

Q.4	Attempt any two:				
i.	Describe the steps involved in the database design - creation - manipulation cycle.	5	3	10	3
ii.	What is the role of DDL and DML in database design and querying?	5	2	10	3
iii.	Give an example of a relational schema for a library database.	5	3	10	3
Q.5	Attempt any two:				
i.	What are case statements in SQL? How are they used for conditional logic?	5	2	10	4
ii.	What are UDFs, stored procedures, and cursors in SQL?	5	1	10	4
iii.	What is partitioning in SQL? How does it affect query performance and rank functions?	5	2	10	4
Q.6	Attempt any two:				
i.	Compare primary indexes with clustered indexes.	5	2	10	5
ii.	Describe the order of query execution in SQL.	5	2	10	5
iii.	What techniques can be used for fraud detection in a transaction database?	5	2	10	5

*Total No. of Questions: 6**Total No. of Printed Pages: 4***Enrollment No.....**

Knowledge is Power

Faculty of Management Studies**End Sem Examination Dec 2024****MS5EB03 Data Warehousing & OLAP**

Programme: MBA

Branch/Specialisation: Management

Duration: 3 Hrs.**Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

	Marks	BL	PO	CO	PSO
Q.1 i. Which of these SQL statements retrieves rows containing a pattern 'med' in a column?	1	1	10	1	
(a) SELECT * FROM table WHERE column = 'med';					
(b) SELECT * FROM table WHERE column LIKE '%med%';					
(c) SELECT * FROM table WHERE column IS 'med';					
(d) SELECT * FROM table WHERE column BETWEEN 'm' AND 'd';					
ii. What is the primary difference between OLAP and OLTP?	1	2	10	1	
(a) OLAP is used for transaction processing, while OLTP is used for analytics					
(b) OLAP focuses on historical data and multidimensional analysis, while OLTP manages current, operational data					
(c) OLAP uses normalized tables, while OLTP uses denormalized tables					
(d) OLAP and OLTP have the same functionalities					

[2]

- iii. What type of JOIN includes all rows from the left table and the matching rows from the right table, with NULLs for non-matching rows?

- (a) INNER JOIN
- (b) LEFT JOIN
- (c) RIGHT JOIN
- (d) CROSS JOIN

- iv. Which of the following SQL statements is used to combine rows from two queries without eliminating duplicate rows?

- (a) UNION
- (b) UNION ALL
- (c) INTERSECT
- (d) MINUS

- v. Which of the following is a key difference between relational and non-relational schemas?

- (a) Relational schemas use tables, while non relational schemas use JSON or other flexible formats
- (b) Non-relational schemas are always faster than relational schemas
- (c) Relational schemas do not support constraints, while non-relational schemas do
- (d) Non-relational schemas cannot handle large datasets

- vi. What is the primary purpose of a data model in database design?

- (a) To visually represent data in a floor plan format
- (b) To organize and structure data for effective storage and retrieval
- (c) To define hardware requirements for database servers
- (d) To simulate user interactions with the database

- vii. In SQL, what is the main purpose of a cursor?

- (a) To execute multiple queries simultaneously
- (b) To iterate through result sets row by row
- (c) To rank rows based on partitioned data
- (d) To create user-defined functions

1 1 10 2

[3]

- viii. What is the purpose of the SQL LEAD () function?

- (a) To access the previous row's value within result set
- (b) To create a new column for rankings
- (c) To access the next row's value within a result set
- (d) To calculate the cumulative total of a column

- ix. What is the main advantage of using a join over a nested query in SQL?

- (a) Joins are always faster than nested queries
- (b) Joins are easier to write and understand than nested queries
- (c) Joins allow data from multiple tables to be combined in a single result set
- (d) Joins avoid using any filtering conditions

- x. What is the primary advantage of using an indexed column in SQL queries?

- (a) It reduces the size of the database
- (b) It improves query performance by enabling faster data retrieval
- (c) It automatically prevents duplicate values
- (d) It eliminates the need for primary keys

Q.2

Attempt any two:

- i. Design an entity-relationship diagram for a university database to manage students, courses, and faculty.

- ii. Describe the structure and use cases of star and snowflake schemas in a data warehouse.

- iii. Explain the difference between OLAP and OLTP in terms of their design and use cases.

Q.3

Attempt any two:

- i. Explain the difference between INNER JOIN and OUTER JOIN.

- ii. Explain how nested queries work in SQL and describe their applications.

- iii. Explain how string and date-time functions are used in SQL.

1 1 10 4

1 2 10 5

1 2 10 5

5 3 10 1

5 2 10 1

5 2 10 1

5 2 10 2

5 2 10 2

5 2 10 2

Marking Scheme**MS5EB03) Data Warehousing and OLAP-(T)**

Q.1	i) B ii) B iii) B iv) B v) A vi) B vii) B viii) C ix) C x) B	1 1 1 1 1 1 1 1 1 1	OR	iii. Example -2 marks Portioning – 2 marks Rank – 2 marks Query optimization – 1 mark	5
Q.2	i. Diagram -4 marks Explanation- 1 marks ii. Definition- 1 marks Diagram -2 marks Use case – 2 marks iii. Difference – 5 marks	5 5 5	Q.6	Attempt any two: i. 5 point- 5 marks ii. 5 points with example- 5 marks iii. 5 Techniques – 5 marks	5 5 5
Q.3	i. Difference – 5 marks ii. Explanation- 2 marks Queries- 1 mark Applications- 2 marks	5 5		*****	
OR	iii. String Function- 3 marks Date time – 2 marks	5			
Q.4	i. Step- 3 marks Example with figure- 2 marks ii. Definition- 2 marks Command – 2 marks Example – 1 mark	5 5			
OR	iii. Diagram -5 marks Notation - 5 marks	5			
Q.5	i. Explanation- 1 marks Syntax- 2 marks Example -2 marks ii. Explanation- 3 marks	5 5			