

**Question 1: What is the JOIN operation used for in relational databases?** a) Data encryption  
b) Combining different relations into one  
c) Data deletion  
d) Indexing

**Answer: b) Combining different relations into one**

**Question 2: How are attributes named in the result of a JOIN operation?** a) Prefixed by random letters  
b) Prefixed by the relation of their origin  
c) Suffixed by the relation of their origin  
d) Named exactly the same as in the original relations

**Answer: b) Prefixed by the relation of their origin**

**Question 3: In the example  $C \leftarrow JOIN A \text{ and } B$  where  $A.W = B.X$ , what condition determines the tuples joined in the new relation?** a) A random condition  
b)  $A.W = B.X$   
c)  $A.W < B.X$   
d)  $A.W$  and  $B.X$  are not involved in the join

**Answer: b)  $A.W = B.X$**

**Question 4: What is the purpose of the naming convention in JOIN operations?** a) To confuse users  
b) To ensure attributes have unique names in the new relation  
c) To make the operation slower  
d) To hide attribute names

**Answer: b) To ensure attributes have unique names in the new relation**

**Question 5: In the statement  $NEW1 \leftarrow JOIN ASSIGNMENT \text{ and } JOB$  where  $ASSIGNMENT.JobId = JOB.JobId$ , what does  $NEW1$  represent?** a) A random variable  
b) The result of the JOIN operation

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- c) An old relation
- d) A condition

**Answer: b) The result of the JOIN operation**

**Question 6: What is the purpose of SELECTing from NEW1 where ASSIGNMENT.TermDate = '\*' in the example?**

- a) To confuse the database
- b) To delete tuples
- c) To obtain information about still-employed employees
- d) To list all employees

**Answer: c) To obtain information about still-employed employees**

**Question 7: What problem does the object-oriented approach to database design aim to solve?**

- a) Inefficient JOIN operations
- b) Cascading rollback
- c) Homogeneous system design
- d) Issues with storing employee names in a relational database

**Answer: d) Issues with storing employee names in a relational database**

**Question 8: According to the paragraph, what is a disadvantage of storing an entire name as a single attribute in a relational database?**

- a) Data encryption issues
- b) Difficulty in handling surnames
- c) Slower queries
- d) Database corruption

**Answer: b) Difficulty in handling surnames**

**Question 9: Why is the object-oriented approach considered more compatible with multimedia databases?**

- a) It requires less storage space
- b) It can handle audio and video attributes without complications
- c) It has faster query times
- d) It has a simpler structure

**Answer: b) It can handle audio and video attributes without complications**

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**Question 10: What is a persistent object in the context of object-oriented databases?**

- a) An object with a long lifespan
- b) An object created during program execution
- c) An object discarded when the program terminates
- d) An object added to the database and saved after program termination

**Answer: d) An object added to the database and saved after program termination**

**Question 11: According to proponents of object-oriented databases, what is an advantage of the object-oriented approach over the relational approach?**

- a) Faster query times
- b) Incompatible system design
- c) Homogeneous system design
- d) Inherent clash between paradigms

**Answer: c) Homogeneous system design**

**Question 12: What is the commit point in the context of the Commit/Rollback Protocol?**

- a) A point where transactions are initiated
- b) A point where transactions are rejected
- c) A point where all the steps in a transaction have been recorded in the log
- d) A point where transactions are rolled back

**Answer: c) A point where all the steps in a transaction have been recorded in the log**

**Question 13: In the Commit/Rollback Protocol, what is the purpose of the log containing a record of each transaction's activities?**

- a) To slow down the system
- b) To ensure all transactions are rejected
- c) To maintain the database's integrity by recording transaction activities
- d) To confuse the DBMS

**Answer: c) To maintain the database's integrity by recording transaction activities**

**Question 14: What problem might arise if a transaction's access request is rejected in a locking protocol?**

- a) Data encryption

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- b) Cascading rollback
- c) Deadlock
- d) Incorrect summary

**Answer: c) Deadlock**

**Question 15: What is the purpose of shared locks in a locking protocol?** a) To lock items exclusively  
b) To mark items as locked  
c) To allow shared access to items  
d) To roll back transactions

**Answer: c) To allow shared access to items**

**Question 16: Why is a scheduler used in large database management systems?** a) To confuse users  
b) To coordinate time-sharing among transactions  
c) To decrease the speed of transactions  
d) To increase the complexity of the system

**Answer: b) To coordinate time-sharing among transactions**

**Question 17: In the context of locking, what is the lost update problem?** a) A problem with the locking protocol  
b) A problem with transaction rejection  
c) An issue with incomplete transactions  
d) Two transactions making deductions from the same account

**Answer: d) Two transactions making deductions from the same account**

**Question 18: What is the goal of a locking protocol in a database management system?** a) To confuse users  
b) To reject all transactions  
c) To coordinate time-sharing among transactions  
d) To prevent inadvertent interaction between transactions

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**Answer: d) To prevent inadvertent interaction between transactions**

**Question 19: What is the potential consequence of rejecting a younger transaction in a locking protocol?**

- a) Deadlock
- b) Incorrect summary
- c) Cascading rollback
- d) Database corruption

**Answer: c) Cascading rollback**

**Question 20: How does a locking protocol handle a transaction's request for exclusive access to a data item that is already locked?**

- a) Grants the access
- b) Forces the transaction to wait
- c) Rolls back the transaction
- d) Marks the item as unlocked

**Answer: b) Forces the transaction to wait**

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