Gradiance Online Accelerated Learning

Submission number: 338604
Submission certificate: EF871288
Submission time: 2017-03-14 13:49:25 PST (GMT - 8:00)

Number of questions: 6
Positive points per question: 3.0
Negative points per question: 1.0
Your score: 18

Functional dependencies and normal forms

1. Let R(ABCDEFGH) satisfy the following functional dependencies:

$A \rightarrow B, CH \rightarrow A, B \rightarrow E, BD \rightarrow C, EG \rightarrow H, DE \rightarrow F.$

Which of the following FD's is also guaranteed to be satisfied by R?

a) $BFG \rightarrow AE$
b) $ACG \rightarrow DH$
c) $ADE \rightarrow CH$
d) $BDG \rightarrow AE$

Answer submitted: **d)**

You have answered the question correctly.

2. Which of the following relations is in Boyce-Codd Normal Form (BCNF)?

a) R(ABCD) FD's: $BD \rightarrow C$; $AB \rightarrow D$; $AC \rightarrow B$; $BD \rightarrow A$
b) R(ABCD) FD's: $C \rightarrow D$; $CD \rightarrow A$; $AB \rightarrow C$; $BD \rightarrow A$
c) R(ABCD) FD's: $BC \rightarrow A$; $AD \rightarrow C$; $CD \rightarrow B$; $BD \rightarrow C$
d) R(ABCD) FD's: $A \rightarrow C$; $B \rightarrow A$; $A \rightarrow D$; $AD \rightarrow C$

Answer submitted: **a)**

You have answered the question correctly.

3. Find all the keys of the Relation R(ABCDE) with FD's:

D → C, CE → A, D → A, and AE → D

Demonstrate your knowledge by indicating which of the following is a key.

a) CDE
b) ABCDE
c) AD
d) ABE

Answer submitted: **d)**

You have answered the question correctly.

4. Which of the following relations is in Third normal form (3NF)?

a) R(ABCD) FD's: ACD → B ; AC → D ; D → C ; AC → B
b) R(ABCD) FD's: B → C ; AC → D ; ABD → C ; BCD → A
c) R(ABCD) FD's: ABD → C ; A → B ; AB → C ; B → A
d) R(ABCD) FD's: AD → C ; D → A ; A → C ; ABC → D

Answer submitted: **a)**

You have answered the question correctly.

5. Relation R(A,B,C) currently has only the tuple (0,0,0), and it must always satisfy the functional dependencies A → B and B → C. What condition(s) must be obeyed by any tuple that may be inserted without violating either of these FD's? Identify from the list below the tuple that may be inserted into R legally.

a) (1,2,3)
b) (0,1,2)
c) (0,1,0)
d) (0,1,1)

Answer submitted: **a)**

You have answered the question correctly.

6. Determine the keys and superkeys of the relation R(ABCDEF) with FD's:

AEF → C, BF → C, EF → D, and ACDE → F

Then, demonstrate your knowledge by selecting the true statement from the list below.

a) There is only one key.

b) There are 6 superkeys that are not keys.

c) There are 7 superkeys.

d) There are three superkeys that are not keys.

Answer submitted: **d)**

You have answered the question correctly.