UNIVERSITY OF EDUCATION, WINNEBA
INSTITUTE FOR TEACHER EDUCATION AND
CONTINUING PROFESSIONAL DEVELOPMENT
(ITECPD)
END-OF-FIRST-SEMESTER EXAMINATIONS. AUGUST, 2023

LEVEL 300
COURSE CODE: JBT 351
COURSE TITLE: DATABASE APPLICATION AND SOFTWARE DEVELOPMENT
TIME ALLOWED: 2 HRS

STUDENT'S INDEX NUMBER:

VISIT: WWW.COLEMANPUBLICATION.COM FOR MORE

GENERAL INSTRUCTIONS:
- This paper is made up of ONE SECTION.
- *The Section is made up of five essay type questions.*
- *Answer any THREE questions in your answer booklet.*
- *Each question carries equal marks. You are expected to start each question on a new page.*
- *You are expected to hand over your answer booklet to the invigilator before you leave the examination hall.*

Instruction: *Answer any three (3) questions in the answer booklet provided.*

1. Investigate any **four (4)** fundamental types of database keys, and delve into their roles and functionalities in ensuring data integrity, establishing relationships between tables, and optimizing data retrieval and manipulation in contemporary database management systems. **(20 Marks)**

2. Compare and contrast the file-based approach and the database approach in data management, exploring **two (2) advantages** and **two (2) disadvantages** of each, and how they impact data storage, retrieval, security, and scalability in modern Information Technology environments. **(20 Marks)**

3. As an ICT teacher, how would you explain **five (5)** essential components of a Database Management System (DBMS) environment, and how they collaborate to ensure efficient data management and seamless operations in modern Information Technology to a young learner? **(20 Marks)**

4. In not less than three lines, describe 'attributes' in the context of databases with examples, and in **four (4)** ways, how they play a pivotal role in defining the characteristics, organizing data, and enabling efficient data retrieval and manipulation in modern Information Technology? **(20 Marks)**

5. As part of introducing the careers in ICT to your students, you mentioned Database Administrator to them. Delve into the critical role of a Database Administrator (DBA) in modern Information Technology environment, exploring **four (4)** functions and responsibilities of a DBA to them.

(20 Marks)