Philadelphia University Faculty of Engineering Department of Computer Engineering		Date:- 30/11/2016 Allowed time:- 60 minutes

Database (630323) First Exam (Solutions)

Student Name: - ……..... **ID: - ……**

Question 1: mark the following statements **True** or **False**: 5points

1- Insert operation can only violate Referential Integrity Constraint. **False**

2- The set of attribute that uniquely identify the entity is called Superkey. **True**

3- The database state is a subset of cartesian product of the domains of its attributes. **True**

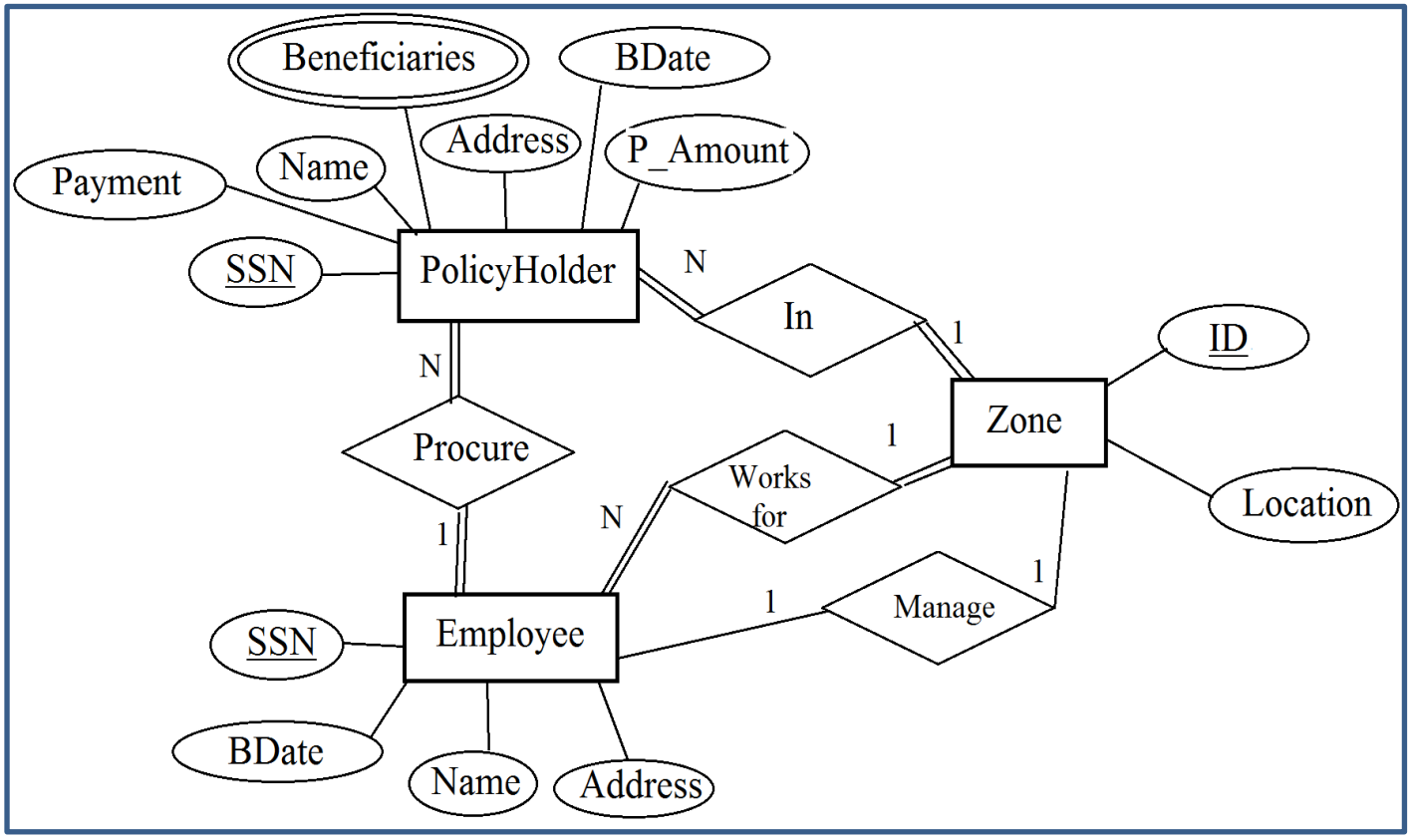
4- The column header in a relation is called tuble in formal definition. **False**

5- Entity integrity constrain is a constraint that involve two relation. **False**

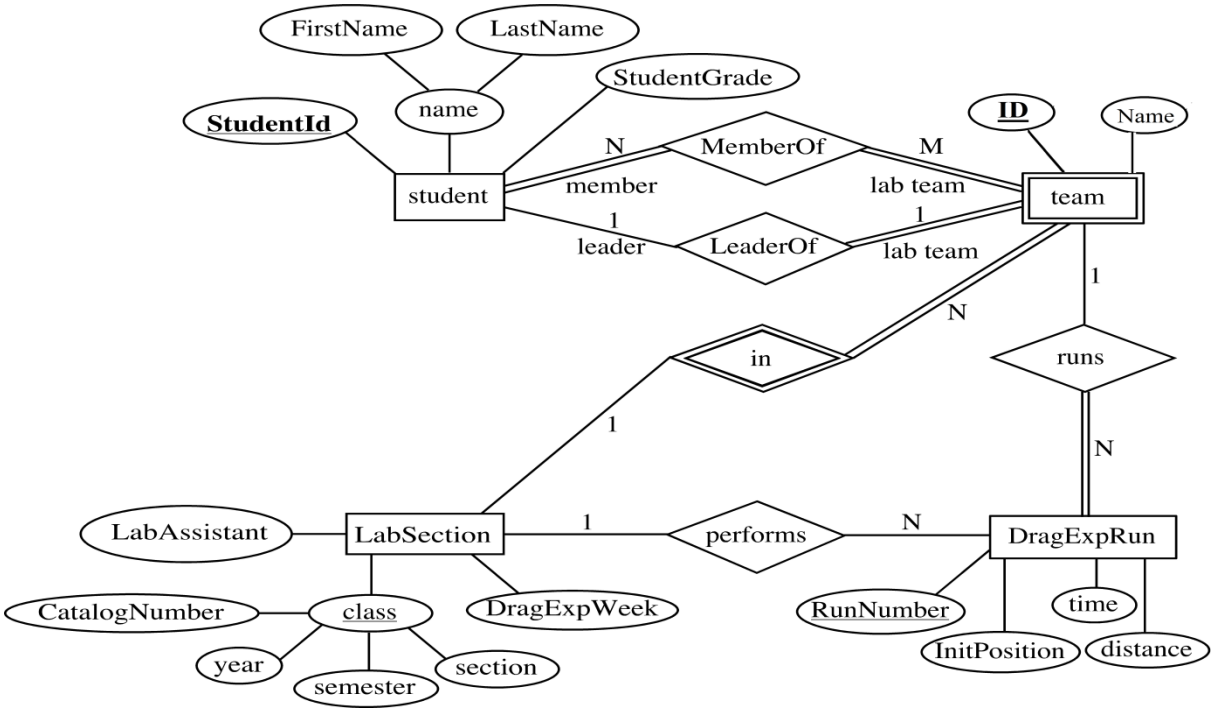
Question 2: considering the following scenario for a life insurance corporation draw ER diagram that represent the database of the company. 5 points

A Life Insurance Corporation provide a Life Insurance services to Policyholders, the company stores all the necessary information about its policyholders in a database the information of the policyholder are: social security number, name, address, date of birth, policy amount, and premium payment also the corporation stores the names of the beneficiaries of the policyholder(there may be multiple beneficiaries). The corporation is divided in to Zones For each zone, the corporation stores the Zone ID and the location. Each zone also has a manager. Every zone has a number of Employees who works for this zone, every Employee must procure a minimum of 10 customers but each customer assign to only one employee. For each employee the company stores social security number, name, address and date of birth.

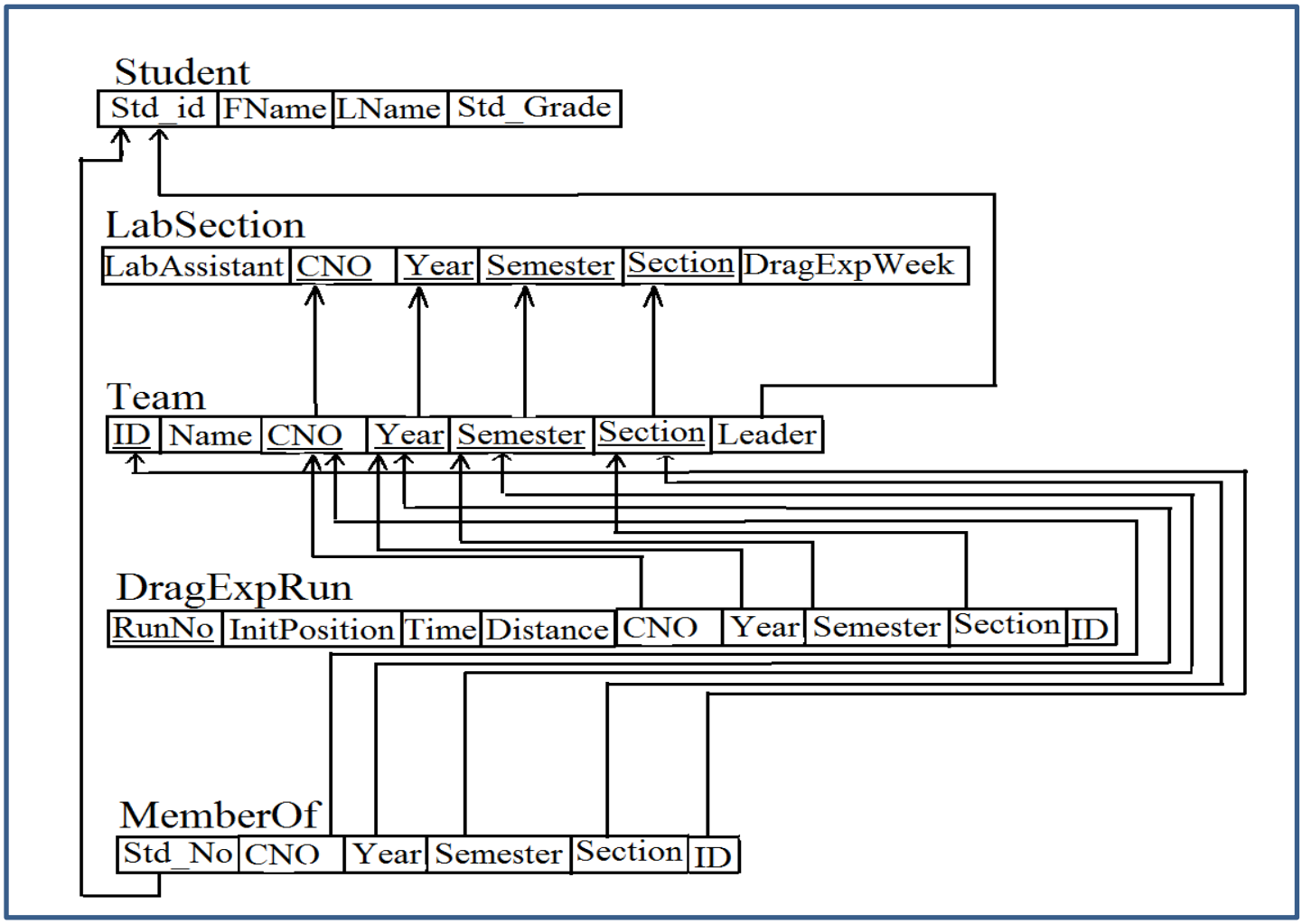
Answer:



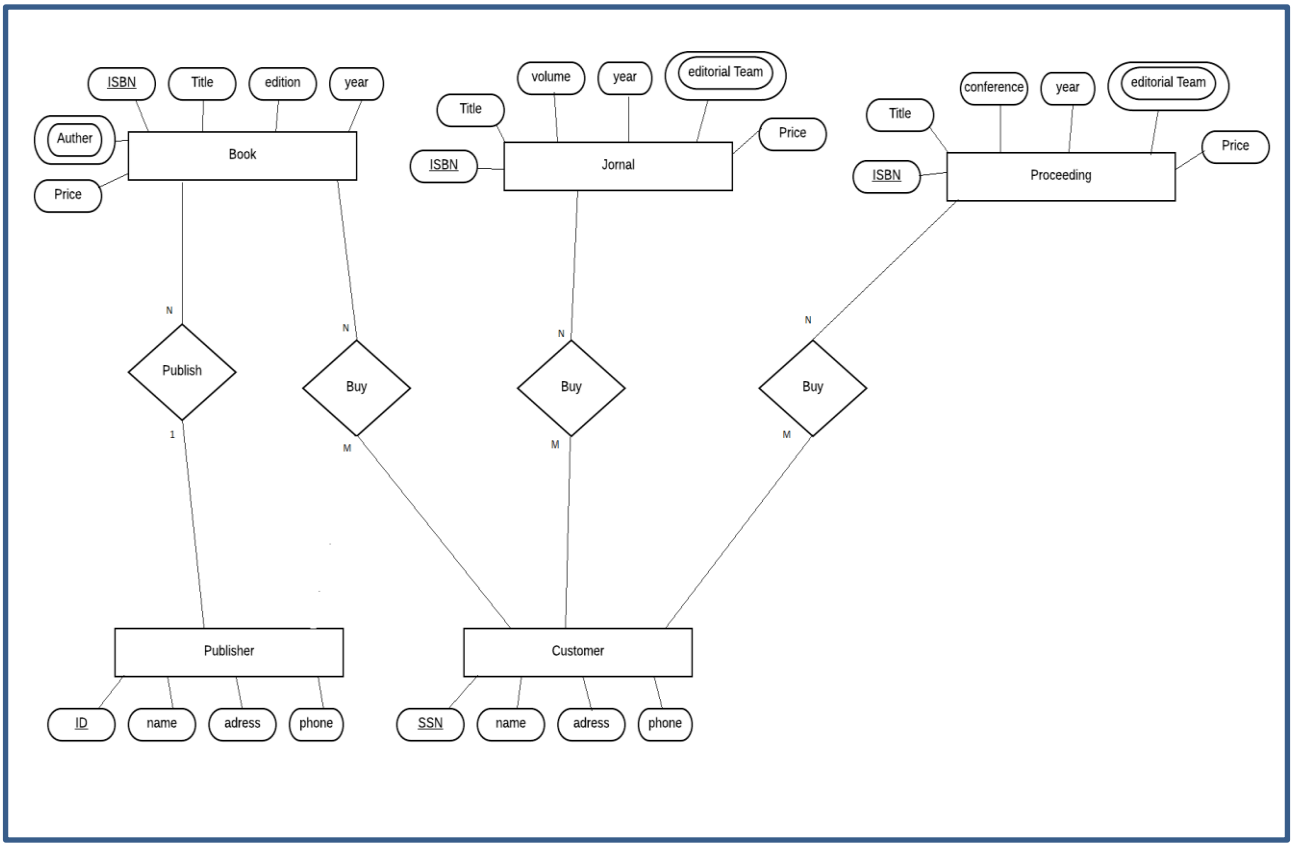
Question 3: the following ER diagram represent student's experiments in physics Lab. Map the diagram to relational schema. 5 points



Answer:

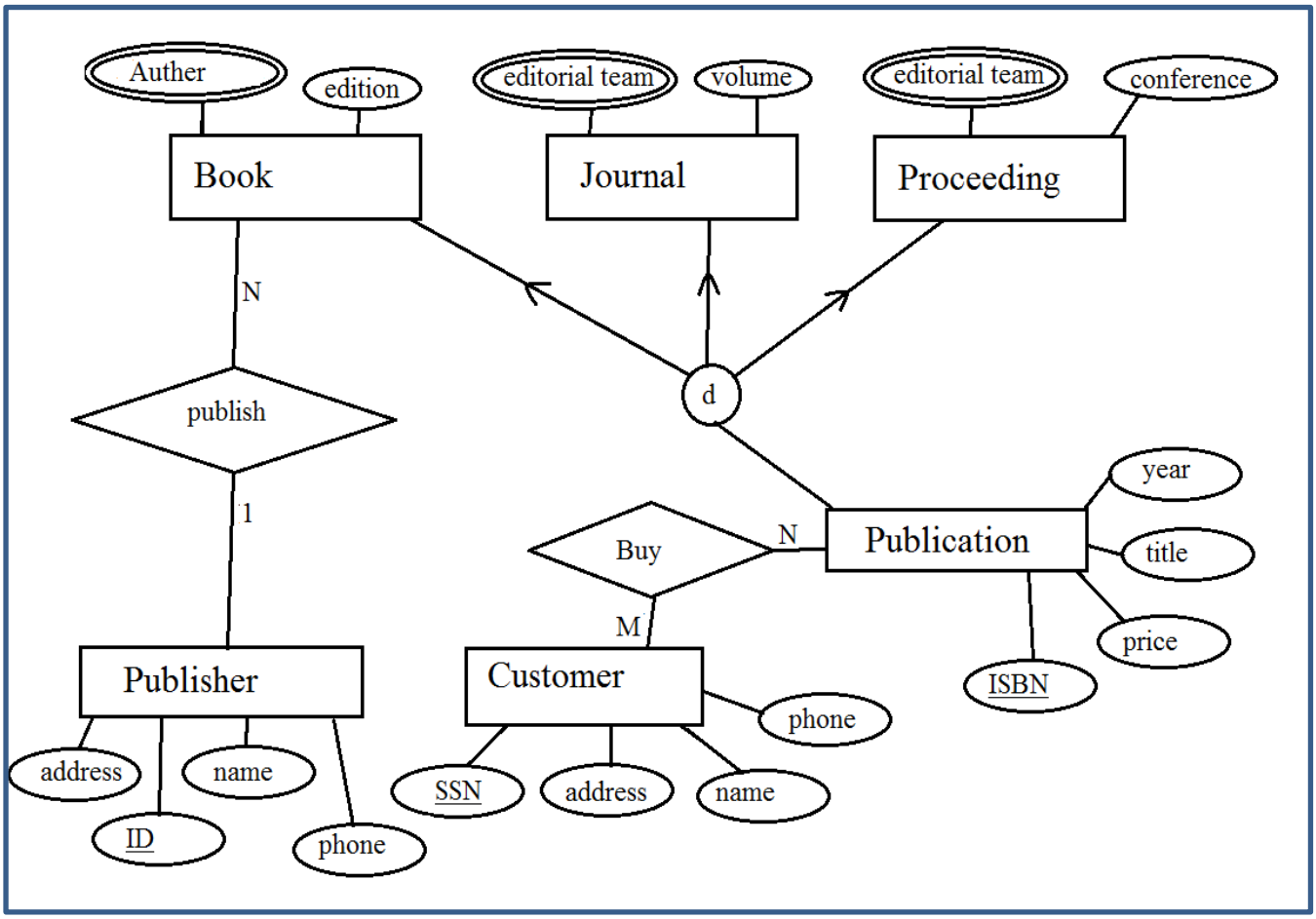


Question 4: given the following ER diagram which represent a book store. 5 points



1- Perform generalization process to produce EER model, update the relationships when nessasry.

Answer:



2- Map the EER model to relational schema using option A (multiple relation for superclass and sub classes).

Answer: