

**BOWEN UNIVERSITY IWO, OSUN STATE**  
**COLLEGE OF COMPUTING AND COMMUNICATIONS STUDIES**  
**COMPUTER SCIENCE PROGRAM**  
**B. Sc. DEGREE SECOND SEMESTER EXAMINATION, 2022/2023 SESSION**  
**COURSE CODE: CIT 408 COURSE TITLE: DATA MANAGEMENT II**  
**COURSE CREDITS: 3 DATE: TUESDAY 20<sup>RD</sup> JUNE 2023 TIME: 2 HOUR 30 MINUTES**  
**INSTRUCTION: Answer any 4 Questions**

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**Question One**

- a. With the aid of examples, show the relationship between Character, field, record, file and database. **10 marks**
- b. Explain different application areas of database **10 marks**
- c. With the aid of a well labelled diagram, discuss the relationship between Human, User and Data in database systems. **5 marks**

**Question Two**

- a. What are relational Systems? **6 marks**
- b. Briefly discuss the relationship between Data Definition Language, Data manipulation Language and Data Control Language. **9 marks**
- c. Explain the following terms in Database systems
  - i. Tables, ii. Tuple iii. Relational Instance
  - iv. Relational Schema v. Relational Key **10 marks**

**Question Three**

- a. With the aid of an example explain the concept of Functional Dependency **10 marks**
- b. Discuss in details different types of functional dependency **10 marks**
- c. State the advantages of functional dependency in database systems. **5 marks**

**Question Four**

- a. What do you understand by the term normalization? **5 marks**
- b. Why is it that normalization is an important concept in database systems? **5 marks**
- c. With the aid of examples explain First Norm Form, Second Norm Form and Third Norm Form. **15 marks**

**Question Five**

- a. A distributed database is a collection of multiple interconnected databases. Discuss **7 marks**
- b. Briefly explain the factors encouraging Distributed Database Management System **8 marks**
- c. With the aid of diagram discuss various Distributed DBMS Architectures **10 marks**

**Question Six**

- a. What is term Transaction in Database Management? and discuss the ACID properties of Transaction. **8 marks**
- b. Briefly explain the state of transaction with the aid of diagram. **10 marks**
- c. With the aid of examples discuss models used to represent database modification of transaction. **7 marks**