



## UNIVERSITY EXAMINATIONS

### EXAMINATION FOR MAY/AUGUST 2021/2022 FOR: BACHELOR OF SCIENCE IN COMPUTER SCIENCE, AND BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

### **CODE: RCS 432 DATABASE ADMINISTRATION**

DATE: 29<sup>TH</sup> NOVEMBER, 2021

TIME: 2 HOURS

#### **GENERAL INSTRUCTIONS:**

This is a closed book examination. Text book/Reference books/notes are not permitted.  
Students are NOT permitted to write on the examination paper during examination time.

#### **SPECIAL INSTRUCTIONS:**

This examination paper consists Questions in Section A followed by section B

**Question Section A is compulsory. Answer any other two questions in section B.**

QUESTIONS in ALL Sections should be answered in the answer booklet(s) to be issued.

- 1. PLEASE start the answer to EACH question on a NEW PAGE.**
- 2. Keep your phone(s) switched off at the front of the examination room.**
- 3. Keep ALL bags and caps at the front of the examination room and DO NOT refer to ANY unauthorized material before or during the course of the examination.**
- 4. ALWAYS show your working.**
- 5. Marks indicated in parenthesis i.e. ( ) will be awarded for clear and logical answers.**
- 6. Write your REGISTRATION No. clearly on the answer booklet(s).**
- 7. Write the number of the question on the answer booklet(s) in the order you have answered them.**
- 8. YOU are ONLY ALLOWED to leave the exam room 30minutes to the end of the Exam.**
- 9. DO NOT write on the QUESTION PAPER. Use the back of your BOOKLET for any calculations or rough work.**

**SECTION A: Answer ALL questions in this section.**

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**QUESTION ONE (30 MARKS)**

(a) **Explain** the meaning of the following terms in the Database Management systems:

- (i) Database Management Administration (DBMA) (2 Marks)
- (ii) Decision Support Systems (DSS) (2 Marks)
- (iii) Enterprise Resource Planning System (ERPs) (2 Marks)

(b) **Discuss** the difference between information and data in DBM System ( 4 Marks)

(c) **Describe** the purpose of creating a mission statement and mission objectives for the required database during the planning stage (4 Marks)

(d) **Discuss** what a user view represents when designing a database system (4 Marks)

(d) **Describe** FOUR typical functionalities of typical Database Management Systems (DBMS) (8 Marks)

(e) **Explain** the process of fact-finding attempts to achieve success for a database developer (4 Marks)

**SECTION B: Answer any Two questions. Use short answers (40 Marks)**

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**QUESTION TWO (20 Marks)**

(a) **Discuss** how normalization may be used in an organization's database design (4 Marks)

(b) **Describe** an approach for converting a unnormal form (UNF) table to first normal form (1NF) (6 Marks)

(c) **Describe** the characteristics of a table in third normal form (3NF) (4 Marks)

(d) **Determine** how you would convert the first normalized (1NF) data form below into third normal form (3NF) (*Show your work out step by step*) (6 Marks)

Student (Student\_Number, Student\_name, credit\_hours, advisor\_number, advisor\_name, course\_number, Course\_title, Grade);

### **QUESTION THREE (20 Marks)**

- (a) **Discuss** TWO reasons why Data Modeling is important for organizations **(4 marks)**
- (b) **Describe** FIVE characteristics of a good Data Model **(10 marks)**
- (c) **Discuss** THREE important roles played by Riara University users in the process of database design. **(6 marks)**

### **QUESTION FOUR (20 Marks)**

- (a) **Describe** FIVE components of the DBMS environment and (using a diagram) show how they relate to each other **(10 marks)**
- (b) **Discuss** the advantages and disadvantages of the DBMS **(6 marks)**
- (c) **Describe** the potential benefits of developing a prototype database system. **(4 marks)**

### **QUESTION FIVE (20 Marks)**

- (a) **Explain** TWO major data languages of SQL and the function they serve in DBM **(4 Marks)**
- (b) **Explain** the function of each of each of the SIX clauses in the following SQL statement: **(10 Marks)**

FROM  
WHERE  
GROUP BY  
HAVING  
SELECT  
ORDER BY

- (c) **Describe** the meaning of Online Analytical Processing (OLAP) applications in database management, and give an example of how to identify the characteristics of such applications in a business organization **(6 Marks)**