## **Quiz**

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| --- |
| **Note:** It is recommended that you save your response as you complete each question. |

#### ****Question 1**** (4 points)

Question 1 Saved

Which of the following is true about the functional dependency (A, B) -> (C, D)?

Question 1 options:

|  |  |
| --- | --- |
|  | A and B together are determined by C and D together. |
|  | A determines B. |
|  | C and D together determine A. |
|  | A is the determinant of C. |
|  | **A and B together determine D.** |

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#### ****Question 2**** (4 points)

Question 2 Saved

A relation that contains no multivalued attributes, and has nonkey attributes solely dependent on the primary key, but contains transitive dependencies is in which normal form?

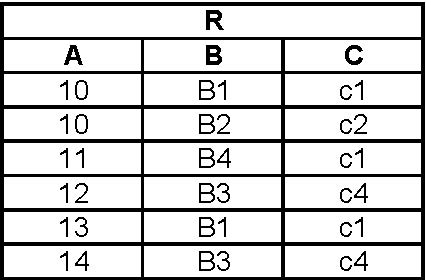
Question 2 options:

|  |  |
| --- | --- |
|  | Third |
|  | Fourth |
|  | First |
|  | **Second** |

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#### ****Question 3**** (4 points)

Question 3 Saved



In Relation R, assuming it will never change, which of the following could serve as the primary key.

Question 3 options:

|  |  |
| --- | --- |
|  | C |
|  | **{A, B}** |
|  | {B, C} |
|  | A |
|  | B |

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#### ****Question 4**** (4 points)

Question 4 Saved

In many-to-many relationships in a relational database design \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

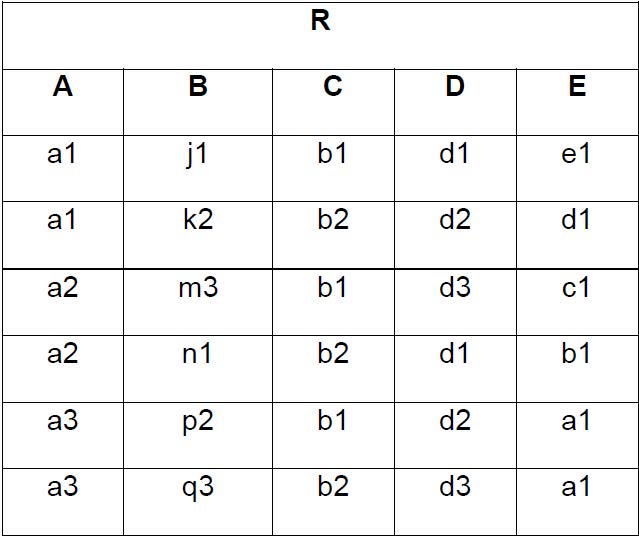
Question 4 options:

|  |  |  |  |
| --- | --- | --- | --- |
|  | |  |  | | --- | --- | | a) | the key of the child is placed as a foreign key into the parent | |
|  | |  |  | | --- | --- | | b) | the key of the parent is placed as a foreign key into the child | |
|  | |  |  | | --- | --- | | c) | the keys of both tables are placed in a third table | |
|  | |  |  | | --- | --- | | d) | the keys of both tables are joined into a composite key | |
|  | |  |  | | --- | --- | | e) | **c and d** | |

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#### ****Question 5**** (4 points)

Question 5 Saved



The tuples in the instance of Relation R represent the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

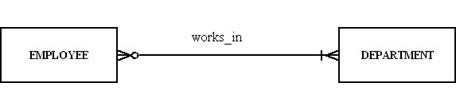
Question 5 options:

|  |  |
| --- | --- |
|  | **Entity Integrity** |
|  | Intension |
|  | Referential Integrity |
|  | Extension |
|  | None of the other answers are correct. |

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#### ****Question 6**** (4 points)

Question 6 Saved



For the relationship represented in the figure, which of the following is true?

Question 6 options:

|  |  |
| --- | --- |
|  | An employee has to work for more than one department. |
|  | A department must have at least one employee. |
|  | **A department can have more than one employee.** |
|  | An employee can work in more than one department but does not have to work for any department. |

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#### ****Question 7**** (4 points)

Question 7 Saved

Which of the following functional dependency diagrams accurately represents the following situation:

* A campus has many buildings.
* Each building has a unique name.
* Each building has many rooms.
* All rooms in any given building are numbered sequentially starting at "101."
* Each room has a certain capacity, although many rooms in the same building or different buildings may have the same capacity.
* Each room is assigned to a single department.
* A department may have many rooms in one or more buildings, each with the same or different capacities.

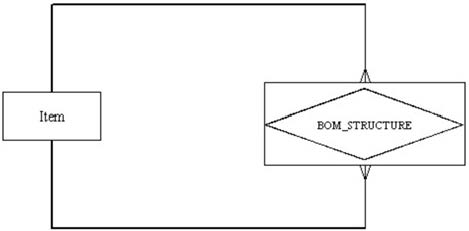
Question 7 options:

|  |  |
| --- | --- |
|  | **(BuildingName, RoomNumber) → (Capacity, Department)** |
|  | (BuildingName, Capacity) → (Department, RoomNumber) |
|  | (Department, Capacity) → (BuildingName, RoomNumber) |
|  | RoomNumber → (BuildingName, Department, Capacity |
|  | BuildingName → (RoomNumber, Capacity, Department) |

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#### ****Question 8**** (4 points)

Question 8 Saved



In the diagram, which is true?

Question 8 options:

|  |  |
| --- | --- |
|  | There is an associative entity. |
|  | **All of the other answers are correct.** |
|  | It depicts a unary relationship. |
|  | It depicts a many-to-many relationship. |

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#### ****Question 9**** (4 points)

Question 9 Saved

In a relational database design, all relationships are expressed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Question 9 options:

|  |  |
| --- | --- |
|  | creating a subtype |
|  | creating a line between entities |
|  | creating a supertype |
|  | creating a primary key |
|  | **creating a foreign key** |

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#### ****Question 10**** (4 points)

Question 10 Saved

**MedicineCode**→**(MedicineName, ShelfLife, Manufacturer, Dosage)**

Given the above functional dependency, which of the following statement is **not** known to be true?

Question 10 options:

|  |  |
| --- | --- |
|  | ShelfLife is functionally dependent on MedicineCode |
|  | MedicineCode is a determinant. |
|  | **MedicineName is a determinant.** |
|  | Manufacturer is functionally dependent on MedicineCode. |
|  | MedicineCode is a candidate key of the relation  MEDICINE (MedicineName, ShelfLife, Manufacturer, Dosage, MedicineCode). |

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#### ****Question 11**** (4 points)

Question 11 Saved

Which of the following would **not** be an example of database metadata?

Question 11 options:

|  |  |
| --- | --- |
|  | Names of tables in a database |
|  | ) Properties of tables in a database |
|  | Names of columns in a database and their associated tables |
|  | Properties of columns |
|  | **Queries against records in the database tables** |

Save

#### ****Question 12**** (4 points)

Question 12 Saved

A \_\_\_\_\_\_\_\_ specifies the number of instances of one entity that can be associated with each instance of another entity.

Question 12 options:

|  |  |
| --- | --- |
|  | **cardinality constraint** |
|  | limit |
|  | degree |
|  | counter constraint |

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#### ****Question 13**** (4 points)

Question 13 Saved

A person's name, birthday, and social security number are all examples of:

Question 13 options:

|  |  |
| --- | --- |
|  | relationships. |
|  | **attributes.** |
|  | descriptors. |
|  | entities. |

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#### ****Question 14**** (4 points)

Question 14 Saved



In the diagram, which answer is true?

Question 14 options:

|  |  |
| --- | --- |
|  | Each employee works in more than one department. |
|  | Each employee can manage many departments. |
|  | **Each employee can supervise one employee, no employees or many employees.** |
|  | All of the other answers are correct. |

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#### ****Question 15**** (4 points)

Question 15 Saved

A candidate key must satisfy all of the following conditions **EXCEPT:**

Question 15 options:

|  |  |
| --- | --- |
|  | the key must be nonredundant |
|  | the key must uniquely identify the row. |
|  | **the key must indicate the row's position in the table.** |
|  | each nonkey attribute is functionally dependent upon it. |

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#### ****Question 16**** (4 points)

Question 16 Saved

Given the functional dependency (A, B) -> C, then \_\_\_\_\_\_\_.

Question 16 options:

|  |  |
| --- | --- |
|  | **None of the other answers are correct.** |
|  | B -> C |
|  | A -> B |
|  | B -> A |
|  | A -> C |

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#### ****Question 17**** (4 points)

Question 17 Saved

Which of the following pairs of words/phrases are synonyms or represent similar concepts?

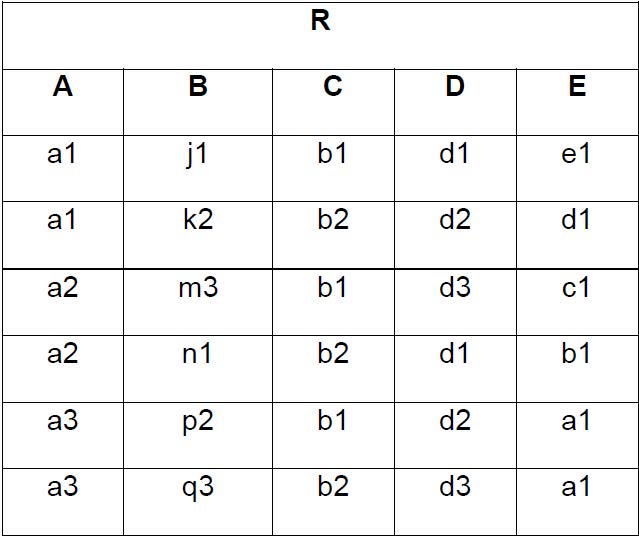
Question 17 options:

|  |  |
| --- | --- |
|  | **schema | intension** |
|  | external view | metadata |
|  | data abstraction | internal level |
|  | database state | conceptual level |
|  | controlled redundancy | procedural DML |

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#### ****Question 18**** (4 points)

Question 18 Saved



In Relation R, assuming it will never change, which of the following functional dependencies are valid.

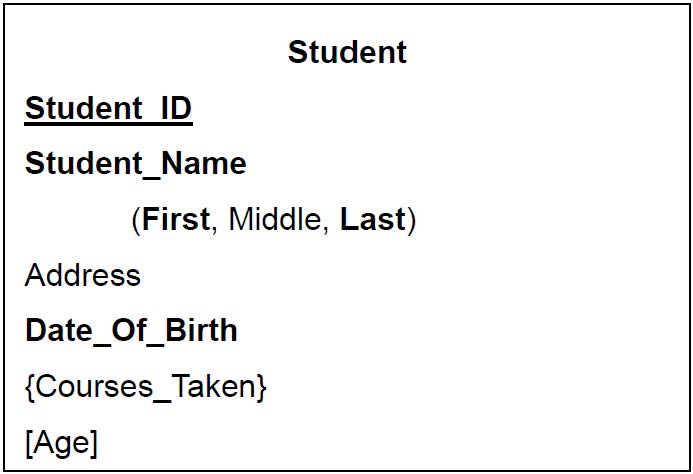
Question 18 options:

|  |  |
| --- | --- |
|  | **B -> {D, E}** |
|  | A -> C |
|  | C -> E |
|  | {A, E} -> D |
|  | E -> D |

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#### ****Question 19**** (4 points)

Question 19 Saved



In Figure tb3–3, which attribute is derived?

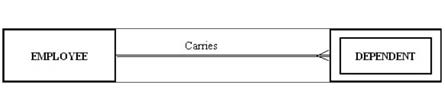
Question 19 options:

|  |  |
| --- | --- |
|  | Address |
|  | Courses\_Taken |
|  | **Age** |
|  | Student\_Name |
|  | Date\_Of\_Birth |

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#### ****Question 20**** (4 points)

Question 20 Saved



The figure shows an example of:

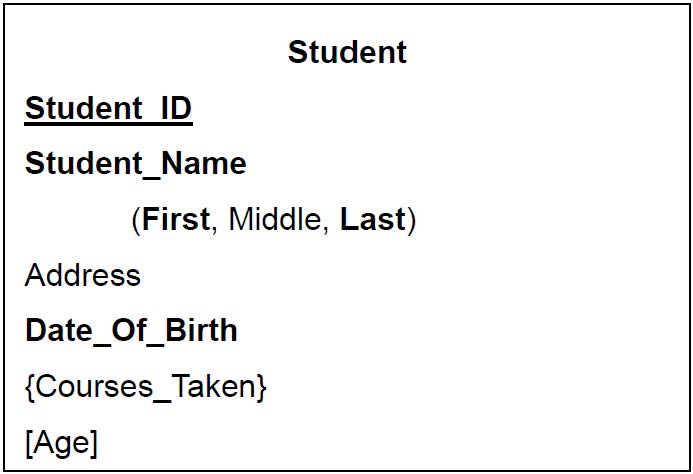
Question 20 options:

|  |  |
| --- | --- |
|  | **a strong entity and its associated weak entity.** |
|  | a double-walled relationship. |
|  | a co-dependent relationship. |
|  | a many-to-many relationship. |

Save

#### ****Question 21**** (4 points)

Question 21 Saved



In Figure tb3–3, which attribute is multivalued?

Question 21 options:

|  |  |
| --- | --- |
|  | Date\_Of\_Birth |
|  | Age |
|  | Address |
|  | Student\_Name |
|  | **Courses\_Taken** |

Save

#### ****Question 22**** (4 points)

Question 22 Saved

Which of the following pairs of words/phrases are synonyms or represent similar concepts?

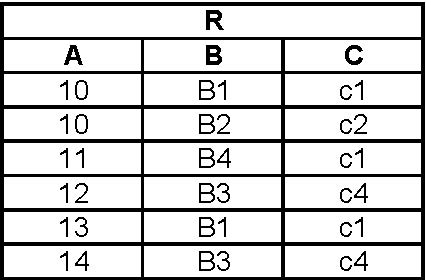
Question 22 options:

|  |  |
| --- | --- |
|  | three-schema architecture | three-tier architecture |
|  | schema construct | concurrency control |
|  | **database state | extension** |
|  | data abstraction | controlled redunda |
|  | internal level | nonprocedural DML |

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#### ****Question 23**** (4 points)

Question 23 Saved



In Relation R, assuming it will never change, which of the following functional dependencies are valid.

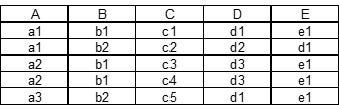
Question 23 options:

|  |  |
| --- | --- |
|  | A -> B |
|  | C -> A |
|  | **B -> C** |
|  | B -> A |
|  | C -> B |

Save

#### ****Question 24**** (4 points)

Question 24 Saved



In the relation shown, assuming it will never change, which of the following functional dependencies are valid.

Question 24 options:

|  |  |
| --- | --- |
|  | A -> D |
|  | **C -> {B, D, E}** |
|  | E -> A |
|  | {A, B} -> C |
|  | A -> E |

Save

#### ****Question 25**** (4 points)

Question 25 Saved

A functional dependency between two or more nonkey attributes is called a:

Question 25 options:

|  |  |
| --- | --- |
|  | partial nonkey dependency. |
|  | partial functional dependency. |
|  | partial transitive dependency. |
|  | **transitive dependency.** |

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