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 Member(MemID, Name, Type, NoOfBooksCanBeIssued, IssueDuration), and following FDs –
   MemID → Name
   MemID → Type
   Type → NoOfBooksCanBeIssued
   Type → IssueDuration

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

13. 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

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

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

   {A, B} → C
   C→B

16. Relation **R**(CourseNo, AcadYr, Semester, StudID, InstructorID, Grade), and Find Functional Dependencies-

    { CourseNo, AcadYr, Semester} → InstructorID
    { CourseNo, AcadYr, Semester, StudID } → Grade

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}