



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-ABUJA
FACULTY OF COMPUTING
DEPARTMENT OF COMPUTER SCIENCE
2025_2 EXAMINATIONS

Course Code: CIT 427

Course Title: Database Systems and Management

Credit: 3 Units

Time allowed: 2½ Hours

Instruction: Answer Questions **ONE (1)** and any other **THREE (3)**

Question 1

- a. Describe any three examples of database management systems. **(9marks)**
- b. Explain 3 components of the physical database structure **(6 marks)**
- c. Construct a typical model for XML document for a book details in a library. **(6 marks)**
- d. Highlight 4 processes of data manipulation **(4 marks)**

Question 2

- a. Distinguish between the latency, throughput and ‘energy use’ performance measures. **(9 marks)**
- b. What is a foreign key? **(3 marks)**
- c. State the responsibilities of a database administrator **(3 marks)**

Question 3

- a. Clarify the differences between random and sequential access? **(6 marks)**
- b. What is referential integrity? **(3 marks)**
- c. Outline the components of a Structured Document. **(3 marks)**
- d. Narrate in simple term the difference between procedural and non-procedural Language **(3 marks)**

Question 4

- a. Discuss 4 duties of a Database Administrator? **(8 marks)**
- b. Define the following terms in database:
 - (i) instances **(2 marks)**
 - (ii) schemas **(2 marks)**
- c. Briefly discuss the importance of physical data models and list the examples? **(3 marks)**

Question 5

- a. Distinguish between xml element type and attribute list declarations? **(6 marks)**
- b. Highlight the most significant differences between volatile memory and non-volatile memory **(6 marks)**
- c. List the categories of database management system. **(3 marks)**

Question 6

- a. Briefly explain the categories of data independence. **(6 marks)**
- b. Define a database management system. **(2 marks)**
- c. Discuss the characteristics of a tuple? **(5 marks)**
- d. Identify 4 common features of the database **(2 marks)**