Normalization Exercises

Cases here are used to do following exercises:
1. Determination of Normal Forms
2. Decomposition

01. Consider relation R(A, B, C, D, E), and following FDs-

A →{B, C}
C →{D, E}

02. Consider relation R(A, B, C, D, E), and following FDs-

{A,B} → C
C → B
A → D

03. Consider relation R(A, B, C, D), and following FDs-

$AB \rightarrow C$
$B \rightarrow D$
$D \rightarrow A$

04. Consider relation R(A, B, C, D, E), and following FDs-

A → B
A → C
B → D
D → E

05. Consider relation R(A, B, C, D, E, F), and following FDs

A → B
B →{C, E, F}

06. Consider relation R(A, B, C, D), and following FDs

$AB \rightarrow CD$
$B \rightarrow C$
$C \rightarrow D$

07. Consider relation R(A, B, C, D), and following FDs

$A \rightarrow BC$
$B \rightarrow C$
$A \rightarrow B$
$AB \rightarrow C$

08. Consider relation R(A, B, C, D), and following FDs
    $A \rightarrow B$
    $AB \rightarrow CD$
    $C \rightarrow D$

09. Consider relation R(A, B, C, D), and following FDs
    $ABC \rightarrow D$
    $A \rightarrow B$

10. Consider relation Book(AccessonNo, ISBN, Title, Author, Publisher, Price), and following FDs
    AccessonNo →{ISBN}
    ISBN →{Title, Publisher, Price}

11. Consider relation Book(ISBN, Title, Author, Publisher, Price), and following FDs
    ISBN →{Title, Publisher, Price}

12. Consider relation Member(MemID, Name, Type, NoOfBooksCanBeIssued, IssueDuration), and following FDs –
    MemID → Name
    MemID → Type
    Type → NoOfBooksCanBeIssued
    Type → IssueDuration

13. Consider relation Medicine (TradeName, GenericName, BatchNo, Stock, MRP, TaxRate, Manufacturer)
    TradeName → GenericName
    TradeName → Manufacturer
    BatchNo → TradeName
    BatchNo → Stock
    BatchNo → MRP
    GenericName → TaxRate

14. Consider relation **R (StudID, SName, CPI_UptoDate, CPI_UptoASem, SPI, AcadYr, Sem, ProgCode, CourseNo, Grade)**. Holds following FDs

    StudID → {CPI**_UptoDate**, ProgCode, SName}
    {StudID, AcadYr, Sem} → {SPI, **CPI_UptoASem}**
    {StudID, AcadYr, Sem, CourseNo} → Grade

15. Relation **IssueLog**(IssueDate, MemberID, AccessonNo, DueDate, ReturnDate), and Following functional dependencies-
    {MemberID, AccessonNo, IssueDate} → {DueDate, ReturnDate}

16. Consider relation R(A, B, C), and following FDs-

    {A, B} → C
    C→B

17. Consider relation R(A, B, C, D, E, F), and following FDs-

    A →{B, D, E}
    F →{A}

18. Consider relation R(A, B, C, D, E), and following FDs-

    A → B
    A → C
    C → D
    C → E

19. Consider relation R(A, B, C, D, E, F), and following FDs-
    (Same as previous one except that R has got an additional attribute F)

    A → B
    A → C
    C → D
    C → E

20. Consider relation R(S#, SName, P#, QTY), SName is unique. Holds following FDs

    {S#,P#} → QTY
    {SNAME, P#} → QTY
    S# → SNAME
    SNAME → S#

21. Consider relation R(S#, SName, P#, QTY), SName is unique. Holds following FDs

    {S#,P#} → QTY
    S# → SNAME

22. Relation **UserDetails**(UserID, PWD, Fname, Mname, Lname, Mobile, CityID, CategoryID)

    UserID → {PWD, Fname, Mname, Lname, Mobile, CityID, CategoryID}
    Mobile → {UserID, PWD, Fname, Mname, Lname, CityID, CategoryID}

23. Relation

R(MembID , MembName, MembEmail, TeamID, TeamPWD, MentorID, MentorName, MentorEmail, InstID, InstName, City, PIN, State)

FDs:

MembID →{MembName, MembEmail, TeamID}

TeamID → {TeamPWD, MentorID}

MentorID → {MentorName, MentorEmail, InstID}

InstID → {InstName, PIN}

PIN → {City, State}