ELIZADE UNIVERSITY
ILARA-MOKIN
ONDO STATE

FACULTY: BASIC AND APPLIED SCIENCES
DEPARTMENT: MATHEMATICS AND COMPUTER SCIENCE
2nd **SEMESTER EXAMINATION**
2017 / 2018 **ACADEMIC SESSION**

COURSE CODE: CSC 422

COURSE TITLE: Database Management Systems II

COURSE LEADER: Dr. B. Ojokoh

DURATION: 2½ Hours

HOD's SIGNATURE

INSTRUCTION:

Candidates should answer any FOUR (4) Questions.

Students are warned that possession of any unauthorized materials in an examination is a serious assessment offence

Students are permitted to use ONLY a scientific calculator.

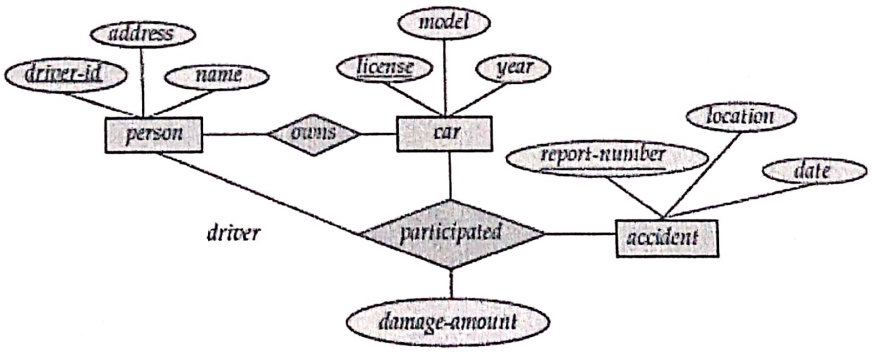
1a) With the aid of a diagram, describe the relationship among the three levels of data abstraction.
b) Design a generalization–specialization hierarchy for a motor-vehicle sales company. The company sells motorcycles, vans, and buses. Justify your placement of attributes at each level of the hierarchy.

2a) Illustrate the diiferences between (among) the following:
i) Weak and Strong Entity Sets ii) Total and Weak Participation
iii) Disjoint and Overlapping Generalization iv) Primary, Candidate and Superkey
b)Outline five main functions of a database administrator.

3a) Construct an E-R diagram for a University database for the scheduling of classrooms for examinations. The database models an entity set *examination*, with attributes *course-code*, *room-no, time.* Also include these additional entities: Course with attributes *course-code*, *course-title, department*; Room with attributes *room_no, capacity, building*.
b) Show justification for including these additional entities and document your assumptions.

4a)Construct an E-R diagram for a housing-finance(loan) company whose customers own one or more houses each. Each house has associated with it an account to record loan and payments.
b) Draw appropriate tables for the E-R diagram

5a) Draw the UML equivalent of the E-R diagram in question 4a.
b) Construct the following SQL queries for the housing-finance relational database:
i) Find the total number of loans with amount greater than 2000.
ii) Add a new customer to the database; assume any values for required attributes.



6a) Design a database schema corresponding to the above E-R diagram for Car Insurance

b) Consider the relational database designed, and give an expression in relational algebra to express each of the following queries:
i)Find the names and addresses of all persons registered with the company
ii) Find all cars with year equal to 2015