



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWASY, JABI-ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
2023_1 POP EXAMINATION

COURSE CODE : CIT 843
COURSE TITLE : INTRODUCTION TO DATABASE MANAGEMENT SYSTEM
CREDIT UNIT : 2
TIME ALLOWED : 2 HOURS
INSTRUCTION : ANSWER QUESTIONS 1(ONE) AND ANY OTHER THREE (3)

- 1a) State five (5) advantages of DBMS? (2½marks)
b) What is the relationship between Forms and Sub-form? When is sub form required?(3½mks)
c.) Write the full meaning of the following acronyms:
(i) DDL, (ii) RDBMS, (iii) ODBC, (iv) SQL v) XML (5 marks)
d) Write short notes on the following SQL Scalar functions:
(i) LCASE(), (ii) ROUND (), (iii) NOW(), (iv) FORMAT () (4 marks)
e) What are the strengths and limitations of Traditional Mainframe Architecture?(5 mks)
f) Why did Relational database systems replace the File based systems (5marks)
- 2a) Describe the term "Database Architecture"? Explain the features of File sharing database system architecture? (8marks)
b) Describe extensively any seven (7) Microsoft Access data types? (7 marks)
- 3a) What is a database management system? Using appropriate diagram, show the contents of a database system (6½marks)
b) With suitable illustration describe the concepts of normalization justify the need for normalization and the first three normal forms (8½marks)
- 4a) Describe in detail the following terms: (i) Two-Tier Client/Server Architecture (ii) N-Tier Client/Server Architectures, (iii) Open Database Connectivity (ODBC) (9marks)
4b) Give suitable explanations on the following relational database concepts (6marks)
i. Relational algebra
ii. Relational operations
iii. Union ($A \cup B$)
iv. Intersection ($A \cap B$)
v. Difference ($A - B$)
- 5a.) What is database recovery? How can you prevent deadlocks from occurring? (4mks)

- b.) Discuss extensively with examples the importance of Database security (4mks)
- c) What is the function of SQL GRANT and REVOKE commands? Using the SQL GRANT and REVOKE statements, exercise the following rights on the relation below. (7mks)

Table: Table name - **EMPLOYEES**

STAFF ID	STAFF NAME	LOCATION	SALARY STATUS	WORK EXPERIENCE	ACCESS RIGHTS
001	Jason Birmingham	Britain	Paid	5	User Data
002	Richard Banks	Britain	Unpaid	5	User Data
003	Frederick Hanson	France	Paid	4	Full Rights
004	Butler Steaks	Italy	Paid	3	Full Rights
005	Francois Mason	France	Paid	3	Full Rights