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 U B)
iv. Intersection (A n 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