NIHAR MUNIRATU HW8 J'Given a relation R(A,B,C,D,E,F) in 1 NF and its functional depedency Set F= {A,YCE,E>F,D>B}. is Find Candidate skey of R. ii) Decompose R into 3NF. Soln Edge Diagram'-ABÉDEF: i) Find the Candidate key of R. A >CE. E→F → AD is the Candidate Key for R because A → CE & D → B. and rest of other attributes which are not to be present on the righthand side on the Candidate key. The attributes that are functionally depedent on all other attributes to meet

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Whecompose R into 3NF.
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accompose k into two vermins
For R2 we can see that the only transitive depealing ASE.
For R2 me can see that the only transitive depedency $A \ni E$. Thus, me decompose R2 into two relations R3 (A,E) and R4(A,F)
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only transitive dependency A>F, thus we decompose R5(A,F)&R6(A)
only trunsitive depending 1000 100 (a) both, are having no
=111. Mark the Morn (CLA, $=120$)
transitive dependences so they are 3NF.
transitive dependences so they are 3NF. Thus the decomposition 3NF is R(A, B, CD) R3(A, E), R5(A,F) & R.
, I dional
Give a relation R(A,B,C,D,E,F) in 1NF and its functional
Give a relation $K(A,B,C,D,C,D,F)$. dependency set $F = \{B \rightarrow CD, E \rightarrow A, C \rightarrow DF\}$. dependency set $F = \{B \rightarrow CD, E \rightarrow A, C \rightarrow DF\}$. $Y \rightarrow Find Candidate key of R$. $B \rightarrow CD$. $E \rightarrow A$.
depedency set F= (B) (C) (T)
i) Find Candidate key of ~. B-CD.
rda Diagram. E>A.
Edge Diagram. E>A. C>DF.
\mathcal{A} \mathcal{A} \mathcal{A} .
a titalo ken are o & t wince we have
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The Candidale key are B&E since the rest of the other attributes which are not to be present are on the not hard side. The attributes OF are functionally dependent any of the other attributes to meet this Criteria.

R/CB, C, D, F).
RICB, C, D, F).
(
R3(C,D,F).
R3(C,D,F). The functional dependencies in each decomposed relation R4: B-> CD. C-> DF.
RI: B-JCP, C-) DF.
R3: C -> DF.
=> R who to decompose we to find any the dependent functions
R3: C -> DF. R3: C -> DF. R who to decompose we to find the subset of attributes that contains a condidate key and all the dependent functionality that contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the dependent functionality That contains a condidate key and all the contains key by the contains a conditionality and the contains a cond
that contains a condidate key and all the first this Tince B, GD and F are Subset, which excentains key B, this gives us fixt decomposed relation R, [B>CD, C>DF]. The attributes E & A which are in form that contains
gives us first decomposed remove to are in form that contains
Jines us fixt decomposed relation R ₁ (B>CD, CS b). gives us fixt decomposed relation R ₁ (B>CD, CS b). we can take attributes E & A which are in form that contains the Candidate key of all functional depedencies (E>A) gives. the Candidate key of all functional depedency C>DF, thes Second decomposed relation R ₂ . Timply taking attribute C and its functional depedency C>DF.
the Candidate key of all function R2.
thes Second decomposed the functional depeating ()
> Finally taking attribute (and decomposed relation R3.
the Candidare key of all function R2. Thes Second decomposed relation R2. Tinally taking attribute C and its functional dependency C > DF. Which gives us the third decomposed relation R3. The decomposed R into BCNF its.
Which gives were R into BCNFile. The decomposed R into BCNFile.
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0. (\(\frac{1}{2} \)
R3 (C, D, F).
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3) Given a relational R with a function dependency $F = X \rightarrow Y$. If X is nonprime attribute and Y is prime attribute, select the right answer. a. Ris not in 2NF. b. R is in 2NF, but. not 3NF C. Kis in 3NF, but not BNCF d. R is in BCNF Stír (a) R is not in RNF. = > From the given functional dependency of R does not saxity the conditions for the inclusion in 3NF and in 2NF since the given depedency X -> Y do not comply with the requirement that all non-prime attributes be functionally determined by the Candidate key The functional depedency byw the attributes = which are not tend to be prime attribute (x) and the prime attribute (4), which leads to the voilation of the second normalization form, thence R is not in 2NF. = (2) It X vis a Subset of Candidate key and Y is non-prime attribute, select the right answer. a. R is not in 2NF 6. R is in 2NF, but not in 3NF C. R is in 3NF, but not in BCNF. d. R is in BCNF Solnof R is in ENF, but not in 3NF. → The Depedency X → Y which voilates the constraint that all non-prime altribères must be functionally determined by the Candidate key. The functional dependency between the attributes that are not prime attributes voilates the third normalization form.

the night answer ight an prime attribute and Y is non-prime attribute, select a. R is not in ENF 6. Rus in RNF, but not in 3NF. C. R vis in 3NF, but not BCNF. d. Ruis in BCNF. Noth (a) R is not in RNF The Functional depedency F=X->Y falls to meet the requirement every non prime attribute must be functionally determined by the entine coudidate key, which indicates it abes not implement factors relating to the third nonimalization factor either on the "attributes. So the depedency which is contrary to the second. nonimalization form of the given attribute set. 419 X is Candidate key attribute and Yis prime attribute, select the night answer. a. Ris not in ENF. b. Risin RNF, but not in 3NF. c. Kusin 3NF, but not BCNF. d. Rus in BCNF. 8th 6) R is in ENF, but not in 3NF The functional attributes of a Candidare key and the prime attributes have a reliant on the primary key of the relation is entirely functionally on the primary key which qualifies a relation to be ENF. The relation in a way is non transitive for 3NF. where X-> Y breaks the Constraint that all non-prime attributes must be functionally depedent on the Candidate Key