



**Bold lines: Mandatory participation. Double lines: Weak and Identification Dependent construct**

**Bus Company EER Diagram (For Questions 15-25)**

## CS6400 Sample QUIZ 1

1. Software that facilitates the process of defining, constructing, manipulating and sharing databases among various users and applications is included in which of the following?
  - (a) A database management system
  - (b) A database catalog
  - (c) A conceptual schema
  - (d) A client-server architecture
2. Which of the following is fundamental for allowing logical data independence in database systems?
  - (a) transaction processing
  - (b) data abstraction
  - (c) standards enforcement
  - (d) recovery methods
3. Which of the following statements is true?
  - (a) A database is a logically coherent collection of data with some inherent meaning.
  - (b) A database represents some aspect of the real world.
  - (c) A database is designed, built and populated with data for a specific purpose.
  - (d) All of the above
4. Which of the following users manage the resources in a database system?
  - (a) parametric user
  - (b) database administrator
  - (c) casual end user
  - (d) sophisticated end user
5. Which of the following are examples of meta-data in a database management system?
  - (a) data types of individual items
  - (b) data constraints
  - (c) schemas
  - (d) all of the above
6. Which of the following statements is true?
  - (a) A database schema includes software for manipulating the database state.
  - (b) A database state is the actual data that corresponds to a particular database schema.
  - (c) A database state has no relationship to the database schema.
  - (d) All of the above.
7. The information stored in a database management system catalog is best described by which term?
  - (a) view
  - (b) state
  - (c) meta-data
  - (d) operator-data

8. The Entity-Relationship model is an example of which type of data model?
- (a) object data model
  - (b) access path data model
  - (c) high-level conceptual data model
  - (d) low level physical data model
9. Suppose the database administrator decides to change the order in which records of a record type are stored in the database. Applications that ran correctly before this change still run correctly after the change is made. This is an example of which of the following?
- (a) physical data independence
  - (b) logical data independence
  - (c) view independence
  - (d) program-operation independence
10. Which of the following is an important aspect of the three schema database architecture?
- (a) allowing end-users to directly access the internal schema in their data requests
  - (b) providing the capability for the DBMS to map a data request at a higher level to a request at a lower level in the 3 schema architecture
  - (c) providing a runtime database processor
  - (d) none of the above
11. Which of the following is true about a high-level data manipulation language?
- (a) It can be embedded in a general purpose programming language.
  - (b) It can be used as a standalone query language.
  - (c) It is considered to be procedural since it retrieves records individually.
  - (d) Both (a) and (b)
12. Which of the following statements is true about a three-schema architecture?
- (a) The external schema describes the complex details of storage and access paths for the database.
  - (b) The internal schema is typically implemented using an object-oriented data model.
  - (c) Usually a representational (or implementation) data model is used to describe the conceptual schema when a database is implemented using some DBMS.
  - (d) Both (a) and (b)
13. Is information contained in the data definition language statements stored in the system catalog of a database management system?
- (a) Yes
  - (b) No
14. One of the ways for classifying a DBMS is based on whether the database and DBMS software is distributed over multiple sites in a computer network or stored entirely at a single site.
- (a) TRUE
  - (b) FALSE

**Refer to the EER diagram for questions 15 through 25.**

15. How many weak entity types are there?  
(a) 0  
(b) 1  
(c) 5  
(d) 6
16. Does any entity type have a multi-valued attribute?  
(a) Yes  
(b) No
17. According to the EER diagram, which of the following statements is true?  
(a) Every REPAIR instance must be related to one and only one BUS instance  
(b) Every BUS instance must be related to one and only one DRIVER instance  
(c) There may be a DRIVER instance who is NOT related to any BUS instance  
(d) All of the above
18. Can there be an instance of STOP that is related to just one instance of ROUTE?  
(a) YES  
(b) NO
19. How many different keys are there for the 20\_OR\_LESS\_CAPACITY\_BUS entity type?  
(a) 0  
(b) 1  
(c) 2  
(d) 3
20. According to the EER diagram, can there be a DRIVER who is assigned to two different BUSES?  
(a) YES  
(b) NO
21. What is the key for the CLASS\_A\_DRIVER entity type?  
(a) BUSID  
(b) LICENSEPLATENUM  
(c) DID  
(d) DID, CERTIFICATIONDATE
22. If there are 50 instances of STOP and 5 instances of ROUTE then which of the following statements must be true?  
(a) The minimum number of instances of MAKES is 50  
(b) There must be a minimum of 5 instances of MAKES  
(c) The maximum number of instances of MAKES is 250  
(d) Both (a) and (c)

23. If we have 5 instances of ROUTE and 10 instances of BUS then what is the maximum number of instances of USES that can exist?

- (a) 50
- (b) 15
- (c) 10
- (d) 5

24. If there are 20 instances of REPAIR then which of the following statements is true?

- (a) There must be exactly 20 instances of BUS
- (b) There must be at most one instance of BUS
- (c) There must be at least one instance of BUS

25. If there are 5 instances of CLASS\_B\_DRIVER and 3 instances of CLASS\_A\_DRIVER then which of the following statements is true?

- (a) There must be 8 instances of the DRIVER entity type.
- (b) There must be 8 instances of the BUS entity type.
- (c) There may exist only 3 instances of the DRIVER entity type.
- (d) None of the above