CIS 201 Chapter 12 Review Test

True/False

1. (1 point) A relation describes the structure, content, and access controls of a physical data store or database.

2. (1 point) A relational database management system stores data in tables.

3. (1 point) Every table in a relational database must have a foreign key.

4. (1 point) A foreign key is a field or set of fields stored in one table that also exists as a primary key in another table.

5. (1 point) Invented keys in a relational database are dangerous and require careful scrutiny.

6. (1 point) Relationships in a relational database are usually represented by embedding a foreign key in each participating table.

7. (1 point) Classes that participate in a classification hierarchy can be represented within a relational database as a set of tables with the primary key of the general class table replicated in the other tables.

8. (1 point) Classes that participate in a classification relationship can only be represented within a relational database as a single table containing all the attributes in each class.

9. (1 point) A relational database table is in third normal form (3NF) if it is in second normal form (2NF) and if every non-key field is functionally dependent on the primary key.

10. (1 point) A relational database table is in third normal form (3NF) if it is in second normal form (2NF) and if no non-key field is functionally dependent on any other non-key field.

11. (1 point) Problem domain modeling and database normalization are incompatible techniques for relational database design.

12. (1 point) One-to-many and many-to-many relationships are both represented by foreign keys in a relational database.

13. (1 point) Referential integrity is a consistent relational database state in which every foreign key value also exists as a primary key value.

14. (1 point) The primary purpose of integrity controls is to track external activity.

15. (1 point) Completeness control is an integrity control that identifies when a value in a field is too large or too small.

Multiple Choice

16. (1 point) A(n) ____ describes the structure, content, and access controls of a physical data store or database.
   a. relation
   b. DBMS
   c. schema
   d. attribute
17. (1 point) Which of the following is NOT a component or function of a typical database management system (DBMS)?
   a. Low-level process management
   b. End-user query processor
   c. Application program interface
   d. Administrative interface

18. (1 point) In a relational database, a row can be referred to as a(n) ____.
   a. field
   b. tuple
   c. attribute
   d. relation

19. (1 point) Data elements in a relational database are organized into ____.
   a. attributes
   b. objects
   c. tables
   d. tuples

20. (1 point) ____ are a critical element of relational database design because they are the bases for representing relationships among tables.
   a. Keys
   b. Attributes
   c. Fields
   d. Tables

21. (1 point) One column of a table in a relational database is called a(n) ____.
   a. attribute
   b. relation
   c. tuple
   d. element

22. (1 point) A(n) ____ is a field or set of fields stored in one table that also exists as a primary key in another table.
   a. primary key
   b. foreign key
   c. object identifier
   d. column

23. (1 point) Each class on an class diagram is represented by a(n) ____ in a relational database.
   a. attribute
   b. row
   c. table
   d. column

24. (1 point) All ____ in a table are guaranteed to be unique if the table’s primary key is guaranteed to be unique.
   a. columns
   b. foreign keys
   c. rows
   d. values

25. (1 point) An separate relation must be created to store the attributes of a ____ relationship among two other classes.
   a. one-to-one
b. one-to-many  

c. many-to-many  

d. not any (not necessary)

26. (1 point) A relational database table is in ____ normal form if it has no repeating fields or groups of fields, and hence all rows have the same columns.  
a. first  
b. second  
c. third  
d. fourth

27. (1 point) What can be said about the following relational database table (key is underlined): (Choose the most correct answer)  
StudentID, Name, Major, CreditsCompleted, GPA, AcademicStanding  
a. Not in any valid normal form  
b. In First Normal Form  
c. In First and Second Normal Form  
d. In First, Second and Third Normal Form

28. (1 point) A ____ database server architecture is the simplest to build and operate if sufficient network capacity is already available for database access.  
a. single  
b. replicated  
c. partitioned  
d. cloud-based

29. (1 point) A ____ database server architecture runs the greatest risk of service disruption in the event of a server failure.  
a. single  
b. replicated  
c. partitioned  
d. cloud-based

30. (1 point) Database synchronization should be implemented when using a(n) ____ database server architecture.  
a. single  
b. replicated  
c. partitioned  
d. cloud-based

31. (1 point) A significant disadvantage of a single server database architecture is that it ____.
   a. must be located on the same local area network (LAN) as all database users  
b. requires partitioning the schema among user groups  
c. can result in an overloaded network  
d. is relatively expensive

32. (1 point) A ____ database server architecture is only feasible when a database schema can be cleanly divided among client access user groups.  
a. single  
b. partitioned  
c. replicated  
d. cloud-based
33. (1 point) What is a control that checks the value of a field to ensure that it is within the correct range?
   a. Answer control
   b. Completeness control
   c. Value limit control
   d. High-low control

34. (1 point) What is the name of a general control technique used to ensure that entered data is correct?
   a. Data validation control
   b. Data access control
   c. Data acceptance control
   d. Data completeness control

35. (1 point) Which of the following is NOT a factor that affects the risk of fraud?
   a. Separation of duties
   b. Monitoring
   c. Asset reconciliation
   d. Authorization of users

36. (1 point) Three types of users that are considered in the design of a security system are _____.
   a. manager user, technical user, and clerical user
   b. technical user, authorized user, and privileged user
   c. unauthorized user, registered user, and privileged user
   d. supervisor user, administration user, and operational user

37. (1 point) Which user is known to the system and is authorized to access all or certain parts of it?
   a. Authorized user
   b. Registered user
   c. Valid user
   d. Authenticated user

38. (1 point) A user who has special security and access to a system, such as the right to assign passwords, is called a _____.
   a. supervisor user
   b. database administrator
   c. privileged user
   d. technical user

39. (1 point) Which of the following can be classified as privileged users?
   a. System programmers, application programmers, and system administrators
   b. Technical users and security personnel
   c. System operators and clerks
   d. Administrators and accountants

40. (1 point) A ____ is an institution's name and public key, which is encrypted and certified by a third party.
   a. private key
   b. digital certificate
   c. certifying authority
   d. digital key