



NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
MARCH/APRIL 2016 EXAMINATION

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: CIT843 **Course Unit: 2**
COURSE TITLE: DATABASE MANAGEMENT SYSTEMS

Time Allowed: 2 Hours
Instruction: Answer Any Four Questions

- 1a. Explain what is meant by database management system (DBMS). 3 marks
- b. State five advantages of a database management system. 10 marks
- c. What does a database structure store? 4 ½ marks

- 2a. What do you understand by normalization? 2 marks
- b. Explain the following terms
 - i. Functional dependency 2 marks
 - ii. First, Second, and Third Normal Forms 6 marks
- c. Outline the process for transforming a 1NF table to 2NF. 7 ½ marks

- 3a. Fully explain the Entity-Relationship (ER) model concept. 7 ½ marks
- b. Outline non-diagrammatically the five symbols used for the basic ER constructs. 10 marks

4. Write SQL statements for the following:
 - i. To insert a tuple for Smith who has \$1200 in account A-9372 at the SFU branch.
 - ii. To increase all account balances by 5 percent.
 - iii. To make two different rates of interest payment, depending on balance amount

iv. Delete all loans with loan numbers between 1300 and 1500.

v. Delete all accounts at branches located in Surrey.

17 ½ marks

5. Let us assume that the following staff table (STAFF) has the following records, use the appropriate selection operator(s) to:

Name	Room	Department	Designation
Ajayi	101	CIT	Professor
Chidi	201	ECO	Lecturer I
Musa	202	ECO	Professor
Bello	301	CIT	Senior Lecturer
Ajayi	220	ACC	Senior Lecturer

a. Select only those Staff in the CIT department.
3 ½ marks

b. Select only those Staff with last name Ajayi who are professors.
4 marks

c. Select only those Staff who are either Professors or in the Economics department.

5 marks

d. Select only those Employees who are not in the CIT department or Lecturer I.

5 marks

6. State five properties of the client-server database system architecture. 17 ½ marks