**BON SECOURS COLLEGE FOR WOMEN**

***Accredited with ‘A’ Grade by NAAC***

**UGC Recognized 2(f) & 12 (B) Institution**

**Affiliated to Bharathidasan University, Trichy**

**VILAR BYPASS, THANJAVUR -6.**

**PG DEPARTMENT OF COMPUTER SCIENCE**

**Semester: IV Class: II B.Sc., CS Sub Code: 16SCCCS4**

**Unit I**

**Part-A (2 Marks)**

1. What is Database?
2. What is DBMS?
3. Define the integrity rules.
4. What is data independence?
5. What do you mean by data processing?
6. What do you mean by instance and schema?
7. What is an Entity set?
8. What is an Entity type?
9. What is an attribute?
10. Mention some Disadvantage in File Processing System.
11. write the three levels of data abstraction.
12. List any eight applications of DBMS.
13. Define the terms.(a) Physical schema (b) logical schema
14. What is conceptual schema?
15. What is a data dictionary?
16. What is Data Model?
17. What is E-R model?
18. What is an Entity?
19. What is an attribute?
20. Define E-R diagram.
21. What is DDL (Data Definition Language)?
22. What is DML (Data Manipulation Language)?
23. Define query language.

**Part – B ( 5 Marks)**

1. What are the major advantage & disadvantages in DBS?
2. Describe the purpose of DBS.
3. How redundancy is controlled in DBMS? Explain.
4. What are the responsibilities of DBA?
5. Discuss the various views of data with the necessary diagram.
6. Differentiate between instances and schemas with examples.
7. Discuss about various data models.
8. Write short note on database language.
9. Briefly explain about normalization.
10. Briefly discuss the history of DBS.
11. Write the disadvantage in file processing system?
12. Describe the three levels of data abstraction?
13. What is the difference between procedural DML and Non procedural DML
14. What do you mean by instance & schema? Explain the difference between these.
15. What is a view? How it is related to data independence?

**Part – C (10 Marks)**

1. Explain DBMS System Architecture.
2. Explain E-R Model in detail with suitable example.
3. Explain about various data models.
4. Explain in details about the various database languages.
5. Discuss about various operations in Relational Databases.
6. Discuss about database users and administrators.
7. Explain in detail about the different levels of abstraction.
8. Differentiate between DDL and DML
9. Discuss about data storage & querying manager.
10. Explain about database architecture.
11. Explain about Database design in DBS.

**Unit - II**

**Part –A (2 Marks)**

1. What is relational model?
2. What is the use of rename operation?
3. List the set operations of SQL.
4. What are aggregate functions?
5. What is data model?
6. What is NullValue?
7. Define tuples.
8. What is called schemas?
9. What is nested query? Give an example.
10. List the keys in dbms.
11. What is candidate key?
12. Define query language.
13. What is called relational operator?
14. List the operators in dbms.
15. What is called binary operators?

**Part – B ( 5 Marks)**

1. What is an entity? What is a relationship? Explain ER modeling with the help of database for a Student management system.
2. Differentiate between primary key and candidate key with examples.
3. Briefly explain about Null values with examples.
4. Explain the composition of relational operations.
5. Write short note on relational algebra.
6. What is called fundamental operator and binary operator with examples.
7. Briefly explain about Cartesian product.
8. Write all relational algebra expressions.

**Part – C (10 Marks)**

1. Explain detail in domain relational calculus.
2. Explain detail in Tuple relational calculus.
3. Explain detail in distributed databases and client/server databases.
4. Explain detail about Functional Dependencies.
5. Discuss about various operations in Relational algebra (Fundamental operations).
6. Explain about relational query language with suitable expressions.
7. Explain relational operator with suitable examples.
8. Differentiates between set operator an union operator
9. Explain in detail about formal definition of the relational algebra.
10. Explain about Database design in DBS.
11. Explain about Relational Database in detail with example.
12. Consider the following table:

Employee(Emp\_name,Dept\_name,Salary)

Write SQL statements for the following:

* Find the employee name who is getting lowest salary.
* Find the department name which has highest average salary.
* Find all the department where more than 60 employees are working.
* Find all employees whose salary is higher than the average salary of their department.

**Unit III**

 **Part –A (2 Marks)**

1. Define null value.
2. Define integrity constraints.
3. What is called set comparison?
4. What are functional dependencies?
5. List the aggregate functions.
6. Define set operations.
7. What is rollback & commit?
8. Define views in dbms.
9. What is index creation?
10. Define Grant & Revoke.

**Part – B ( 5 Marks )**

1. List the basic types of SQL.
2. Write short note on basic schema in SQL.
3. Explain the various aggregate functions in SQL.
4. Explain about Embedded SQL.
5. Briefly explain about set operations with expressions..
6. Write the SQL queries in date & time.

**Part – C (10 Marks )**

1. Discuss about SQL data types & schemas.
2. Explain Join expressions with suitable examples.
3. How the database modifications are done inSQL?Explain.
4. Differentiates between set operator an union operator
5. Write the expression of creating a table and insert the values in student’s detail.

**Unit IV**

 **Part –A (2 Marks )**

1. What is ER model?
2. Define design process.
3. What is called constraints?
4. What is mapping constraints?
5. Define weak entity set.
6. What are the different types of attributes?
7. Define Foreign key.

**Part – B ( 5 Marks )**

1. Write short note on design process.
2. What is called constraints and its types with examples?
3. Differentiate between a strong and weak entity set.
4. What are constraints on generalization and specialization?

**Part – C (10 Marks )**

1. Explain about ER Model.
2. Explain the integrity constraints supported by SQL
3. Draw the basic structure of ER diagram.
4. Explain the various types of relationship with examples.
5. Explain about weak entity set with suitable examples.

**Unit V**

 **Part –A (2 Marks )**

1. Define an atomic domains.
2. Define normalization.
3. What is called BCNF?
4. List the functional dependency.
5. What is 3NF?
6. Define 1 NF.

**Part – B ( 5 Marks )**

1. Differentiate between BCNF & 2NF.
2. Write short note on normalization.
3. What is called functional dependency with examples.
4. Explain about lossless and lossy decomposition in detail with example.

**Part – C (10 Marks)**

1. Explain detail about first, second and third normalization form.
2. Explain detail about Boyce code normal form and fifth normalization form.
3. Explain detail in decomposition using Functional Dependencies.
4. Explain detail in decomposition using Multi-Valued Dependencies.
5. Explain about 2NF, 3NF,4NF.
6. Differentiates between BCNF & 3NF.
7. Explain in detail about functional dependency.
8. Describe about the Multi-valued dependencies and Fourth normal form with suitable examples.

\*\*\*\*\*