

Database Management Systems (CSN-351)

Relational Database Design (QA)

BTech 3rd Year (CS) + Minor + Audit

Instructor: **Ranita Biswas**
Department of Computer Science and Engineering
Indian Institute of Technology Roorkee
Roorkee, Uttarakhand - 247 667, India



Question 1

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ANSWER: **false**

Question 2

Consider a schema $R(A, B, C, D)$ and functional dependencies $A \rightarrow B$ and $C \rightarrow D$. Then the decomposition of R into $R_1(AB)$ and $R_2(CD)$ is

- dependency preserving and lossless join
- lossless join but not dependency preserving
- dependency preserving but not lossless join
- not dependency preserving and not lossless join

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Question 3

$R(A, B, C, D)$ is a relation. Which of the following does not have a lossless join, dependency preserving BCNF decomposition?

- $A \rightarrow B, B \rightarrow CD$
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Question 4

Consider the relation $X(P, Q, R, S, T, U)$ with the following set of functional dependencies

$$F = \{\{P, R\} \rightarrow \{S, T\}, \{P, S, U\} \rightarrow \{Q, R\}\}$$

Which of the following is the trivial functional dependency in F^+ (closure of F)?

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ANSWER: $\{BC \rightarrow A, BC \rightarrow F, F \rightarrow D, F \rightarrow E\}$