



National Open University of Nigeria
Plot 91, Cadastral Zone, NnamdiAzikiwe Expressway, Jabi - Abuja
Faculty of Science
Department of Computer Science
2022_2 EXAMINATIONS

COURSE CODE: CIT427

COURSE TITLE: Database System and Management

CREDIT: 3 Units

TIME ALLOWED: 2 ½ Hours

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

Question ONE

- a. Describe the levels of computer data storage, with aid of diagram (5 marks)
- b. Describe the major components of a data structure. (5 marks)
- c. What are the basic functions of a Data manipulation language in DBMS. (4marks)
- d. Identify the relationship between the XML pointer language and the XML linking language.(5 marks)
- e. Describe the CODASYL approach of the Navigational DBMS. **6 MARKS**

Question Two

- a. Explain the components of web services architecture. (8 marks)
- b. Highlight the steps involved in a typical Web Service Invocation. (5 marks)
- c. Identify the XML specification that predefines the following internal entities.

Question Three

- a. Use appropriate SQL commands to Create a student table called **EMPLOYEE**. The student table should consist of Surname (15 characters), firstname (15characters), Street (25 characters), phone number, age and staff number (9 characters) as primary key. (8 Marks)
- b. Identify the basic six (6) operations a relational algebra can undergo (3 marks)
- c. State the differences between XML and HTML. (4 marks)

Question Four

- a. List the four main parts of a DBMS and explain any two (2). (7marks)
- b. Briefly explain the essential elements of an entity-relationship diagram. (6marks)
- c. Briefly discuss the concept of file organization. 2 marks

Question Five

- a. Briefly describe the concept of Database Servers. (4marks)
- b. Explain the data structures required for physical system implementation. (6marks)
- c. List the common types of object-based logical models. (5marks)
- d.

Question Six

- a. Distinguish between Data Definition Language and Data Manipulation Language. (6 marks)
- b. Identify the basic six operations a relational algebra can undergo (6 marks)
- c. Briefly discuss the concept of logical category of data independence. (3 marks)