

(Free) Sample 9

Taken from:

Question Bank 4: Normalization

Knowledge River Ltd



(Free) Sample 9

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The full *Question Bank 4* comprises 32 extended questions and detailed answers covering all aspects of normalization.

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Below are three examples...

Question: Which ONE of the following statements is TRUE?

- Multi-valued dependencies are based on dependent columns
- Join-dependencies are removed during BCNF
- 3NF removes partial dependencies
- 5NF identifies transitive dependencies
- 2NF removes repeating groups
- 4NF removes functional dependencies
- None of the above statements are true

Solution: Which ONE of the following statements is TRUE?

- Multi-valued dependencies are based on dependent columns
- Join-dependencies are removed during BCNF
- 3NF removes partial dependencies
- 5NF identifies transitive dependencies
- 2NF removes repeating groups
- 4NF removes functional dependencies
- None of the above statements are true ** (correct answer)

Question: Which of the following represents a functional dependency?

- Car Registration \Rightarrow Car Make
- Book Publisher \Rightarrow ISBN
- Student Name \Rightarrow Student ID
- Car Model \Rightarrow Car Registration
- ISBN \Rightarrow Book Title
- Module \Rightarrow Student ID
- Registered Year \Rightarrow Car Registration

Solution: Which of the following represents a functional dependency?

- Car Registration \Rightarrow Car Make ** (correct answer)
- Book Publisher \Rightarrow ISBN
- Student Name \Rightarrow Student ID
- Car Model \Rightarrow Car Registration
- ISBN \Rightarrow Book Title **
- Module \Rightarrow Student ID
- Registered Year \Rightarrow Car Registration

Question: Using the following information:

- A is a candidate key
- B is not a candidate key
- C is not a candidate key
- B and C together form a candidate key
- D is not a candidate key
- E is not a candidate key
- F is not a candidate key
- A is a determinant
- B is a determinant
- B and C together form a determinant
- D is a determinant

State which of the following dependencies satisfy BCNF:

- FD1: $A \Rightarrow (B, C)$
- FD2: $A \Rightarrow D$
- FD3: $B \Rightarrow A$
- FD4: $B \Rightarrow (D, E, F)$
- FD5: $(B, C) \Rightarrow (D, E, F)$
- FD6: $(B, C) \Rightarrow A$
- FD7: $D \Rightarrow (E, F)$
- FD8: $D \Rightarrow (B, C)$

Solution: Using the following information:

- A is a candidate key
- B is not a candidate key
- C is not a candidate key
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- A is a determinant
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- B and C together form a determinant
- D is a determinant

State which of the following dependencies satisfy BCNF:

- FD1: $A \Rightarrow (B, C)$ [BCNF]
- FD2: $A \Rightarrow D$ [BCNF]
- FD3: $B \Rightarrow A$ [not BCNF]
- FD4: $B \Rightarrow (D, E, F)$ [not BCNF]
- FD5: $(B, C) \Rightarrow (D, E, F)$ [BCNF]
- FD6: $(B, C) \Rightarrow A$ [BCNF]
- FD7: $D \Rightarrow (E, F)$ [not BCNF]
- FD8: $D \Rightarrow (B, C)$ [not BCNF]