Define the following

a)What is Functional dependency
b) Define Trivial dependency
c)Define Candidate Key
d) What is Multi level Indexing
e) Define Prime attribute
f) What is Augmentation rule
g) Define Sparse index

1)State the informal guidelines for relation schema design . Illustrate how violation of these guidelines may be harmful.
2) Write an algorithm to check for dependency preservation and explain with example?
3) When are two sets of functional dependencies equivalent? How can we determine their equivalence?
4) A set of FD's for the relation R {A,B,C,D,E,F} is AB->C, AC->B, AD->E, B->D, BC->A,E->G. Find the minimum cover for this set of FDs?
5) What is Normalization? Discuss the 1NF, 2NF ,3NF and BCNF Normal forms with examples.
6) Consider the relation R(A,B,C,D,E,F) and FD's A->BC, F->A, C->A, D->E, E->D. Is the decomposition of R into R1 (A,C,D), R2(B,C,D), R3(E,F,D) lossless? Explain the requirement of lossless decomposition.
7) Explain the insertion and deletion algorithm for B+ trees and write the difference between B-Tree and B+-Tree?