1)
       a)   Consider a relation R(A,B,C,D,E) with FDs i)b->C ii)C->a iii)CE->D. Normalize R upto
                  2NF assuming all the attributes are atomic and single valued. Also, explain whether
                  the decomposition is loss-less or not.
       b)   What are the problems of having multi-valued attributes in a schema?
       c)   In order to be in 3NF, a relation must be in 2NF -- Explain.
       d)   Armstrong's axioms are sound -- Explain

2)   a)   What is the advantage of unordered file over ordered one?
       b)   Secondary index provides logical ordering of data -- Explain
       c)   Explain the basic principle of multilevel indexing. Mention it's disadvantages.
       d)   Two relations R1 and R2 are to be joined. What will be your strategy so that number
                  of disk accesses is reduced for the following cases:
                        i)   both the relations are very small
                        ii)   both are very large
                  Also, specify the number of block access in both cases

3)   Consider the following relations:
                  STUDENT(ROLL,NAME)   P. Key = ROLL
                  SUBJECT(SCODE, SNAME)   P. Key = SCODE
                  RESULT(ROLL, SCODE, SCORE)   P. Key = (ROLL, SCODE)

       Write down the SQL statements for the following:
             a)   For all students, show name and total score. List must appear in descending
                  order of total score
             b)   Show the name of the subjects in which average score is less than 70
             c)   Show the combinations of roll and scode with no corresponding record in RESULT.