



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWASY, JABI-ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
September, 2020 EXAMINATIONS

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