National Open University of Nigeria

Plot 91, cadastral Zone, Nnamdi Azikiwe Express Way, Jabi, Abuja

FACULTY OF SCIENCES

2021_2 EXAMINATION

COURSE CODE: CIT 844

TITLE: ADVANCED DATABASE MANAGEMENT SYSTEMS

CREDIT: 2 CREDIT UNITS

TIME ALLOWED: 2HRS.

INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3)

QUESTION 1 (25 marks) Compulsory
- A. In a database environment, transactions have two main purposes. Discuss **(4 marks)**
- B. Highlight at least three (3) examples of data mining technologies (6 marks)
- C. Differentiate between network transparency and local autonomy (4 marks)
- D. Describe multimedia databases (4 marks)
- E. Give two (2) examples of multimedia databases (2 marks)
- F. Explain data replication in a distributed database (5 marks)

QUESTION 2 (15 marks)

- A. Differentiate between database security and Integrity (2 marks)
- B. Compare and contrast between a malicious and an accidental loss of data (4 marks)
- C. Describe data visualization (3 marks)
- D. Absolute protection of the database from malicious abuse is not possible, but the cost of the perpetrator can be made sufficiently high to deter most if not all attempts to access the database without proper authority. List and explain at least 3 points of security measures which can be taken to protect the database (6 marks)

QUESTION 3 (15 marks)

A. How does the concept of 'authorization and view' enhance database security? (5 marks)

B. Mention and briefly explain any five (5) forms of user authorization to a database (10 marks)

QUESTION 4 (15 marks)

A. Mention four (4) locking protocols schemes that are applicable to the more general case where data can be replicated in several sites (4 marks)

B. Explain the Single–Coordinator Approach scheme of the locking protocols? (5marks)

C. State and briefly outline two (2) advantages and two (2) disadvantages of the Single–Coordinator Approach Scheme of the locking protocols? (6 marks)

QUESTION 5 (15 marks)

A. Briefly explain OODBMS. (4 marks)
B. State three (3) advantages and disadvantages of OODBMS (6 marks)
C. Mention five (5) features of a both Database Management System (DBMS) and Object Oriented Systems (5 marks)