Sr.	Unit No.	Question	BL	CO
1	**1**	Define Functional Dependency and explain types of functional dependency.	**U**	**CO1**
2	**1**	List out Armstrong's axioms.	**R**	**CO1**
3	**1**	List and explain Armstrong's axioms. **OR** Discuss Armstrong's inference rules.	**U**	**CO1**
4	**1**	What is closure of a set of FDs? Describe how to find closure of a set of FDs.	**U**	**CO1**
5	**1**	Relation R is given with attributes A, B, C, G, H and I. Also, a set of functional dependencies F is given with following FDs. F = {A → B, A → C, CG → H, CG → I, B → H} Find Closure of F.	**U**	**CO1**
6	**1**	Compute the closure of the following set F of functional dependencies for relational schema R = (A, B, C, D, E, F): F = (A → B, A → C, CD → E, CD → F, B → E).	**U**	**CO1**
7	**1**	What is closure of a set of attributes? Explain how (Write an algorithm) to find closure of a set of attributes.	**U**	**CO1**
8	**1**	Given relation R with attributes A, B, C, D, E, F and set of FDs as A → BC, E → CF, B → E and CD → EF. Find out closure $\{A, B\}^+$ of the set of attributes.	**U**	**CO1**
9	**1**	Consider schema EMPLOYEE (E_ID, E_NAME, E_CITY, E_STATE) and FD = {E_ID → E_NAME, E_ID → E_CITY, E_ID → E_STATE, E_CITY → E_STATE} Find attribute closure for: $(E\_ID)^+$, $(E\_CITY)^+$	**U**	**CO1**
10	**1**	What is Canonical cover? Describe how to write an algorithm to find Canonical cover.	**U**	**CO1**
11	**1**	Define the following terms. (i) Closure of set of FDs (ii) Closure of set of attributes (iii) Canonical Cover	**R**	**CO1**
12	**1**	Define decomposition and describe types of decomposition with example.	**U**	**CO1**
13	**1**	Discuss anomaly in database design.	**U**	**CO1**
14	**1**	What is Normalization? Discuss the need of Normalization.	**U**	**CO2**
15	**1**	Explain 1NF with suitable example.	**U**	**CO2**
16	**1**	Describe 2NF with suitable example.	**U**	**CO2**
17	**1**	Discuss 3NF with suitable example.	**U**	**CO2**
18	**1**	Explain BCNF with suitable example.	**U**	**CO2**
19	**1**	Write a short note on 4NF.	**R**	**CO2**
20	**1**	Write a short note on 5NF.	**R**	**CO2**
21	**1**	Consider table R(A, B,C, D, E) with FDs as A → B, BC → E and ED → A. Find out the key for Relation R.	**U**	**CO1**
22	**1**	Consider a relation scheme R = (A, B, C, D, E, H) on which the following functional dependencies hold: {A–>B, BC–> D, E–>C, D–>A}. What are the candidate keys of R?	**U**	**CO1**
23	**1**	Consider the relation scheme R = {E,F,G,H,I,J,K,L,M,N} and the set of functional dependencies: {EF -> G, F -> IJ, EH -> K, L, K -> M, L -> N}. What are the candidate keys of R?	**U**	**CO1**
24	**2**	Describe query processing steps **OR** Discuss various steps for query processing with proper diagram.	**U**	**CO4**
25	**2**	Draw the neat and clean diagram of query processing steps.	**R**	**CO4**

26	**2**	Write a short note on measures of query cost.	**R**	**CO4**
27	**2**	Discuss different search algorithm for selection operation. **OR** Describe linear search and binary search algorithm for selection operation.	**U**	**CO4**
28	**2**	Discuss Query Evaluation process. **OR** Explain evaluation expression process in query optimization.	**U**	**CO4**
29	**2**	Explain methods for the evaluation of expression. **OR** Describe materialization and pipelining.	**U**	**CO4**
30	**2**	Explain method of query optimization with example. **OR** Describe query optimization process.	**U**	**CO4**
31	**2**	Explain transformation of relational expression to equivalent relational expression.	**U**	**CO4**
32	**2**	Discuss the purpose of sorting with reference to query optimization.	**U**	**CO4**
33	**3**	State the difference between Security and Integrity.	**R**	**CO3**
34	**3**	State the difference between Authentication and Authorization.	**R**	**CO3**
35	**3**	Describe various access control methods for data security in detail.	**U**	**CO3**
36	**3**	Describe Discretionary Access Control method for data security.	**U**	**CO3**
37	**3**	Explain Mandatory Access Control method for data security.	**U**	**CO3**
38	**3**	Discuss Role Based Access Control method for data security.	**U**	**CO3**
39	**3**	What is transaction? Discuss ACID properties of transaction.	**U**	**CO3**
40	**3**	Draw and explain transaction state diagram in detail.	**U**	**CO3**
41	**3**	Describe schedule with its types.	**U**	**CO3**
42	**3**	Compare Serial Schedule and Non-Serial Schedule.	**U**	**CO3**
43	**3**	Describe two phase commit protocol in detail. **OR** Explain working of two-phase commit protocol.	**U**	**CO3**
44	**3**	What is database recovery? Explain in brief.	**U**	**CO3**
45	**3**	Write a short note on Log based recovery method.	**R**	
46	**3**	Compare Intermediate Vs Deferred database modification.	**U**	**CO3**
47	**3**	What is concurrency? Discuss about three problems occurs due to concurrency. **OR** Describe below problems that occurs due to concurrency in brief: (i) Lost Update Problem (ii) Dirty Read Problem (iii) Incorrect Retrieval Problem	**U**	**CO3**
48	**3**	What is lock? Describe modes of lock in database.	**U**	**CO3**
49	**3**	Explain deadlock with suitable example.	**U**	**CO3**
50	**4**	What is View? Describe types of view.	**U**	**CO5**
51	**4**	Write a syntax of simple view and complex view.	**R**	**CO5**
52	**4**	How to create simple view? Describe with suitable example.	**U**	**CO5**
53	**4**	How to create complex view? Explain with suitable example.	**U**	**CO5**

54	**4**	Discuss Updating and Deleting a view with example.	**U**	**CO5**
55	**4**	Describe Renaming and Dropping a view with example.	**U**	**CO5**
56	**4**	Compare Table Vs View	**U**	**CO5**
57	**4**	List out advantages and disadvantages of View	**R**	**CO5**
58	**4**	Consider following table and solve given queries: EMP (Eid, Ename, Ecity, desg, salary, deptno) 1. Create view Emp_Info from EMP table with all the columns. 2. Create view Emp_Salary from EMP table that displays designation and salary of the employee. 3. Destroy Emp_Info view from the database.	**A**	**CO5**
59	**4**	Consider following table and solve given queries: Student (Sid, SName, City, DoB, Contact_No, Email_ID) 1. Create view Student_View that displays the name of students starts with 'A' and end with 'k'. 2. Create view Stu_DoB that displays the student list who born after 15th June, 1992. 3. Create view Stu_Name that displays the student list consist only 5 characters name.	**A**	**CO5**
60	**4**	Consider following tables and solve given queries: Student (RNo, Name, Branch) Result (RNo, SPI, Bklog) 1. Create view S_R that displays roll number, name, branch and SPI of all the students. 2. Create view Stu_Result that displays the Name, Branch and SPI of the students who having SPI greater than 8.5 3. Create view Stu_Bklog that displays the name and SPI of students having 0 backlog.	**A**	**CO5**
61	**5**	Write a short on Stored Procedure in PL/SQL.	**R**	**CO5**
62	**5**	Write a syntax to create a stored procedure.	**R**	**CO5**
63	**5**	What is user defined function? Discuss types of UDF in brief.	**U**	**CO5**
64	**5**	Explain table valued function with suitable example.	**U**	**CO5**
65	**5**	Describe scalar valued function with suitable example.	**U**	**CO5**
66	**5**	Write a syntax to create a user defined function.	**R**	**CO5**
67	**5**	List out advantages of user defined functions and stored procedures.	**R**	**CO5**
68	**5**	Discuss how to update, drop and rename stored procedures.	**U**	**CO5**
69	**5**	Discuss how to update, drop and rename user defined functions.	**U**	**CO5**
70	**5**	Create a table valued function which retrieve the data of Employee table.	**A**	**CO5**
71	**5**	Write a PL/SQL program to check whether a given number is prime or not.	**A**	**CO5**
72	**5**	Consider following tables and create given procedures: **Student** (RNo, Name, Branch) **Result** (RNo, SPI, Bklog) 1. Create a stored procedure to display RNo, Name, Branch and SPI. 2. Create a stored procedure to display the name of the students whose SPI is greater than 8.2 and roll number is less than 105.	**A**	**CO5**
73	**5**	Consider following table to create given procedures: **Student** (RNo int, Name varchar (50), Branch varchar (50)) 1. Create a stored procedure to delete a record in student table whose roll number is 204.	**A**	**CO5**

		2. Create a stored procedure to get a roll number from user and update Branch of student table.		
74	**5**	Create a scalar valued function which accepts three integer parameters and returns maximum integer value from it.	**A**	**CO5**
75	**5**	Write a PL/SQL program to check where a given number is positive, negative or zero.	**A**	**CO5**