

MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA- 8
(Affiliated to Krishna University, Machilipatnam)

SYLLABUS

Subject: Computer Science

Semester: IV

Course Title: Database Management

Course Code: 20CSCCDM43

No. of Hours: 45

LTP: 300

Credits: 3

Objectives

- To understand the role of a database management system in an organization.
- To Identify entities, relationships and design databases.
- To be able to perform SQL and PL/SQL commands on the database.

Course Outcomes

CO1: Explain the basic concepts of database management system.

CO2: Analyze file- based system and database approach.

CO3: Explain entity-relationship model and relational database design.

CO4: Formulate and apply SQL queries to relational databases.

CO5: Discuss PL/SQL concepts.

UNIT - I

(9 Hrs.)

Overview of Database Management System

Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management System, classification of Database Management System.

UNIT - II

(9 Hrs.)

File- Based System

File Based System. Drawbacks of File-Based System, DBMS Approach, Advantage of DBMS, Data Models, Components of Database System, Database Architecture, DBMS Vendors and their products.

UNIT - III

(9 Hrs.)

Entity- Relationship Model

Introduction, The Building Blocks of an Entity-Relationship, Classification of Entity Set, Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, Aggregation and Composition, CODD's Rules, Relational Data Model, Concept of Relational Integrity. Functional dependencies Introduction to Normalization.

UNIT - IV

(9 Hrs.)

Structured Query Language

Introduction, History of SQL Standards, Commands in SQL, Data types in SQL, Data Definition Language (DDL), Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.

UNIT - V

(9 Hrs.)

PL/SQL

Introduction, Structure of PL/SQL, PL/SQL Language Elements, Data Types, Control Structure, Steps to Create a PL/SQL Program, Iterative Control Cursors, Steps to Create a Cursor, Procedure, Functions, Packages, Exceptions Handling, Database Triggers, Types of triggers.

Co-Curricular Activities

- Assignments on problem solving
- Student presentations and seminars
- Online quizzes

Prescribed Books

1. Bipin C. Desai, 'An Introduction to Database System', Galgotia Publications
2. Korth, Database Management System.
3. Navathe, Database Management System.
4. S. Sumathi, S. Esakkirajan, Fundamentals of Relational Database Management System

Reference Books

1. Paneer selvam: Database Management system, PHI.
2. David Kuklinski, Osborne, Data management system McGraw Hill Publication.
3. Shgirley Neal And Kenneth LC Trunik Database management system in Business PHI.
4. Godeon C. EVEREST, Database Management- McGraw Hill Book company.
5. MARTIN, Database Management-Prentice Hall of India, New Delhi.

Online resources

1. [http:// www.onlinegdb.com/](http://www.onlinegdb.com/)
2. [http:// www.tutorialspoint.com/](http://www.tutorialspoint.com/)
3. [https:// www.codecademy.com/ learn/ learn - sql/](https://www.codecademy.com/learn/learn-sql/)
4. [https:// www.w3schools.com/sql/default.asp](https://www.w3schools.com/sql/default.asp)

MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA – 8
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Blueprint

Subject: Computer Science

Semester: IV

Course Title: Database Management

Course Code: 20CSCCDM43

Time: 3 Hrs.

Max. Marks: 100

SECTION – A

Answer **ALL** questions

20 x 1 = 20M

Q. No.	UNIT	Marks Weightage	RBT LEVEL
1	I	1	No. of questions to be set RBT1 – 8 RBT2 – 8 RBT3 – 2 RBT4 – 2
2	I	1	
3	II	1	
4	II	1	
5	III	1	
6	III	1	
7	IV	1	
8	IV	1	
9	V	1	
10	V	1	
11	I	1	
12	I	1	
13	II	1	
14	II	1	
15	III	1	
16	III	1	
17	IV	1	
18	IV	1	
19	V	1	
20	V	1	

SECTION – BAnswer any **FOUR** questions**4 x 8 = 32M**

Q. No.	UNIT	Marks Weightage	RBT LEVEL
21	I	8	No. of questions to be set RBT1 – 2 RBT2 – 2 RBT3 – 1 RBT4 – 1
22	II	8	
23	III	8	
24	IV	8	
25	V	8	
26	I / II / III / IV / V	8	

SECTION – CAnswer any **FOUR** questions**4 x 12 = 48M**

Q. No.	UNIT	Marks Weightage	RBT LEVEL
27	I	12	No. Of questions to be set RBT1 – 2 RBT2 – 2 RBT3 – 1 RBT4 – 1
28	II	12	
29	III	12	
30	IV	12	
31	V	12	
32	I / II / III / IV / V	12	

MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA – 8
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Model Question Paper

Subject: Computer Science
Course Title: Database Management
Time: 3 Hrs.

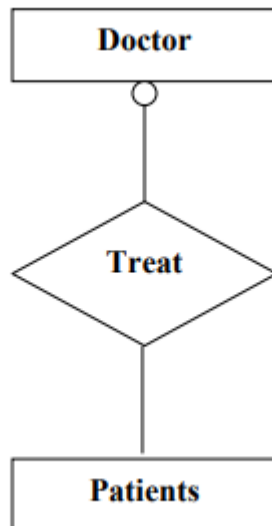
Semester: IV
Course Code: 20CSCCDM43
Max. Marks: 100

SECTION – A

Answer **ALL** the questions

20 X 1 = 20M

1. Disadvantages of file processing system
 - A. Program data dependence
 - B. Duplication of data
 - C. Limited data sharing
 - D. All of the above
2. The following E-R diagram is interpreted as follows:



- A. A doctor treats up to N patients
 - B. A doctor treats exactly N patients
 - C. A doctor may treat up to N patients; Some doctors may not treat any patients
 - D. A doctor will treat patients based on some conditions Doctor
Treat Patients
3. An attribute or a combination of attributes that uniquely identifies each row in a relation is known as
 - A. Primary Key
 - B. Candidate Key
 - C. Foreign Key
 - D. Not Null key

4. Each member of the workgroup has a desktop computer and the computers are linked by means of a network then which of the following network is used for the communication.
 - A.LAN
 - B.WAN
 - C.MAN
 - D.None
5. The two entities are connected with
 - A.Cardinality
 - B.Another entity
 - C.Function
 - D.Relation
6. Which join returns all records from the right table, and the matched records from the left table?
 - A.JOIN
 - B.INNER JOIN
 - C.OUTER JOIN
 - D.FULL JOIN
7. If your Institute is planning to design their database which suits their requirements like; maintaining a student database, employee database, purchase details, admission details, etc, what suggestion would you give to come up with a better database?
 - A.To divide the database among the departments and ask the them to create individual databases.
 - B.To create a database for each and every entity like student, employee etc. By the administration staff
 - C.To approach a third party.
 - D.To create a single database.
8. The IF statement ends with which keyword?
 - A.end if
 - B.end
 - C.if end
 - D.else end
9. One-tier architecture involves putting all of the required components for a software application on which server?
 - A.Multiple server
 - B.Single server
 - C.Database server
 - D.None of the above
10. Which function is used to return a total sum of numeric columns which you choose?
 - A.Avg
 - B.Sum

C.Sum all

D.Add

11. _____ means that the data is accurate and consistent in the database.
12. The group of one or more columns used to uniquely identify each row of a relation is called _____.
13. _____ is a computer language for storing, manipulating and retrieving data stored in a relational database.
14. one record in a table is associated with one and only one record in another table _____ relationships.
15. Multiple record in a table is associated with multiple record in another table _____ relationships.
16. _____ command Insert data into a table.
17. To provide access or privileges on the database objects _____ command is used.
18. _____ automatically executed or fired when some events occur.
19. _____ statement is used to declare a cursor.
20. PL/SQL block includes _____, _____, _____ Sections.

SECTION – B

Answer any **FOUR** questions

4 x 8 = 32M

21. Explain the advantages of the database approach.
22. Briefly describe various architectures of database systems.
23. Draw an ER diagram with the following entities.
 - a. Student
 - b. Teacher
 - c. Subject
 - d. Section
24. Write the steps to create PL/SQL program.
25. Discuss the aggregate functions in SQL
26. Explain the datatypes in PL/SQL.

SECTION – C

Answer any **FOUR** questions

4 x 12 = 48M

27. Explain various data models.
28. Discuss components of DBMS.
29. Demonstrate ER-Model.
30. Apply the given queries on the table.

Client no	name	city	pincodes	state	bal.due
0001	Ivan	Bombay	400054	Maharashtra	15000
0002	Vandana	Madras	780001	Tamilnadu	0
0003	Pramada	Bombay	400057	Maharashtra	5000
0004	Basu	Bombay	400056	Maharashtra	0
0005	Ravi	Delhi	100001	Delhi	2000
0006	Rukmini	Bombay	400050	Maharashtra	0

- a. Find out the names of all the clients
 - b. Retrieve the list of names and cities of all the clients.
 - c. List all the clients who are located in Bombay.
 - d. Display the information for client no 0001 and 0002.
 - e. Change the city of client_no '0005' to Bombay.
 - f. Find out the name of all clients having 'a' as the second letter in their names
31. Demonstrate Normalization with suitable examples
 32. Explain in detail about packages in PL/SQL