Use the below enhanced Entity Relationship diagram for relevant questions on this quiz

Figure 1. Enhanced Entity Relationship Diagram
1. Which of the following is a definition of a Database Management System?
   a) A collection of related data
   b) Programs written in SQL to access data
   c) A software package used to facilitate the creation and maintenance of a computerized database
   d) All of the above are equally good definitions

2. Which of the following is true about the 3-schema database architecture?
   a) The 3-schema architecture allows users to interact with the database through the external schema
   b) The 3-schema architecture provides the framework for data independence
   c) The 3-schema architecture supports the idea of views on the database
   d) All of the above

3. If we change the conceptual schema in a database without affecting the external schema, then we refer to this as which of the following?
   a) Information encapsulation
   b) Logical data independence
   c) External view updatability
   d) Impedance mismatch

4. Which of the following activities are performed by a database administrator?
   a) Authorizing access to the database
   b) Monitoring database usage
   c) Optimizing the physical database organization
   d) All of the above
5. Which of the following information is stored in the catalog of a relational DBMS?
   a) Column names
   b) Table names
   c) Data types of columns
   d) All of the above

6. Which of the following is an example of a database integrity constraint?
   a) Specifying that database backups are done over the weekend
   b) Specifying that user views may be defined for the database
   c) Specifying the data type for each data item
   d) Specifying a client-server database architecture

7. Which of the following is the goal of the three schema database architecture?
   a) To separate the user applications and the physical database
   b) To allow multiple users to access the database at the same time
   c) To accommodate the recovery of data from hardware or software failures
   d) All of the above

8. Which of the following are considered representational data models?
   a) Hierarchical data model
   b) Relational data model
   c) Network data model
   d) All of the above

9. If we want to allow one user of our database to see only a subset of the data, then we can do this through which of the following?
   a) By defining an external schema for that user
   b) By redefining the internal schema for our database
   c) By redefining the conceptual schema for our database
   d) None of the above
10. The Entity-Relationship data model is classified as which of the following?
   a) Representational data model
   b) Conceptual data model
   c) Physical data model
   d) All of the above

11. Which of the following statements is true?
   a) An entity is a thing in the real world with an independent existence.
   b) An entity type defines a collection of entities that have the same attributes.
   c) Attributes of an entity are properties that describe it.
   d) All of the above

12. Which of the following statements is true?
   a) Each simple attribute of an entity type is associated with a domain of values.
   b) A composite attribute may not also be multi-valued.
   c) A composite attribute may not be considered a key attribute.
   d) A relationship type can only have two participating entity types.

13. Which of the following statements is true?
   a) A weak entity type never has a partial key.
   b) A weak entity type does not have a key made up entirely of attributes of its own.
   c) A weak entity type always has a total participation constraint with respect to its identifying relationship.
   d) Both (b) and (c).

14. Consider the EER diagram in Figure 1. If we have 15 instances of the Managed By relationship type then which of the following statements is true?
   a) We must have 15 instances of the Management Company entity type.
   b) We must have 15 instances of the Musician entity type.
   c) We must have at least 1 of the Management Company entity type.
   d) Both (b) and (c).
15. Consider the EER diagram in Figure 1. If there are 5 instances of the Art entity type and 10 instances of the Artist entity type, then which of the following statements is true?
   a) There may be 55 instances of the Appears At relationship type.
   b) There may be no instances of the Appears At relationship type.
   c) There may be 105 instances of the Appears At relationship type.
   d) All of the above.

16. Considering the EER diagram in Figure 1, which attributes make up the key for the Music entity type?
   a) SName, FID
   b) FID, OrganizationID
   c) FID
   d) FID, Location

17. Considering the EER diagram in Figure 1, which of the following statements is true?
   a) A given musician may perform at only 1 music festival but on multiple stages
   b) A given musician may only perform on 1 stage at only 1 music festival
   c) A given musician may perform on multiple stages but each stage must be for a different music festival
   d) A given musician may perform on multiple stages for 1 or many music festivals

18. Consider the EER diagram in Figure 1. If we have 10 instances of the Sponsor entity type then which of the following statements is true?
   a) We must have 10 instances of the Festival entity type.
   b) We must have at least 1 instance of the Festival entity type.
   c) We may have 0 instances of the Festival entity type.
   d) None of the above

19. Considering the EER diagram in Figure 1, which attributes make up the key for the Stage entity type?
   a) SName, FID
   b) SName
   c) FID
   d) SName, FID, Location
20. Considering the EER diagram in Figure 1, which of the following statements is true?
   a) A given Sponsor may support both Music and Art festivals.
   b) A given Artist may Appear at a Festival which is considered both a Music and Art festival.
   c) A given Musician who is Managed by a Management Company must Perform at a Music Festival.
   d) All of the above.

21. Consider the EER diagram in Figure 1. If we have 5 instances of the Music entity and 3 instances of the Art entity, then which of the following statements is true?
   a) We may have only 3 instances of the Festival entity type
   b) We may have only 5 instances of the Festival entity type
   c) We must have 8 or more instances of the Festival entity type
   d) We must have exactly 8 instances of the Festival entity type

22. Considering the EER diagram in Figure 1, is it possible for two different Sponsors to have the same set of values for the Phone attribute?
   a) Yes
   b) No

23. Considering the EER diagram in Figure 1, is it possible for two different Artists to have the same value for the Phone attribute?
   a) Yes
   b) No

24. Considering the EER diagram in Figure 1, which simple attribute(s) is the key for the Artist entity type?
   a) Name
   b) Phone
   c) The combination of Name and Phone
   d) FID
25. Consider the following partial EER diagram with a Union type. Which of the following statements is true?
   a) A Corporation entity inherits the Address attribute from Owner.
   b) A Person entity inherits the Address attribute from Owner.
   c) An Owner entity can inherit the attributes of a Corporation entity.
   d) Both (a) and (b).
CS 4400 Quiz 1
Fall 2010

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