Reg. No.															

B.Tech. DEGREE EXAMINATION, MAY 2023

Fourth Semester

18CSC209J – DATABASE MANAGEMENT SYSTEMS AND CLOUD INTEGRATION SERVICES

(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours | Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

	Marks	BL	CO	PO
1. Which is not included in DML? (A) Insert (B) Update (C) Delete (D) Alter	1	1	1	1
2. _____ is used to permanently save the work. (A) Read (B) Write (C) Commit (D) Rollback	1	1	1	1
3. Syntax for creating views is _____. (A) Create view as select (B) Create view as update (C) Drop view as select (D) Create view as delete	1	2	1	1
4. In the relation model, the relation are generally termed as _____. (A) Tuples (B) Tables (C) Attributes (D) Rows	1	2	1	1
5. There are similarities between the instructor entity set and the secretary entity set in the sense that they have several attributes that are conceptually, the same across two entity sets, namely, identifier name, salary attributes. This process is _____. (A) Commonality (B) Specialization (C) Generalization (D) Similarity	1	1	2	1
6. Consider the relational schemas Section and Teaches. Find the query which selects the course_id 'CS_102; from database-section	1	2	2	1

Section relation

Course_id	Sec_id	Semester	Year	Building
B10-101	1	Spring	2010	Painter
CS-102	4	Summer	2009	Pack yard
EE-201	3	Fall	2010	Watson
FIN-301	1	Spring	2011	Richard

Teaches relation

Id	Course_id	Sec_id	Semester	Year
1001	CS-101	1	Fall	2009
1002	EE-201	2	Spring	2010
1003	FIN-301	3	Fall	2009
1004	B10-101	1	Summer	2011

(A) Select course_id from section where building = "Richard";
(B) Select course_id from section where year = '2009';
(C) Select course_id from teaches where building = "pack yard";
(D) Select course_id from section where sec_id = '3';

7. Weak entity set is represented as 1 2 3 1
(A) Underline
(B) Double line
(C) Double diamond
(D) Double rectangle

8. A _____ is a property of the entire relation, rather than of the individual tuples in which each tuple is unique. 1 1 3 1
(A) Row
(B) Key
(C) Attribute
(D) Field

9. Which exception is raised when there is an internal problem in PL/SQL? 1 1 4 1
(A) Value error
(B) Internal error
(C) Problem-error
(D) Program-error

10. Which clause is used to open the cursor? 1 1 4 1
(A) Begin
(B) Start
(C) Open
(D) Initiate

11. Which of the following is the correct syntax to declare explicit cursor? 1 2 4 1
(A) Cursor is name Select statement;
(B) Cursor name is Statement select;
(C) Name is cursor Select statement;
(D) Cursor name is Select statement

12. When self_is_null exception is raised? 1 2 4 1
(A) Errors are raised when dividing by zero is attempted
(B) When a member method is invoked on an object type but instance has not been initialized, this exception is raised
(C) Error is PL/SQL occurs when memory is exhausted or corrupt
(D) It is raised when more than one row is returned by a select into statement

13. Union operation eliminates the tuples _____. 1 1 5 1
(A) Simple
(B) Single
(C) Duplicate
(D) Null

14. Functional dependencies are a generalization of _____. 1 1 5 1
(A) Key dependencies
(B) Relation dependencies
(C) Database dependencies
(D) Value dependencies

15. When a relation contains an atomic valve, it is a _____ relation. 1 1 5 1
(A) 1NF
(B) 2NF
(C) 3NF
(D) BCNF

16. 5NF is designed to cope with — 1 1 5 1
(A) Transitive dependency (B) Join dependency
(C) Multi valued dependency (D) Value dependency

17. The dynamoDB, even while receiving millions of requests per second, the time it takes to read will just be milliseconds to microseconds. This property is _____. — 1 1 6 1
(A) Microsecond latency (B) Auto scaling
(C) Serverless (D) NoSQL

18. _____ is another special form of attribute that is used to organize items in a different sorting order. — 1 1 6 1
(A) Sort key (B) Primary key
(C) Super key (D) Foreign key

19. SOA is — 1 1 6 1
(A) Strongly coupled (B) Loosely coupled
(C) Strongly cohesive (D) Lossely cohesive

20. Which index that has the same partition key as the base table, but a different sort key? — 1 1 6 1
(A) Global secondary index (B) Local secondary index
(C) Global primary index (D) Local primary index

PART – B (5 × 4 = 20 Marks) — Marks BL CO PO
Answer **ANY FIVE** Questions

21. Customer (Cust_No, Sales_Person_No, city) — 4 6 1 1
Sales_Person (Sales_Person_No, Sales_Person_Name, Common_Prec, Year_of_hire)
Construct the SQL query for each of the following
(i) Display the list of all customers by Cust_No with the city in which each is located
(ii) List the names of the sales persons who have accounts in Delhi.

22. Differentiate strong and weak entity with an example of ER diagram. — 4 4 2 1

23. An E-R diagram can be viewed as a graph. What do the following mean in terms of the structure of an enterprise schema, when the graph has a cycle? — 4 2 3 1

24. Use PL/SQL concept to check whether the given number is prime or not. — 4 3 4 1

25. State transitive dependency with example. — 4 2 5 1

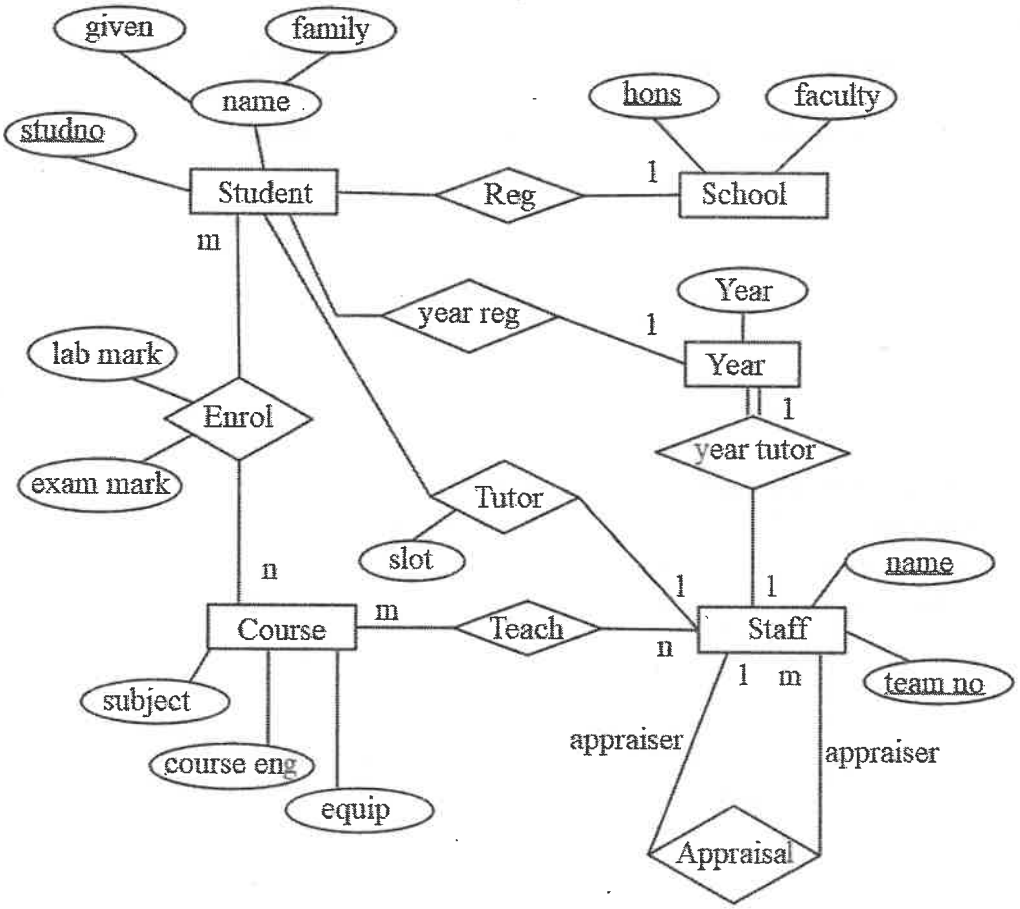
26. Outline the steps to create a table using dynamoDB with example. — 4 2 6 1

27. Explain views in SQL with necessary examples. — 4 1 4 1

PART – C (5 × 12 = 60 Marks)

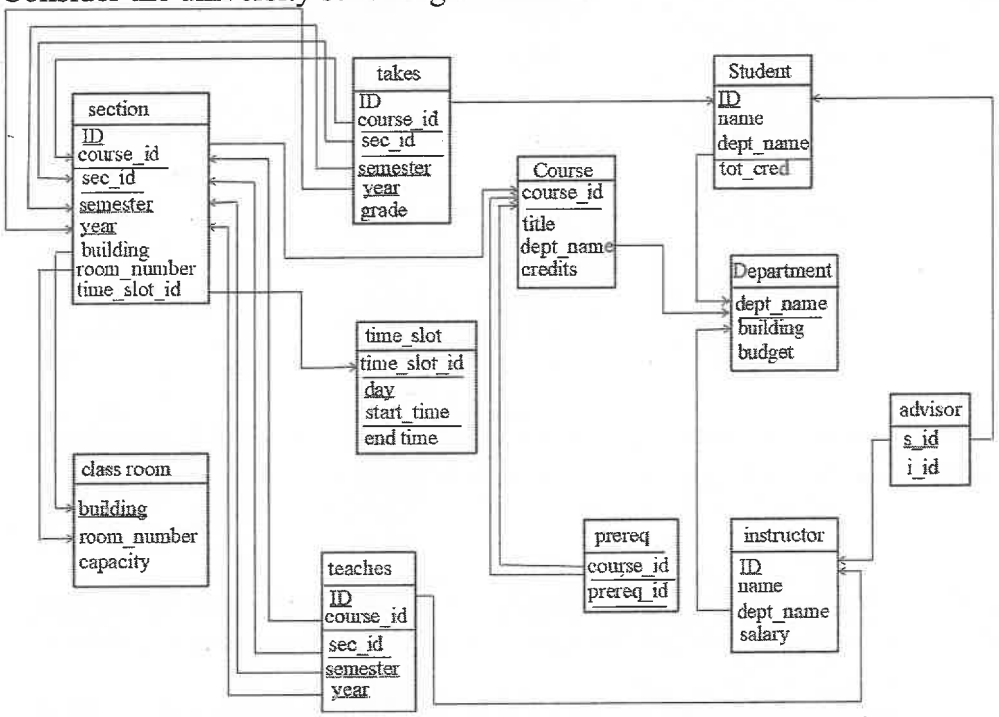
Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.	Illustrate and explain the systematic representation of database management systems in detail.	12	3	1	1
	(OR)				
b.	Demonstrate how various end users of a database are interconnected to the query processor, in order to manipulate the data from disk storage.	12	3	1	1
29. a.	Construct an ER-diagram for the banking enterprise with almost all components and explain.	12	6	2	2
	(OR)				
b.	Convert the given ER conceptual schema diagram for the academy database into a relational databases schema using ER-to-relational mapping algorithm with explanation of each step in the algorithm.	12	6	3	1



30. a.	Illustrate the functions in PL/SQL with necessary syntax and examples.	12	5	4	3
	(OR)				

b. Consider the university schema given below. 12 5 4 3



Formulate SQL queries to create relations, inserts, deletes or updates to

(i) Increase the salary of each instructor of the department of civil by 10%

(ii) Delete all courses that have never been offered (ie) do not occur in the section relation

(iii) Insert every student whose tot-cred attribute is greater than 100 as an instructor in the same department, with a salary of ₹ 50,000.

31. a. Explain the various normal forms (1st, 2nd, 3rd, BCNF, 4th, 5th and domain key) with suitable examples. 10 3 5 3

(OR)

b. Consider the following schema: 12 3 5 3

Suppliers (sid : integer, sname : string, address : string)
Parts (pid : integer, pname : string, color : string)
Catalg (sid : integer, pid : integer, cost : real)

The key fields are underlined and domain of each field is listed after the field name.

(i) Find the name of suppliers who supply some red parts

(ii) Find the sids of suppliers who supply some red or green parts

(iii) Find the sids of suppliers who supply every part

(iv) Find the sids of suppliers who supply every red part

32. a. Discuss the design features of dynamoDB and their significance on dynamoDB to stay as a giant. 12 2 6 3

(OR)

b. Discuss query and scan operations in amazon dynamoDB. Give example for each. 12 2 6 3

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