



**FINAL EXAMINATION**  
**MARCH 2024**

---

<b>COURSE TITLE</b>	<b>DATABASES</b>
<b>COURSE CODE</b>	<b>RCIT4133</b>
<b>DATE/DAY</b>	<b>20 JUNE 2024 / THURSDAY</b>
<b>TIME/DURATION</b>	<b>09:00 AM - 11:00 AM / 02 Hour(s) 00 Minute(s)</b>

---

**INSTRUCTIONS TO CANDIDATES :**

1. Please read the instruction under each section carefully.
2. Candidates are reminded not to bring into examination hall/room any form of written materials or electronic gadget except for stationery that is permitted by the Invigilator.
3. Students who are caught breaching the Examination Rules and Regulation will be charged with an academic dishonesty and if found guilty of the offence, the maximum penalty is expulsion from the University.

(This Question Paper consists of 12 Printed Pages including front page)

**\*\*\*DO NOT OPEN THE QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO\*\*\***

  
**UNIRAZAK**  
**UNIVERSITI TUN ABDUL RAZAK**  
Copying, modifying, or reprinting, is not permitted.

This question paper contains TWO (2) sections. Please answer ALL questions in the answer booklet. [70 MARKS]

**SECTION A**

**(30 Marks)**

There are THIRTY (30) questions this part of the examination paper. Answer ALL questions in the answer booklet.

1. Why do so many modern systems need databases?

- A. Solving management problem.
- B. Solving data management.
- C. Problems to technology.
- D. None of the answer.

2. What functions does a database serve?

- i. Data sharing.
- ii. Data decentralization.
- iii. Data security.
- iv. Data integration.
- v. Data inconsistency.

- A. i, ii, iii and iv.
- B. ii, iii, iv and v.
- C. i, iii, iv and v.
- D. All of the answer.

3. Identify the main components of a database system.

- i. Hardware.
- ii. Software.
- iii. Terms and conditions.
- iv. People.
- v. Procedures.
- vi. Data.

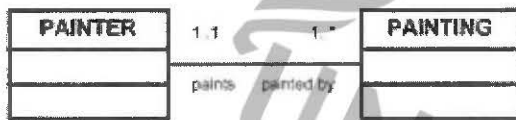
- A. i, ii, iii, iv and vi.
- B. ii, iii, iv, v and vi.
- C. i, ii, iv, v and vi.
- D. None of the answer.

4. Entity relational diagram is represented by \_\_\_\_\_.

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

- A. i, ii and iii.
- B. ii, iii and iv.
- C. i, ii and iv.
- D. None of the answer.

5. The following diagram refer to \_\_\_\_\_.



- A. Chen notation.
- B. Crow's Foot notation.
- C. UML notation.
- D. None of the answer.

6. The following diagram refer to \_\_\_\_\_.



- A. Chen notation.
- B. Crow's Foot notation.
- C. UML notation.
- D. None of the answer.

7. Determine the various types of keys in the database table.

- i. Primary key.
- ii. Foreign key.
- iii. External key.

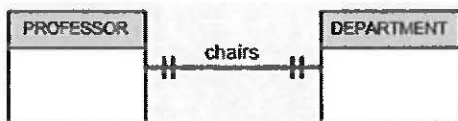
- A. i and ii
- B. ii, and iii
- C. i and iii
- D. None of the answer.

8. What column in the list below contains the primary key?

PROD_CODE	PROD_DESCRIPTION	PROD_PRICE	PROD_ON_HAND	VEND_CODE
001278-AB	Claw hammer	12.95	23	232
123-21UUY	Houseite chain saw, 16-in. bar	189.99	4	235
GER-34256	Sledge hammer, 16-lb. head	18.63	6	231
SRE-657UG	Rat-tail file	2.99	15	232
ZZX/3245Q	Steel tape, 12-ft. length	6.79	8	235

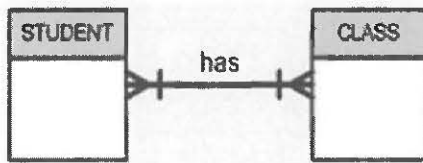
- A. PROD\_CODE
- B. PROD\_ON\_HAND
- C. VEND\_CODE
- D. None of the answer.

9. What relationship does the relational database have?



- A. One to many relationships.
- B. One to one relationship.
- C. Many to many relationships.
- D. None of the answer.

10. What connections does the relational database have?



- A. One to many relationships.
- B. One to one relationship.
- C. Many to many relationships.
- D. None of the answer.

11. Why should data redundancy be avoided?

- A. Leads to data memories.
- B. Leads to data anomalies.
- C. Leads to data functionalities.
- D. None of the answer.

12. What is the definition of Entity Relationship Model (ERM)?

- A. Basis diagram.
- B. Conceptual diagram.
- C. Database design.
- D. None of the answer.

13. What is the definition of Entity Relationship Diagram (ERD)?

- A. Basis diagram.
- B. Conceptual diagram.
- C. Database design.
- D. None of the answer.

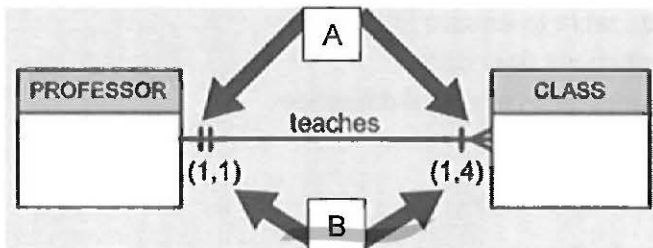
14. Determine the definition of connectivity.

- A. Describes the relationship classification.
- B. Expresses minimum and maximum number of entity occurrences.
- C. Concise statements known as business rules.
- D. None of the answer.

15. Identify the definition of cardinality.

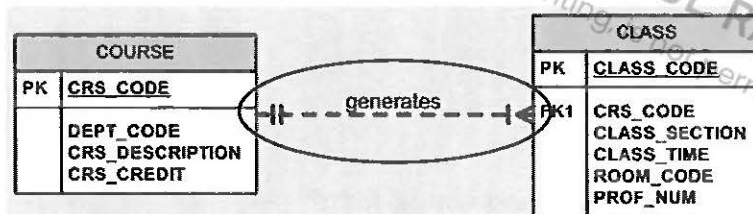
- A. Describes the relationship classification.
- B. Expresses minimum and maximum number of entity occurrences.
- C. Concise statements known as business rules.
- D. None of the answer.

16. Which of the following arrows pointing to cardinalities?



- A. Connectivity.
- B. Cardinalities.
- C. All of the above
- D. None of the above

17. The diagram below has \_\_\_\_\_ relationship between course and class.



- A. strong
- B. moderate
- C. weak
- D. none of the answer

18. What does database normalization mean?

- A. Maximize data redundancies.
- B. Minimize data redundancies.
- C. Equal data redundancies.
- D. None of the answer

19. How many different phases of normalization are there?

- A. One.
- B. Two.
- C. Three.
- D. None of the answer.

20. Objective of normalization is to ensure \_\_\_\_\_.

- A. small table are merged into complex table to ensure integrity
- B. the change of raw data into information via dashboard
- C. data integrity and minimize redundancy in a relational database
- D. data indexing can be done efficiently

21. What steps must be taken to convert to the first normal form?

- i. Identify processes for change.
- ii. Eliminate the Repeating Groups.
- iii. Identify the Primary Key.
- iv. Design the new process.
- v. Identify All Dependencies.

- A. ii, iii and iv.
- B. i, iii and iv.
- C. ii, iii and v.
- D. None of the answer.

22. What steps must be taken to convert to the second normal form?

- i. Make new tables to eliminate partial dependencies.
- ii. Eliminate the Repeating Groups.
- iii. Reassign corresponding dependent attributes.
- iv. Design the new process.

- A. i and iii.
- B. ii and iii.
- C. iii and iv.
- D. None of the answer.



23. What steps must be taken to convert to the third normal form?

- i. Eliminate the Repeating Groups.
- ii. Make new tables to eliminate transitive dependencies.
- iii. Reassign corresponding dependent attributes.
- iv. Design the new process.

- A. i and iii.
- B. ii and iii.
- C. iii and iv.
- D. None of the answer.

24. What does SQL stand for?

- A. Sequence Query Language.
- B. Structed Query Language.
- C. Simultaneous Query Language.
- D. None of the answer.

25. SQL functions may be divided into two groups. What are the categories?

- i. Data surveying.
- ii. Data definition language.
- iii. Data maintenance.
- iv. Data manipulation language.

- A. i and iii.
- B. ii and iii.
- C. ii and iv.
- D. None of the answer.

26. Identify the SQL commands for data manipulation.

- i. INSERT
- ii. SELECT
- iii. SURVEY
- iv. COMMIT
- v. TRENCH
- vi. UPDATE

- A. i, ii, iv, and v.
- B. ii, iii, iv, and vi.
- C. i, iii, iv and v.
- D. None of the answer.

27. What result does the SQL command produce?

**SELECT \* FROM Customers;**

- A. Selects all the records in the "FROM" table.
- B. Selects all the records in the "Customers" table.
- C. Selects several records in the "Customers" table.
- D. None of the answer.

28. What result does the SQL command produce?

**SELECT CustomerName, City FROM Customers;**

- A. Selects the "CustomerName" and "City" columns from the "FROM" table.
- B. Selects all the records in the "Customers" table.
- C. Selects the "CustomerName" and "City" columns from the "Customers" table.
- D. None of the answer.

29. What result does the SQL command produce?

**DELETE FROM Customers WHERE Country = 'Norway';**

- A. Delete several records from the Customers table where the Country value is 'Norway'.
- B. Delete all the records from the Customers table where the Country value is 'Norway'.
- C. Delete column from the Customers table where the Country value is 'Norway'.
- D. None of the answer.

30. What result does the SQL command produce?

**DELETE FROM Customers WHERE CustomerName='Alfreds Futterkiste';**

- A. Update the customer "Alfreds Futterkiste" from the "Customers" table.
- B. Insert the customer "Alfreds Futterkiste" from the "Customers" table.
- C. Deletes the customer "Alfreds Futterkiste" from the "Customers" table.
- D. None of the answer.

  
**UNIRAZAK**  
UNIVERSITI TUN ABDUL RAZAK  
Copying, modifying, or reprinting, is not permitted.

**SECTION B**

**(40 Marks)**

There are TWO (2) questions in this part of the examination paper. Answer ALL questions in the answer booklet.

**QUESTION 1**

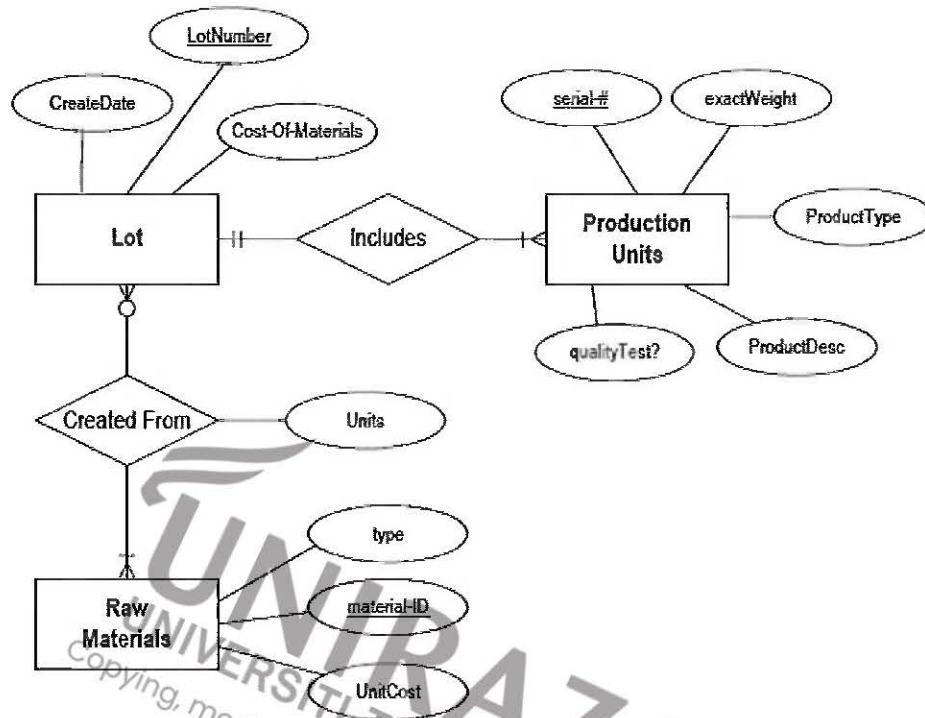
This question is based on the table below:

CUST_ID	CUST_NAME	EMAIL	POSTCODE	PURCHASE
108	Alex Ng	Alexng@hk.com.my	81320	20000.00
109	Sri Sofia	Sri_Sofia@wow.com.my	63457	55000.00
110	Eileen Wong	Ewong@now.com.ny	79800	30000.99
112	Sujata Krishnan	SKrishnan@bow.com.my	42000	45000.50

- (a) Write the SQL statement to **create a table** called CUSTOMERS with the attributes as in the table above and identify the primary key. (5 marks)
- (b) Write the SQL statement to **insert a new customer** with the details below: (5 marks)
- Customer ID : 156  
Customer Name: Bradley Cooper  
Email: bcooper@tango.com.my  
Postcode: 42000  
Total purchase: RM30,000.00
- (c) Update table to **change postcode** for Customer with Customer ID 110 88200. (5 marks)
- (d) Change table to include a new attribute called CONTACT which will keep handphone numbers. (5 marks)

QUESTION 2 (20 marks)

This question is based on the diagram below:



Convert the ER diagram above into a relational database schema. Be certain to indicate primary keys and referential integrity constraints.

\*\*\*END OF QUESTIONS PAPER \*\*\*



**UNIRAZAK**  
**UNIVERSITI TUN ABDUL RAZAK**  
Copying, modifying, or reprinting, is not permitted.