



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

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**COURSE CODE:** CIT844  
**COURSE TITLE:** Advanced Database Management System (2 Credits)

**Answer 4 Questions in 2½ Hours.**

**Total Mark is 70 and each question carries 17½ Marks**

- 1(a) What is a Database? (2 marks)
- 1(b) List and explain three (3) advantages of database approach (7½ marks)
- 1(c) List and explain four (4) security measures used to protect database (8 marks)
  
- 2(a) Discuss extensively an Open Source with local examples? (7 marks)
- 2(b) List three (3) advantages of an Open Source Software. (6 marks)
- 2(c) Mention and explain any three (3) network topology (4½ marks)
  
- 3(a) Write short note on the following:
  - (i) Data Integrity
  - (ii) Data Security
  - (iii) Data Validation( 3 marks each)
- 3(b) What is a Transaction? (4 marks)
- 3(c). Define the following Set operations in terms of relation UNION, INTERSECTION, and DIFFERENCE. (4½ marks)
  
- 4.(a) Explain with examples Relational Database? (7 marks)
- 4(b) List and explain three (3) characteristics of Relations (6 marks)
- 4(c) Mention three (3) basic update operations on relations (4 ½ marks)
  
- 5(a) What is Distributed Database? (5 marks)
- 5(b) List any four (4) operators of SQL and their description (8 marks).
- 5(c) Outline three (3) advantages of Object Oriented Database Management System (4½ marks)
  
- 6(a). Write short note on the following:
  - (i) Dead lock
  - (ii) Data recovery

(iii) SQL

(3 marks each)

6(b) What is a database catalogue system? (4 marks)

6(c) Mention three (3) causes of data loss from database. ( $4\frac{1}{2}$  marks)