**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)