Tutorial 1

CSN-351 Database Management Systems

1. What is key difference between File System and DBMS

2. List the details that are described and the details that are hidden by the three levels of abstraction with the help of an example. [Topic: Levels of abstraction]

3. Give an example of simple database schema and provide examples for each of the following terms [Topic: Relational model]
    a. Relation(table)
    b. Schema
    c. Tuple
    d. Attribute
    e. Degree of relation

4. Choose the correct statement(s) regarding superkeys. (One or more than one options may be correct) [Topic: Keys]
    a) A superkey is an attribute or a group of multiple attributes that can uniquely identify a tuple
    b) A superkey is a tuple or a set of multiple tuples that can uniquely identify an attribute
    c) Every candidate is a superkey key
    d) A superkey is an attribute or a set of attributes that distinguish the relation from other relations

5. Mention any three differences between primary key and candidate key. [Topic: Keys]

6. Let R = (A, B, C, D, E, F) be a relation scheme with the following dependencies-

   {C} → {F}
   {E} → {A}
   {E,C} → {D}
   {A} → {B}

   Which of the following is a key for R?

   a. {C,D} b. {E,C} c. {A,E} d.{A,C}

   [Note: X → Y indicates that attribute (or set of attributes) X uniquely identifies attribute (or set of attributes) Y]

7. Consider the relation scheme R(E, F, G, H, I, J, K, L, M, N) and the set of functional dependencies-

   { E, F } → { G }
   { F } → { I , J }
   { E, H } → { K, L }
   { K } → { M }
   { L } → { N }

   Which of the following is the key for R?

   a. { E, F } b. { E, F, H } c. { E, F, H, K, L } d. { E }

   Also, determine the total number of candidate keys and super keys.