reasons, _____ is not often an advantage for a read-only database.**
A) updating
B) normalization
C) denormalization
D) A and B
E) B and C
B | Diff: 1 | Page Ref: 132

50. **50) _____ is the process of joining two or more tables and storing the result as a single table.**
A) Querying
B) Normalization
C) Denormalization
D) A and B
E) B and C
C | Diff: 2 | Page Ref: 132

51. **51) An advantage of denormalization is _____.**
A) faster updating
B) faster querying
C) less complex SQL in application code
D) A and B
E) B and C
E | Diff: 3 | Page Ref: 132-133

52. **52) A table designed to store PhoneNumber01, PhoneNumber02 and PhoneNumber03 contains _____.**
A) the multivalued, multicolumn problem
B) the inconsistent values problem
C) the missing values problem
D) the general-purpose remarks column problem
E) None of the above is correct.
A | Diff: 1 | Page Ref: 135

53. **53) A form of multivalued dependency is found in _____.**
A) the multivalued, multicolumn problem
B) the inconsistent values problem
C) the missing values problem
D) the general-purpose remarks column problem
E) None of the above is correct.
A | Diff: 2 | Page Ref: 136

54. **54) When a table is created using existing data from multiple sources, you are likely to find that the different sources code data in slightly different ways. This is an example of _____.**
A) the multivalued, multicolumn problem
B) the inconsistent values problem
C) the missing values problem
D) the general-purpose remarks column problem
E) None of the above is correct.
B | Diff: 2 | Page Ref: 136-137

55. **55) You are creating a PRODUCT table using existing data from multiple sources. Examining the data, you find that you have "large red hat", "large hat, red", "red hat large" and "hat, large, red." This is an example of _____.**
A) the multivalue, multicolumn problem
B) the inconsistent values problem
C) the missing values problem
D) the general-purpose remarks column problem
E) None of the above is correct.
B | Diff: 1 | Page Ref: 136-137

56. **56) When a table is created using existing data from multiple sources, you are likely to find that some data values have never been provided. This is an example of _____.**
A) the multivalued, multicolumn problem
B) the inconsistent values problem
C) the missing values problem
D) the general-purpose remarks column problem
E) None of the above is correct.
C | Diff: 2 | Page Ref: 137-138

57. **57) A missing value is called a(n) _____.**
A) empty value
B) null value
C) missing value
D) Any of A, B or C can be used.
E) None of the above is correct.
B | Diff: 1 | Page Ref: 137-138

58. **58) A null value can indicate which of the following conditions?**
A) The value is inappropriate.
B) The value is appropriate but unknown.
C) The value is appropriate and known, but not entered into the database.
D) All of A, B or C are correct.
E) None of the above is correct.
D | Diff: 2 | Page Ref: 137-138

59. **59) To check for null values in a column in a table, use the SQL phrase _____.**
A) IS
B) IS NOT
C) IS NULL
D) COUNT(IS NOT)
E) COUNT(IS NULL)
C | Diff: 2 | Page Ref: 137-138

60. **60) The SQL keyword IS NULL can be used to _____.**
A) count the number of columns in a table
B) count the number of rows in a table
C) count the number of null values in a column
D) A and C
E) B and C
C | Diff: 2 | Page Ref: 137-138

61. **61) When you are given a set of tables and asked to create a database to store their data, the first step is to assess the tables' _____.**	structure and content Diff: 1 Page Ref: 128-129 Fig 4-1
62. **62) The first step in assessing table structure is to _____ and _____.**	count rows; examine columns Diff: 2 Page Ref: 128-129 Fig 4-1
63. **63) To count the number of rows in a table, use the SQL construct _____.**	COUNT(*) Diff: 2 Page Ref: 128
64. **64) To determine the number and type of columns in a table, use the SQL construct _____.**	SELECT * Diff: 1 Page Ref: 128
65. **65) To limit the number of rows retrieved from a table, use the SQL keyword _____.**	TOP Diff: 1 Page Ref: 128
66. **66) When examining data values as a part of assessing table structure, you should try to determine two types of dependencies: _____ and _____.**	functional dependencies; multivalued dependencies Diff: 2 Page Ref: 128-129 Fig 4-1
67. **67) When examining data values as a part of assessing table structure, you should try to determine three types of keys: the _____, any additional _____ and any _____.**	primary key; candidate keys; foreign keys Diff: 2 Page Ref: 128-129 Fig 4-1
68. **68) The elimination of _____ and the reduction of _____ are advantages of normalization.**	modification anomalies; duplicated data Diff: 3 Page Ref: 129 Fig 4-2
69. **69) The presence of one or more _____ in a relation means that we will not be able to eliminate all duplicated data in that table.**	foreign keys Diff: 3 Page Ref: 129
70. **70) _____ requires application programmers to write complex SQL since they will need to write subqueries and joins to recombine data stored in separate relations.**	Normalization Diff: 2 Page Ref: 129 Fig 4-2
71. **71) Relations are sometimes left unnormalized to improve _____.**	performance Diff: 3 Page Ref: 129
72. **72) Relations in BCNF have no modification anomalies in regard to _____.**	functional dependencies Diff: 3 Page Ref: 129
73. **73) A defining requirement for _____ is that every determinant must be a candidate key.**	BCNF Diff: 2 Page Ref: 130
74. **74) A relation is in BCNF if every _____ is a candidate key.**	determinant Diff: 2 Page Ref: 130
75. **75) A relation is in BCNF if every determinant is a(n) _____.**	candidate key Diff: 2 Page Ref: 130
76. **76) Anomalies from _____ are so serious that these structures must be eliminated.**	multivalued dependencies Diff: 2 Page Ref: 132
77. **77) Writing SQL subqueries and joins against normalized tables is _____ compared to the code that must be written to handle anomalies from multivalued dependencies.**	simple (or a similar word) Diff: 2 Page Ref: 132
78. **78) Creating a _____ database is a job often given to beginning database professionals.**	read-only Diff: 1 Page Ref: 132
79. **79) Read-only databases are _____ updated.**	never Diff: 2 Page Ref: 132
80. **80) Normalization is seldom an advantage for a _____ database.**	read-only Diff: 2 Page Ref: 132
81. **81) _____ is the process of joining previously normalized tables back together.**	Denormalization Diff: 1 Page Ref: 132-133
82. **82) _____ reduces the complexity of the SQL statements needed in an application to read required data.**	Denormalization Diff: 2 Page Ref: 132-133
83. **83) _____ often use several copies of a set of same data, where each copy is modified for a specific use.**	Read-only databases Diff: 2 Page Ref: 134
84. **84) Denormalization is simply join the data together and store it in a(n) _____.**	table (or relation) Diff: 1 Page Ref: 132-133
85. **85) Multivalued dependencies show up under a different name as the _____ problem.**	multivalued, multicolumn Diff: 1 Page Ref: 135-139

86.	**86) If you have a table with a set of columns named "Child01", "Child02" and "Child03", the table has the _____ problem.**	multivalued, multicolumn Diff: 1 Page Ref: 135-139
87.	**87) You are creating a BOAT table using existing data from multiple sources, and you find that you have "power boat blue", "boat, power, blue" and "blue power boat" as data values for the same column. This is an example of the _____ problem.**	inconsistent values Diff: 1 Page Ref: 135-139
88.	**88) A missing value is called a(n) _____.**	null value Diff: 1 Page Ref: 137-138
89.	**89) Null values are a problem because they are _____.**	ambiguous Diff: 3 Page Ref: 137-138
90.	**90) The SQL keyword _____ can be used to count the number of nulls in a column.**	IS NULL Diff: 1 Page Ref: 137-138