



PAN AFRICA CHRISTIAN UNIVERSITY

BACHELOR OF BUSINESS INFORMATION TECHNOLOGY (BBIT)

END OF TERM EXAMINATION

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: BIT 106

CAMPUS: ROYSAMBU

COURSE TITLE: DATABASE MANAGEMENT SYSTEMS

EXAM DATE: 8TH AUGUST 2019

TIME: START 09:00 HOUR – END 12:00 HOUR

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other Three questions in Section **B**.
- Write only your **student number** on the answer booklet provided.
- None programmable calculators permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

SECTION A

(Answer ALL questions in this section)

QUESTION 1

- a) Define the following terms
- i) Database **(2 Marks)**
 - ii) Primary key **(2 Marks)**
- b) Differentiate between View and a table **(4 Marks)**
- c) A University student wants to build an online application and has chosen Microsoft access as his DBMS. Briefly explain why this combination is not applicable and suggest any other two DBMS software that would work better for his application

(6

Marks)

- d) Discuss any **FOUR** data types that are supported in SQL **(8 Marks)**
- e) Outline **THREE** anomalies that may occur in an unnormalized database **(3 Marks)**
- f) Explain **THREE** limitations associated with traditional file-based systems

(3

Marks)

- g) Outline any **TWO** mechanisms of implementing database security **(4 Marks)**

SECTION B

(Answer any FOUR (4) questions in this section)

QUESTION 2

- a) Outline any **TWO** advantages an organization may gain by implementing database systems **(2 Marks)**
- b) State and discuss any four database models **(8 marks)**

QUESTION 3

- a) Outline **TWO** categories of SQL statements **(2 marks)**
- b) Write SQL codes to perform the following tasks
- i) Create tables
- **Employee:** id, fname, sname, dept_code, email, phone_no, job_title.
 - **Employee_update_audit:** employee_id, change_date, action. **(4 marks)**
- ii) Insert the following employee details into the employee table;
- ID: EMP_001
 - Firstname: John
 - Second name: Doe
 - Dept_code: dpt001
 - Email: jdoe@myorg.com
 - Phone number: 0725 – 445566
 - Job title: driver **(4 marks)**

QUESTION 4

Mombasa constructors is a company specializing in real estate development. They deal with customers who over the year come back and commission various jobs. Customers may be individuals or companies. For any job a number of workers may work on it and a worker may work on more than one job. On each job different types of building materials and machinery are used. Particular materials are all supplied by a different supplier. All machinery used is owned by the company and each machinery can be used in multiple jobs

- i) Outline all entities present in the scenario described above **(5 marks)**

ii) Draw a well decomposed Entity-Relation diagram for the above scenario.

(5

marks)

QUESTION 5

- a) Outline any **FIVE** functions of a DBMS **(4 marks)**
- b) Discuss the levels of the **THREE** scheme database architecture **(6 Marks)**

QUESTION 6

- a) Outline **FOUR** security threats to a database system **(4 Marks)**
- b) Entity relationships can be classified into two main categories; by use of cardinality and optionality, discuss the relationships based on Cardinality **(6 marks)**

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