



**National Open University of Nigeria**  
**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**  
**Faculty of Science**  
**Department of Computer Science**  
**2023\_1 POP EXAMINATION**

**COURSE CODE:** CIT427

**COURSE TITLE:** Database System and Management

**CREDIT:** 3 Units

**TIME ALLOWED:** 3 Hours

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

**Question 1**

- a. Describe object-based logical models. (3 marks)
- b. List the common types of object-based logical models. (5 marks)
- c. Identify the difference between the Read/Write and Read only storage.(5 marks)
- d. Identify the relationship between the XML pointer language and the XML linking language. (5 marks)
- e. Explain the concept of entity-relationship models. (4 marks)
- f. Describe the Slow write, fast read storage. (3 marks)

**Question 2**

- a. (i) Define the term ‘database management system. (2 marks)  
(ii) List the common categories of database management systems. (2 marks)
- b. (i) Describe a data dictionary.  
(ii) State the data structures required for physical system implementation (5 marks)
- c. (i) Identify the forms of accessibility, addressability. (3 marks)  
(ii) Briefly describe the concept of file organization. (3 marks)

**Question 3**

- a) Distinguish between DDL and DML. (6 marks)
- b) Describe the CODASYL approach of the Navigational DBMS. (6 marks)
- c) What is Data Independence ? (3marks)

**Question 4**

- a. Briefly explain four(4) structural components of SQL.(8 marks)
- b. List the three(3) main parts of a DBMS and explain any two (2). (7marks)

**Question 5**

- a. Use appropriate SQL commands to Create a student table called **STUDENT**. The student table should consist of Surname (15 characters), firstname (15characters), Street (25 characters), phone number, age and matriculation number (9 characters) as primary key. (8 Marks)
- b. List the four main parts of a DBMS and explain any two (2). (7marks)

Question 6

- a. Briefly explain the essential elements of an entity-relationship diagram. (6marks)
- b. Give 4 advantages of Offline Storage. (4 marks)
- c. Describe the five (5) components of a data structure. (5marks)