

UGANDA MARTYRS UNIVERSITY

UNIVERSITY EXAMINATIONS

END OF SEMESTER FINAL ASSESSMENT

SEMESTER I, 2022

YEAR II EXAMINATION FOR BAM II, BPSCM II & BIBM

INTRODUCTION TO INFORMATION SYSTEMS AND DATABASES

DATE: Tuesday, 13th December 2022

TIME: 2:00pm to 5:00pm

Instructions:

1. Carefully read through ALL the questions before attempting
2. **ANSWER FOUR (4) Questions** (Two from each section and all questions carry equal marks)
3. Ensure that your **Reg Number** is indicated on all pages of the examination answer booklet.
4. Ensure your work is **clear** and **readable**. Untidy work shall be penalized
5. Any type of examination Malpractice will lead to automatic disqualification

SECTION A (INFORMATION SYSTEMS)

Question One

- a. "Databases are more effective in running a business than paper and pencil systems". Justify the statement (13 Marks)
- b. While it is obvious that there are some things common to all organizational structures, there are more differences and unique features than similarities. List and discuss at least six features that are unique to each organization. (12 Marks)

Question Two

"Databases affect organizations economically and behaviorally". Discuss (25 Marks)

Question three

- a. Distinguish between MIS and DSS. Who within the organization is most likely to find each useful, and why? (10 Marks)
- b. Identify the three main categories of information systems in relation to the groups they serve and the functional areas in which they operate (6 Marks)
- c. List and define the four major types of information systems, and give at least two information outputs to be expected from each one. (7 Marks)

Question four

- a. Discuss the interaction between management and the development of information systems within the company. (13 Marks)
- b. Explain with examples why you would recommend a company to adopt database especially during lockdown times (12 Marks)

SECTION B (DATABASES)

Question One

- a. Define the following terminologies as used in a database environment (@ 2 Marks)
- i. Database
 - ii. DBMS
 - iii. Authorization
 - iv. Cardinality
 - v. Database Design
 - vi. Primary Key
- b. Explain why an organization like UMU should use a DBMS over the File based approach to manage its information in a database (13 Marks)

Question two

- a. Discuss the different types of databases. (12 Marks)
- b. How does the database approach to data management increase the efficiency and effectiveness of an organization? (13 Marks)

Question three

A Country Bus Company owns a number of busses. Each bus is allocated to a particular route, although some routes may have several busses. Each route passes through a number of towns. One or more drivers are allocated to each stage of a route, which corresponds to a journey through some or all of the towns on a route. Some of the towns have a garage where busses are kept and each of the busses are identified by the registration number and can carry different numbers of passengers, since the vehicles vary in size and can be single or double-decked. Each route is identified by a route number and information is available on the average number of passengers carried per day for each route. Drivers have an employee number, name, address, and sometimes a telephone number.

a. In a table format, identify the following: (15 Marks)

- i. Entities
- ii. Attributes
- iii. Relationships

b. Draw an ERD to represent the above scenario clearly indicating the cardinalities (10 Marks)

Question four

UMU has acquired a database application for its HR department to improve records management. The following table 'Employees' is used by the application to store employee data.

E_ID	Name	Age	Rank	Salary
E01	Denis	34	Senior	1000000
E02	Michael	28	Associate	1500000
E03	Emmanuelle	20	Junior	450000
E04	Georgina	30	Junior	450000
E05	Moses	23	Technical	700000

Required:

- a) Write an SQL statement to create a database 'Employee_Data' for UMU (2 Marks)
- b) Write an SQL statement to create the 'Employees' table (2 Marks)
- c) Write an SQL statement one would use to insert the first record into the table (3 Marks)
- d) What is the Key in the above table (2 Marks)
- e) Write an SQL statement that would show all Employees with all their details (2 Marks)
- f) Write a statement that displays only the names of employees and their salaries (3 Marks)
- g) Write a statement that displays the total wage bill of UMU (3 Marks)
- h) Write a statement that would change Denis' salary to 1200000 (4 Marks)
- i) Write a statement that displays only the Junior employees (4 Marks)

END