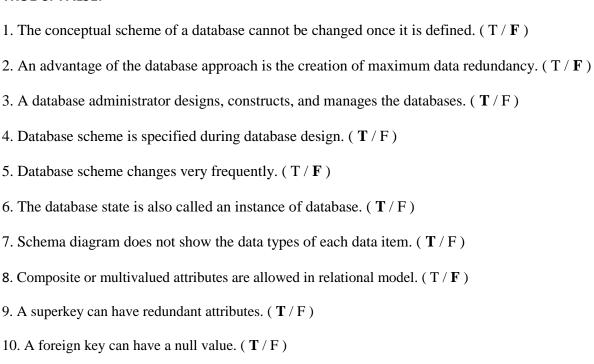
Mid 1 Solution

Question 1: (15 Marks)

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Question 2: (20 Marks)

MULTIPLE-CHOICE-QUESTIONS: Encircle only one correct answer 1) Many airline reservation and telephone directory systems that support large number of concurrent transactions with little delay are categorized as a) OLTP b) RTS c) AI d) OFTP
2) is the ability to change the schema at one level of a database system without having to change the schema at next higher level. a) data exchange b) data dependence c) data independence d) data binding
3) data independence changes the conceptual scheme without changing the external scheme. a) physical b) internal c) low-level d) logical
4) language is used to define both the internal and conceptual scheme when there is no separation between these schemes. a) VDL b) SDL c) DDL d) DML
5) A high-level DML used in stand-alone interactive manner is called language.

a) query b) machine c) assembly d) natural							
6) The description of schema constructs and constraints is called data. a) dynamic b) beta c) meta d) key							
7) The description of a database is called database a) schema b) structure c) construct d) implementation							
8) A state that satisfies the structure and constraints of a scheme is called state. a) invalid b) true c) real d) valid							
9) The database state is called of the schema. a) intension b) extension c) expansion d) definition							
10) The ability to modify the data structure and not have to change the programs using that data is called:							
a) data dictionary b) data independence c)data integrity d)referential integrity							

Question 3: (12 Marks)

A chain of pharmacies has offered to give you a free lifetime supply of medicine if you design its database. Given the rising cost of health care, you agree. Here's the information that you gather:

- Patients are identified by an SSN, and their names, addresses, and ages must be recorded.
- Doctors are identified by an SSN. For each doctor, the name, specialty, and years of experience must be recorded.
- Each pharmaceutical company is identified by name and has a phone number.
- For each drug, the trade name and formula must be recorded. Each drug is made by a given pharmaceutical company, and the trade name identifies a drug uniquely from among the products of that company. If a pharmaceutical company is deleted, you need not keep track of its products any longer.
- Each pharmacy has a name, address, and phone number.
- Every patient comes to his Doctor. Every doctor has at least one patient.
- Each pharmacy sells several drugs and has a price for each. A drug could be sold at several pharmacies, and the price could vary from one pharmacy to another.
- Doctors prescribe drugs for patients. A doctor could prescribe one or more drugs for several patients, and a patient could obtain prescriptions from several doctors. Each prescription has a date and a quantity associated with it. You can assume that, if a doctor prescribes the same drug for the same patient more than once, only the last such prescription needs to be stored.

 Pharmaceutical companies have long-term contracts with pharmacies. A pharmaceutical company
 - Pharmaceutical companies have long-term contracts with pharmacies. A pharmaceutical company can contract with several pharmacies, and a pharmacy can contract with several

