



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS
DEPARTMENT OF COMPUTER SCIENCE & SOFTWARE ENGINEERING
UNIVERSITY EXAMINATIONS FOR THE DEGREE
IN BUSINESS INFORMATION SYSTEMS
3RD YEAR 1ST SEMESTER
2023/2024 ACADEMIC YEAR
MAIN CAMPUS**

COURSE CODE: ITB 2311

COURSE TITLE: Data Management

EXAM VENUE: LR 5

STREAM:BIS

DATE:7/1/25

EXAM SESSION:14-16.00 PM

TIME: 2 HOURS

INSTRUCTIONS

- 1. Answer QUESTION ONE (Compulsory) and ANY other TWO questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
- 4. No mobile devices (e.g. laptops, phones, e.t.c.) are allowed into the Examination Room**

QUESTION ONE

(30 MARKS)

- (a) i. What is data life-cycle? (2 Marks)
- ii. The data management life-cycle contain a number of phases, describe these phases. (6 Marks)
- iii. The first stage of data management life-cycle requires some questions to be answered before collecting data in a research study. What are FOUR such questions? (4 Marks)
- (b) List and explain FOUR factors that form the basis for which a data indexing technique is evaluated. (6 Marks)
- (c) With the aid of a diagram, show the relationship between file, record and fields in an entity. (6 Marks)
- (d) Describe the THREE levels of Abstraction. (6 Marks)

QUESTION TWO

(20 MARKS)

- (a) How does physical data independence differ from logical data independence? (4 Marks)
- (b) i. Define with examples, Entity, Attributes and Relationship. (6 Marks)
- ii. Draw an ER diagram for the statement “**Every Department has a HoD.**” Also identify the entities and the relationship. (6 Marks)
- (c) Define database security and explain its importance. (4 Marks)

QUESTION THREE

(20 MARKS)

- (a) State FOUR examples of database threats. (4 Marks)
- (b) There are four different types of database-system users, differentiated by the way they interact with the system. Give these system users explaining with examples their level of access within the database management system. (8 Marks)
- (c) Assume your CEO discusses the possibility of transforming the dossier from a file application to a database management system. Knowing that the company recently took you for Data Management Course II, he expresses his concerns to you regarding the transition to database management systems. Discuss FOUR valid points how you will convince him that it is okay to switch to a database management system. (8 Marks)

QUESTION FOUR**(20 MARKS)**

(a) Suppose you have to redesign an interface used by clerical staff for data entry to a government database. The current interface is line-based. Your customer wants to redesign this interface to improve productivity and lower data entry error rates which are currently quite high.

Discuss:

i. FOUR key questions you will want answered by the customer and current interface users to help you decide on a design; (4 Marks)

iii. FOUR Key reasons why data integrity is an important aspect in interface design and data management. (4 Marks)

(b) Your new ICT Manager does not understand the data management challenges your company faces. She has told you to write FIVE questions that will help her understand what is at stake. Which questions will you pen down? (5 Marks)

(c) Discuss the Big data 4 V's (4 Marks)

(d) Describe the evolution of Business Intelligence. (3 Marks)

QUESTION FIVE**(20 MARKS)**

(a) When archiving data, what FIVE considerations should one make? (5 Marks)

(b) i. What is a Data Management Plan? (2 Marks)

ii. Discuss some FOUR data discover tools. (8 Marks)

(c) List the procedure of how to use the data engine class in your report or widget code.(5 Marks)

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