Department of Computer Science and Engineering
University of Barishal
Course Title: Database Management System
Course Code: CSE-2101
1st Mid Exam, 2nd Year 1st Semester: session 2019-20

Time: 1 hour **Marks: 20**

Answer all the questions

1. Suppose you are given the following requirements for a simple database for a car dealership company. The dealership sells both new and used cars, and it operates a service facility. You have to design a database for the following requirements:

- A salesperson may sell many cars, but each car is sold by only one salesperson.
- A customer may buy many cars, but each car is bought by only one customer.
- A salesperson writes a single invoice for each car he or she sells.
- A customer gets an invoice for each car he or she buys.
- A customer may come in just to have his or her car serviced; that is, a customer need not buy a car to be classified as a customer.
- Customer takes one or more cars in for repair or service, one service ticket is written for each car.
- The car dealership maintains a service history for each of the cars serviced. The service records are referenced by the car's serial number.
- A car brought in for service can be worked on by many mechanics, and each mechanic may work on many cars.
- A car that is serviced may or may not need parts (e.g., adjusting a carburettor or cleaning a fuel injector nozzle does not require providing new parts).

a. Construct a clean and concise ER diagram for the Car dealership database. List your assumptions and clearly indicate the cardinality mappings as well as any role indicators in your ER diagram.
b. Construct a Schema Diagram for this project. (Hints: Generate it from ER Diagram)

Good Luck!!!