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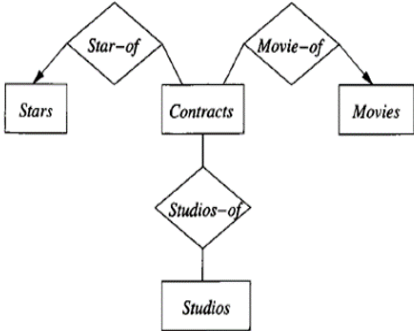| Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
1	1	Which is the false statement ?	D	1	A Database is ordered collection of data.	A Database is systematic compilation of records in a computer	DBMS manages the database	Data helps in making decisions.
2	1	In traditional file system ,Two files may be combined into a third file if	B	1	They have a row in common	They have a field in common	They have no records with the same value in the common field	Both (b) and (c)
3	1	Data is said to be _____ if same data is copied at many places.	A	1	Redundant	Concurrent	Inconsistent	Controlled
4	1	What do you mean by Concurrent access?	C	1	Copies of same data does not match with each other	Same data is copied at many places	The access of same data by multiple users at same time	Both A & B
5	1	Data Model is collection of conceptual tools for describing -	D	1	Data	Data schema	Consistency	All of these
6	1	Data _____ refers to describing the data description, representing data semantics, and describing the consistency constraints that apply to the data.	C	1	Adding	Modifying	Modeling	Refining
7	1	Which of the following is not a Data Model?	A	1	Aggregate Model	Relational Model	ER Model	Hierarchical Model
8	1	Which of the following is not an example of DBMS?	D	1	MySQL	Microsoft Acess	IBM DB2	Google
9	1	Data such as table name, column name, data type, authorized user and user access privileges for any table is called ……………………. for that table.	D	1	Data Isolation	Data Independence	Data Integrity	Meta data
10	1	Which of the following is a feature of DBMS?	D	1	Minimum Duplication and Redundancy of Data	High Level of Security	Mulitple-user Access	All of these
11	1	Which of the following is not a function of the database?	D	1	Managing stored data	Manipulating data	Security for stored data	Analysing code
12	1	What is information about data called?	C	1	Hyper data	Tera data	Meta data	Relations
13	1	What is a database?	C	1	Organized collection of information that cannot be accessed, updated, and managed	Collection of data or information without organizing	Organized collection of data or information that can be accessed, updated, and managed	Organized collection of data that cannot be updated
14	1	The same information may be duplicated in several places (files). For example, if a student has a double major (say, music and mathematics) the address and telephone number of that student may appear in a file that consists of student records of students in the Music department and in a file that consists of student records of students in the Mathematics department. This redundancy leads to higher storage and access cost. In addition, it may lead to data inconsistency.	A	1	TRUE	FALSE		
15	1	Implementation of the simple structures at the logical level may involve complex physical-level structures, the user of the logical level does not need to be aware of this complexity. This is referred to as _____.	A	1	physical data independence.	Logical Data Independence	Local Data Independence	None of these
16	1	Which is the type of Data Independence?	C	1	Physical Data Independence	Logical Data Independence	Both A & B	None of these
17	1	……………is the ability to modify the conceptual schema without requiring any change in application programs.	B	1	physical data independence.	Logical Data Independence	Local Data Independence	None of these
18	1	_____, which is responsible for fetching data from disk storage into main memory, and deciding what data to cache in main memory.	A	1	Buffer manager	Authorization and integrity manager	Transaction manager	None of these
19	1	Authorization and integrity manager tests the satisfaction of integrity constraints and checks the authority of users to access data.	A	1	TRUE	FALSE		
20	1	_____ means to hide certain details of how data is stored and maintain.	C	1	Data Isolation	Data Integrity	Data Abstraction	None of these
21	1	_____ of abstraction explains how data is actually stored and describes the Data Structure and Access methods used by database.	B	1	Conceptual Level	Physical Level	View Level	None of these
22	1	Which component manages the allocation of space on disk storage and the data structures used to represent information stored on disk?	B	1	Buffer manager	File manager	Transaction manager	Authorization manager
23	1	_____ is the skeleton structure that represents the logical view of the entire database.	D	1	Data Independence	Storage structure	DB Schema	Mapping

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
24	1	Translates DML statements into low level instructions that the query evaluation engine understands.	C	1	Query Evaluation Engine	Integrity Manager	DML Compiler	DDL Interpreter
25	1	Which of the following is a component of the DBMS?	D	1	Buffer manager	File manager	Transaction manager	All of these
26	1	Procedural DMLs require a user to specify what data are needed and how to get those data.	A	1	TRUE	FALSE		
27	1	Declarative DMLs (also referred to as nonprocedural DMLs) require a user to specify what data are needed without specifying how to get those data.	A	1	TRUE	FALSE		
28	1	Data Manipulation Languages are used for -	D	1	Insert Information into Database	update Information	Delete Information	All of these
29	1	The Statement that requests a retrieval of information from database is called as _____.	B	1	Control Statement	Query	Manipulation Statement	None of these
30	1	Database Administrator is responsible for which of the following function?	D	1	Defining Security Constraints	Defining Integrity Constraints	Granting the Data Access	All of these
31	1	The Users who use " easy to use menu" are called _____	B	1	Sophisticated end user	Naïve user	Stand alone users	Casual end users
32	1	Schema Definition is written by _____.	A	1	Database Administrator	Application Programmer	Naïve user	Casual end users
33	1	User who interacts with the system using database query language is called as _____.	A	1	Sophisticated end user	Naïve user	Stand alone users	Casual end users
34	1	Farmer goes to ATM Center to withdraw an amount of Rs.300/-. Which type of user farmer is ?	B	1	Sophisticated end user	Unophisticated end user	Application Programmer	Specialized User
35	1	Which of the following is/are functions of the database administrator?	D	1	Schema definition	Access method definition	Backup and Recovery	All of these
36	2	The number of tuples in a relation is known as	D	1	degree	relation	attribute	cardinality
37	2	Which of the following aspects of data is the concern of a relational database model?	D	1	data manipulation	data integrity	data structure	all of these
38	2	A relational database consists of a collection of	A	1	Tables	Fields	Records	Keys
39	2	Which of the following is used to denote the selection operation in relational algebra?	B	1	Pi (Greek)	Sigma (Greek)	Lambda (Greek)	Omega (Greek)
40	2	For select operation the _____ appear in the subscript and the _____ argument appears in the paranthesis after the sigma.	A	1	Predicates, relation	Relation, Predicates	Operation, Predicates	Relation, Operation
41	2	The _____ operation, denoted by −, allows us to find tuples that are in one relation but are not in another.	B	1	Union	Set-difference	Difference	Intersection
42	2	A Set of Possible data value is called _____.	D	1	Attribute	Degree	Tuple	Domain
43	2	A list of records that satisfies a particular condition is displayed using ___ operation.	B	1	Select	Project	Union	Cross Product
44	2	The minimal set of attributes that can uniquely identify a tuple is known as a _____.	A	1	Candidate key	Canon key	Super key	Superb key
45	2	The Statement that requests a retrieval of information from database is called as _____	B	1	Control Statement	Query	Manipulation Statement	Both A & B
46	2	What will be the output of following query? ∏ author (Books) ∪ ∏ author (Articles)	A	1	Names of the authors who have either written a book or an article or both	Names of the authors who have written a book only	Names of the authors who have written an article only	Name of Book and Article
47	2	If STUD_NO and STUD_PHONE both are candidate keys for relation STUDENT and STU_NO is Primary key then STUD_PHONE will be _____.	D	1	Super key	Foreign Key	Primary key	Alternate key
48	2	Key to represent relationship between tables is called?	C	1	Primary key	Secondary Key	Foreign Key	Alternate Key
49	2	Set of tuples is called as_____.	A	1	Relation	Domain	Attribute	Relational Database
50	2	Which of the following is/are procedural query language:	A	1	Relational Algebra	Tuple Relational Calculus	Domain Relational Calculus	Both A,B

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
51	2	Consider the keys given below as Super key of a relation 1)Name , Salary, Eid, 2)Name , Age , Eid 3)Name , Address , Eid, Salary 4)Eid, Age , Balance 5)Eid , Name What is candidate key of this relation?	C	1	Name , Salary, Eid	Name , Age , Eid	Eid , Name	Eid, Age , Balance
52	2	The candidate key other than the primary key is called an ……………...	A	1	Alternate key	Temporary key	Flash key	Relational key
53	2	Which of the following is used to denote the projection operation in relational algebra?	A	1	Pi (Greek)	Sigma (Greek)	Lambda (Greek)	Omega (Greek)
54	2	_____ is a candidate key choosen by database designer to identify tupples uniquely in a relation.	D	1	Super key	Composite key	Alternate key	Primary Key
55	2	Which of the following are the fundamental operations in the relational algebra?	D	1	Select,Project	Union,Intersect	Set Difference	all of these
56	2	If we want to include attributes from two different relations, which of the following operation is needed?	B	1	Set Difference	Union	Cartesian Product	Projection
57	2	Which of the following is NOT a type of relational operation?	D	1	Select Operator	Projection Operator	Set Difference	Set Updates
58	2	Using the select operation, you can select ___ that satisfy certain criteria.	A	1	Tupples	Entity	Attributes	Operators
59	2	If there are 2 types of tuples, A & B, the ___ operation contains all the tuples that are in B but not in A.	B	1	Union	Set Difference	Cartesian Product	Projection
60	2	The operation of a relation X, produces Y, such that Y contains only selected attributes of X. Such an operation is :	A	1	Projection	Intersection	Union	Set Difference
61	2	Which one of the following attribute can be taken as a primary key?	C	1	Name	Street	ID	Department
62	2	Consider the relational database given below. Give an expression in the relational algebra to express each of the following statements: Customer(Cust_name, Cust_street, Cust_city) Branch(Branch_name, Branch_city, Assets) Account (Branch_name, Account_number, Balance) Loan(Branch_name, Loan_number, Amount) Depositor(Cust_name, Account_number) Borrower(Cust_name, Loan_number) Player relation (Player Id, Team Id, Country, Age, Runs, Wickets) 1.Find the names of all the customers who have taken a loan from the bank and also have an account at the bank. 2. Find all tuples from player relation for which country is India. 3.Select all the tuples for which runs are greater than or equal to 15000. 4.Select all the players whose runs are greater than or equal to 6000 and age is less than 25. 5.List all the countries in Player relation.		5				
63	2	Consider the relational database given below. Give an expression in the relational algebra to express each of the following queries: Employee (person-name, street, city) , Works (person-name, company-name, salary) Company (company-name, city) , Manages (person-name, manager-name) 1) Find the names of all employees in this database who live in the same city as the company for which they work. 2) Find the names, street address, and cities of residence of all employees who work for HCL and earn more than $10,000 per annum.		2				
64	2	Consider the following relational database, where the primary keys are underlined. Give an expression in the relational algebra to express each of the following queries: employee (ssn, name, dno, salary, hobby, gender) department (dno, dname, budget, location, mgrssn) works_on (ssn, pno) project (pno, pname, budget, location, goal) 1. List all pairs of employee names and the project numbers they		4				

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
65	2	Solve the queries for the following database using Relational Algebra. branch (branch-name, branch-city, assets) customer (customer-name, customer-street, customer-only) account (account-number, branch-name, balance) loan (loan-number, branch-name, amount) depositor (customer-name, account-number) borrower (customer-name, loan-number) 1)Find all loans of over $1200 2)Find the loan number for each loan of an amount greater than $1200 3)Find the names of all customers who have a loan, an account, or both, from the bank 4)Find the names of all customers who have a loan and an account at bank. 5)Find the names of all customers who have a loan at the Perryridge branch. 6)Find the names of all customers who have a loan at the		7				
66	2	The relational database schema is given below. employee (person-name, street, city) works (person-name, company-name, salary) company (company-name, city) manages (person-name, manager-name) Write the relational algebra expressions for the given queries. 1.Find the names of all employees who work for First Bank Corporation. 2.Find the names and cities of residence of all employees who work for First Bank Corporation. 3.. Find the names, street address, and cities of residence of all employees who work for First Bank Corporation and earn more than $10,000 per annum. 4. Find the names of all employees in this database who do not work for First Bank Corporation.		4				
67	2	Write Relational algebra statement for following. Student(Enrno, name, courseId, emailId, cellno) Course(courseId, course_nm, duration) 1) Find out list of students who have enrolled in "computer" course. 2) List name of all courses with their duration. 3) List emailId and cellno of all mechanical engineering students.		3				
68	2	Let R1 (A, B, C) and R2 (D, E) be two relation schema, where the primary keys are shown underlined, and let C be a foreign key in R1 referring to R2. Suppose there is no violation of the above referential integrity constraint in the corresponding relation instances r1 and r2. write relational algebra expressions that would necessarily produce an empty relation.		1				
69	2	Solve the queries for the following database schema using Relational Algebra. Customer (C_ID, Name, Address, City, Contact, Gender, Age, Acc_no) Branch (Branch_name, Branch_city) Loan (C_ID, Loan_No, Branch_name, Amount) Account (Acc_No, Balance, Access_Date, Branch_name) i.Display the details of all female customers having age less than 32. ii.Display the name of all branches of 'Ahmedabad' and 'Baroda' city. iii.List out all loans of over 100000 from Vastarpur Branch. iv.Display the name and balance of all customers from 'Surat' city. v.Find the name and address of all male customers who have a loan at Sola Branch.		5				

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
70	2	Consider the relations City(city_name,state) , Hotel(hname,address) , City_Hotel(hname,city_name,owner) Answer the following queries in relational algebra i)Display all the record of hotel name,city name and owner of the Hotel. ii)List the name of cities which have no Hotel. iii)List the Name of hotels owned by 'Taj Group' iv)List the hname and owner who belongs to Gujarat State. v)Find the name of city Whose state is either Gujarat or Rajasthan or both.		5				
71	2	Consider the following schema for products: Product(maker, model, type) PC(model, speed, ram, hd, price) Laptop(model, speed, ram, hd, screen, price) Printer(model, color, type, price) Write relational algebra queries to answer the following questions: 1. What PC models have a speed of at least 3.00? 2. Which manufacturers make laptops with a hard disk of at least 100GB? 3. Find the model number and price of all products (of any type) made by manufacturer B. 4. Find the model numbers of all color laser printers. 5. Find those manufacturers that sell Laptops, but not PC's.		5				
72	2	Consider following relations: User(Id, Name, Age, Gender, OccupationId, CityId) Occupation(OccupationId, OccupationName) City(CityId, CityName) Write queries in relational algebra form: 1) Find name of users whose age is less than 25. 2) Find all details of user who is either female or whose age is not 30 or both. 3) Find Age and Occupation name of all users. 4) Find name and their respective city name of all users. 5) Find id, name and occupation name of all male users.		5				
73	2	Consider following schema : Instructor(I_id , I_name , I_dept , I_salary) Course(C_id , C_name ,C_sem , C_year) Teaches(I_id , C_id) Write query using relation algebra to find the name of instructor along with the name of course they teach.		1				
74	2	Suppose there is an bank BOI database which comprises following Relations : BOI (customer_name , I_street , I_city , I_number , I_balance) Employee (E_id , Designation) Write query using relation algebra to find the names of all the customers who have balance greater than 60000 and street is millenaire .		1				
75	2	Consider both relation given below are compatible relation. Employee schema(Name , Eid , Address , Age) Customer schema(Name , Cid , Address ,Age) Write query using relation algebra to find the name and age of all who is either employee or customer or both.		1				
76	2	Write relational algebra syntax for the given queries using the following database: Employee(eno, ename, salary, designation) Customer (cno, cname, adress, city) 1) Find out name of employees who are also customers. 2) Find out name of person who are employees but not customers 3) Display all names who are either emplyees or customers.		3				
77	3	Types of SQL Commands are _____	D	1	DDL	DML	DCL	All of the above
78	3	Which of the following is not a type of SQL statement?	D	1	Data Manipulation Language (DML)	Data Definition Language (DDL)	Data Control Language (DCL)	Data Communication Language (DCL)
79	3	Commands that comes under DDL is/are –	D	1	DROP	CREATE	TRUNCATE	All of the above
80	3	Command that comes under DML is/are –	C	1	ROLLBACK	GRANT	UPDATE	All of the above
81	3	Command that comes under DCL is/are -	C	1	GRANT	REVOKE	Both A. and B.	None of the above

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
82	3	Which of the following is generally used for performing tasks like creating the structure of the relations, deleting relation?	D	1	DML(Data Manipulation Language)	Query	Relational Schema	DDL(Data Definition Language)
83	3	You can add a row using SQL in a database with which of the following?	C	1	ADD	CREATE	INSERT	MAKE
84	3	Which of the following syntax is true for adding a new record in table ?	A	1	INSERT INTO table_name (column1, column2, column3, ...) VALUES (value1, value2, value3, ...);	INSERT INTO (column1, column2, column3, ...) VALUES (value1, value2, value3, ...);	INSERT INTO table_name (column1, column2, column3, ...) (value1, value2, value3, ...);	INSERT IN table_name (column1, column2, column3, ...) VALUES (value1, value2, value3, ...);
85	3	The FROM SQL clause is used to_____?	A	1	specify what table we are selecting or deleting data FROM	specify range for search condition	specify search condition	None of these
86	3	The table records can be retrieved using which command?	B	1	RETRIEVE	SELECT	CREATE	ALTER
87	3	What default value gets stored in columns of the table?	A	1	NULL	0	1	-1
88	3	Which of the following is wrong?	D	1	select * from table_name where condition;	alter table table_name add(column_name column_datatype);	rename old_table_name to new_table_name;	None of these
89	3	From the set of results, in order to remove the duplicate values from a particular column, _____ clause is used within select clause.	B	1	Where	Distinct	Remove	Drop
90	3	Which of the following statement removes database including its related components?	A	1	DROP DATABASE	DELETE DATABASE	REMOVE DATABASE	None of the mentioned
91	3	Command that is used to add attributes to an existing relation, is said to be	A	1	Alter	Tailor	Modify	Eliminate
92	3	Which statement would add a column CGPA to a table Student which is already created	C	1	ALTER TABLE Student ADD COLUMN (CGPA NUMBER(3,1));	ALTER TABLE Student CGPA NUMBER(3,1);	ALTER TABLE Student ADD (CGPA NUMBER(3,1));	Both A and C
93	3	To delete a particular column in a relation the command used is:	D	1	UPDATE TABLE	TRUNCATE COLUMN	DELETE COLUMN	ALTER , DROP
94	3	Data manipulation language (DML) includes statements that modify the _____ of a database.	B	1	Structure	Data	User	Size
95	3	Write queries for the following tables: T1 (Empno, Ename , Salary, Designation) ,T2 (Empno, Deptno.) (1) Add a new column Deptname in table T2. (2) Change the designation of Geeta from 'Manager' to 'Senior Manager'.		2				
96	3	Write query for the following: employee(id,name,salary,address) (1) To create a table from a table. (2) To add a new column in the table		2				
97	3	Write query for the following: Student_info(college_id,college_name,branch) (1) add a new column for CGPA. (2) change the name of the table from student_info to student_details (3) remove the details of all students for new batches. (4) delete the Student_details Table.		4				
98	3	We have following relations: Supplier(S#,sname,status,city) Parts(P#,pname,color,weight,city) SP(S#,P#,quantity) Answer the following queries in SQL. (1) Delete records in supplier table whose status is 40. (2) Add one field in supplier table.		2				

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
99	3	Write queries for the following tables: T1 (Empno, Ename , Salary, Designation) T2 (Empno, Deptno.) (1) Display all rows for salary greater than 5000 (2) Add a new column deptname in table T2. (3) Change the designation of ename = 'ram' from 'clerk' to 'senior clerk'. (4) Drop the table T1		4				
100	3	Write a Query to create the following table named Member (ID char(6), Name varchar(30), Fee int(10), DOJ Date) Perform the following tasks: (1) After Creating table add one new column named Email_id of Varchar type with size=12 (2) Modify datatype and size of column named "ID" from char (6) to Number (3) Rename Fee column to new name "Fees" (4) Rename the Table from Member to Member_details (5) Insert minimum 5 records to the given Table (6) Update at least two records (7) Delete the record having ID=101		8				
101	4	Which of the following is incorrect about an ER Model.	C	1	An attribute of an Entity can have more than one value.	An attribute of an entity can be composite.	In a row of a relational table an attribute can have more than one value.	In a row of a relational table an attribute can have exactly one value or NULL.
102	4	Double diamond symbol is used for?	C	1	Entity relationship type	Attribute	Weak entity relationship type	Tuple
103	4	The ……………. model organizes data into a tree-like structure, where each record has a single parent .	D	1	Network Model	Entity-relationship Model	Relational Model	Hierarchical Model
104	4	The attribute name could be structured as an attribute consisting of first name, middle initial, and last name. This type of attribute is called	B	1	Simple attribute	Composite attribute	Multivalued attribute	Derived attribute
105	4	The function that an entity plays in a relationship is called that entity's	C	1	Participation	Position	Role	Instance
106	4	Address is which kind of the attribute ?	A	1	Composite	Single	Simple	Derived
107	4	Degree of a relationship is defined as:	B	1	Number of entities of one entity set related with number of entities in another entity set	Number of entities that participate in relationship	Number of records in relationship set	Number of attributes in entity set
108	4	If Every entity in entity set E participates at least once in relationship set R, then participation of entity set E in relationship set R is?	D	1	Null	Partial	One to many	Total
109	4	Phone_No is Which type of Attribute?	D	1	Composite	Descriptive	Derived	Multivalued
110	4	The descriptive property possessed by each entity set is called as?	C	1	**Generalization**	Relationship	Attribute	Association
111	4	Following attributes belong to which entity 1.) AccountType 2.)Account_ExpirationDate 3.) No. of users 4.) Video Quality	C	1	Email-ID	Net Banking	Netflix	Paytm
112	4	What is the minimum number of relations required to represent the following ER diagram? 	C	1	7	8	3	4
113	4	The attribute AGE is calculated from DATE_OF_BIRTH. The attribute AGE is	D	1	Single valued	Multi valued	Composite	Derived
114	4	In a many to one relationship, the primary key of one entity acts as foreign key on which side?	B	1	On the side where single (one) relationship is defined	On the side where many relationship is defined	On both the sides	None of the Above

Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
115	4	_____ is a set of entities of the same type that share the same properties, or attributes.	C	1	Attribute set	Relation set	Entity set	Entity model
116	4	An entity in A is associated with at most one entity in B. An entity in B, however, can be associated with any number (zero or more)	D	1	One-to-many	One-to-one	Many-to-many	Many-to-one
117	4	_____ express the number of entities to which another entity can be associated via a relationship set.	A	1	Mapping Cardinality	Participation Constraints	Entity Set	Relationship
118	4	The partial participation by entity is represented in E-R diagram as ………..	D	1	Rectangle	Double rectangle	Double line	None of these
119	4	Attributes of entity A are associated with at most one entity in B, This is called as	C	1	One to many	One to one	Many to one	Many to many
120	4	The total participation by entities is represented in E-R diagram as	B	1	Dashed line	Double line	Double rectangle	Circle
121	4	Given the basic ER and relational models, which of the following is INCORRECT?	C	1	An attribute of an entity can have	An attribute of an entity can be	In a row of a relational table,	In a row of a relational table,
122	4	What is a relationship called when it is maintained between two entities?	B	1	Unary	Binary	Ternary	Quaternary
123	4	Key to represent relationship between tables is called	C	1	Primary key	Secondary Key	Foreign Key	None of the mentioned
124	4	An entity set that does not have sufficient attributes to form a primary key is termed a _____	C	1	Strong entity set	Variant set	Weak entity set	Variable set
125	4	The descriptive property possessed by each entity set is _____	B	1	Entity	Attribute	Relation	Model
126	4	The Relationship sets that involve two entities is known as _____ Relationship set	B	1	Unary	Binary	Ternary	Many to Many
127	4	If you were collecting and storing information about your music collection, an album would be considered as_____	B	1	Relation	Entity	Instance	Attribute
128	4	Let E1 and E2 be two entities in an E/R diagram with simple single-valued attributes. R1 and R2 are two relationships between E1 and E2, where R1 is one-to-many and R2 is many-to-many. R1 and R2 do not have any attributes of their own. What is the minimum number of tables required to represent this situation in the relational model?	B	1	2	3	4	5
129	4	What is the min and max number of tables required to convert an ER diagram with 2 entities and 1 relationship between them with partial participation constraints of both entities?	C	1	Min 1 and max 2	Min 1 and max 3	Min 2 and max 3	Min 2 and max 2
130	4	Which of the following statement is False about Weak Entity set?	D	1	Week Entity can be deleted automatically when their strong entity is deleted	A week entity set has no primary keys unless attributes of strong entity set on which it dependes are included	Week entity set avoid data duplication and consequent possible inconsistency caused by duplicating the key.	Tuples in a Week entity set are not partitioned according to their relationship with tuples in a strong entity set
131	4	The similarities between the entity set can be expressed by which of the following features?	B	1	Specialization	Generalization	Uniquation	Inheritance
132	4	Higher level entity sets are designated by the term _____	B	1	Sub class	Super class	Parent class	Root class
133	4	_____ is an abstraction through which relationships are treated as higher level entities	D	1	Creation	Superseding	Attribute separation	Aggregation
134	4	What is the minimum number of relations required to represent the following specialization/generalization?	D	1	4	3	2	1
135	4	What is the minimum number of relations required to represent the following specialization/generalization?	C	1	4	3	2	1
136	4	In Which of the following a group of entities is divided into sub-groups based on their characteristics?	D	1	Aggregation	Generlization	Inheritance	Specialization
137	4	_____ splits an entity to form multiple new entities that inherit some feature of the splitting entity	B	1	Generalization	Specialization	both A & B	None of the Above
138	4	…………. will work in Top-down approach and ……………….. will work in Bottom-up approach .	D	1	Generalization , Specialization	Attribute , Entity	Entity , Attribute	Specialization , Generalization

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
139	4	Draw ER diagram for university database consisting four entities Student, Department, Class and Faculty. Student has a unique id, the student can enroll for multiple classes and has a most one major. Faculty must belong to department and faculty can teach multiple classes. Each class is taught by only faculty. Every student will get grade for the class he/she has enrolled Also Find out the minimum number of tables required to represent the given ER diagram in relational model.		7				
140	4	Construct E-R diagram of the bank Management System. It provides different kinds of bank accounts and loans. It operates number of branches.		5				
141	4	Draw E–R Diagram for the College Management System.		7				
142	4	Draw E-R diagram for Hospital management system		5				
143	4	Construct E-R diagram that uses only a binary relationship between students and course-offerings. Make sure that only one relationship exists between a particular student and course-offering pair, yet you can represent the marks that a student gets in different exams of a course offering.		5				
144	4	Construct an E-R diagram for a car-insurance company whose customers ownone or more cars each. Each car has associated with it zero to any number ofrecorded accidents.		5				
145	4	Construct the ER diagram for company. These entities have the following attributes − Employee - ENO(Primary Key) , Name, SSN, Salary Department - DNO(Primary key), Name, Budget Project - PNO(Primary key), Name, budget, date, hours, status		5				
146	4	A university registrar's office maintains data about the following entities: 1. courses, including number, title, credits, syllabus, and prerequisites; 2. course offerings, including course number, year, semester, section number, instructor(s), timings, and classroom; 3. students, including student-id, name, and program; 4. instructors, including identification number, name, department, and title. Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modeled. Construct an E-R diagram for the registrar's office. Document all assumptions that you make about the mapping constraints		7				
147	4	Consider a university database for the scheduling of classrooms for -final exams. This database could be modeled as the single entity set exam, with attributes course-name, section number, room-number, and time. Alternatively, one or more additional entity sets could be defined, along with relationship sets to replace some of the attributes of the exam entity set, as •course with attributes name, department, and c-number •section with attributes s-number and enrollment, and dependent as a weak entity set on course •room with attributes r-number, capacity, and building Show an E-R diagram illustrating the use of all three additional entity sets listed.		5				

148	4	In academic world, A researcher can either be employed as a professor or a lab assistant. There are three kinds of professors: Assistant, associate, and full professors. The following should be stored:
		● For each researcher, his/her name, year of birth, and current position (if
		  any).
		● For each institution, its name, country, and inauguration year.
		● For each institution, the names of its schools (e.g. School of Law, School of Business, School of Computer Science,. . .). A school belongs to exactly
		  one institution.
		● An employment history, including information on all employments (start and end date, position, and what school).
		● Information about co-authorships, i.e., which researchers have co-authored a research paper. The titles of common research papers should also be stored.
		● For each researcher, information on his/her highest degree (BSc, MSc or PhD), including who was the main supervisor, and at what school.
				5				

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
149	4	Draw an E-R Diagram for Employee(with payroll) Management System. 1) Show all the possible entities, attributes and relationships. 2) Show possible Cardinalities constraints.		5				
150	4	Give an ER diagram for a database recording information about teams, players, and their fans, including: 1.For each team, its name, its players, its team captain (one of its players), and the colors of its uniform. 2.For each player, his/her name. 3.For each fan, his/her name, favorite teams, favorite players, and favorite color. 4.Add a relationship Led-by among two players. The intention is that this relationship set consists of tuples (player1, player2) such that player1 played on the team at a time when some other player2 was the team captain. Choose proper cardinalities for all the relationships and state your reason for each choice. Convert your ER diagram to relations and specify primary and foreign keys in each.		5				
151	4	Draw an E R Diagram for a system which generates a marksheet for the student of school.It should contain Student,Teacher and Subject as the entity for the diagram.		5				
152	4	Draw an ER diagram of Company which has the several departments. Each department is associated with number of projects. A Manager controls a particular department. An employee works in only one department but can work on several projects. Show the mapping cardinalities in diagram. Assume suitable attributes for entities.		5				
153	5	A functional dependency is denoted by ….... symbol	C	1	&	*	→	%
154	5	A functional dependency is a relationship between or among …….	D	1	Tables	Rows	Relations	Attributes
155	5	Which of the following is not Armstrong's Axiom?	C	1	Reflexivity rule	Transitivity rule	None of these	Augmentation rule
156	5	We can use the following three rules to find logically implied functional dependencies. This collection of rules is called	B	1	Axioms	Armstrong's axioms	Armstrong	Closure
157	5	There are two functional dependencies with the same set of attributes on the left side of the arrow: A→BC A→B This can be combined as	A	1	A→BC	A→B	B→C	None of the mentioned
158	5	There is a relationship AC →B, A →D, and D→B. Here A is alone capable of determining B, which means B is …......................dependent on AC	A	1	Partially	Fully	Medium	Short
159	5	Functional dependency which also known as a nontrivial dependency occurs when A →B holds true where	C	1	A is a subset of B	B is a subset of A	B is not a subset of A	None of these
160	5	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}+, {C,D}+ of the set of attributes.		3				
161	5	Compute the closure of the following set of functional dependencies for relation schema R = (ABCDE),F = {A → C, E → D, B → C} List the candidate keys for R.		4				
162	5	Compute the closure of R (A, B, C, D, E) with the following set of functional dependencies A → BC , CD → E ,B → D E → A List the candidate keys of R.		3				
163	5	If A→B, A→ C then which of the following is true?	D	1	A→BC	A→B	A→C	All of the mentioned
164	5	Given relation R with attributes A,B, C,D and set of FDs as B → A , AD → C , C → ABD . Canonical cover for given FDs	C	1	{B → E , C → BD, AD → C}	{B → AF , C → BD, AD → C}	{B → A , C → BD, AD → C}	None of there
165	5	Suppose a relational schema R(P, Q, R, S), and set of functional dependency as following F : { P→ QR , Q →R, P→ Q , PQ →R } Find the canonical cover Fc .		7				
166	5	Suppose a relational schema R(w, x, y, z), and set of functional dependency as following F : { x → w, wz → xy, y → wxz } Find the canonical cover Fc		3				
167	5	In the _____ normal form, a composite attribute is converted to individual attributes.	A	1	First	Second	Third	Fourth
168	5	Functional Dependencies are the types of constraints that are based on_____	A	1	Key	Key revisited	Superset key	None of the mentioned

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
169	5	Prove the statement "Every relation which is in BCNF is in 3NF but the converse is not true		4				
170	5	Consider a relation R with five attribute A,B,C,D,E having following dependencies : A → B, BC→ E and ED→A a)List all Keys for R b) In which normal form table is, justify your answer.		4				
171	5	Consider table R(A,B,C,D,E) with FDs as A → B, BC→E and ED→ A. Rrlation is in which normal form? Justify your answer		3				
172	5	Compute the closure of the following set F of functional dependencies for relation schema R = (ABCDE),F = {A → C, E → D, B → C} List the candidate keys for R. The relation R is in which normal form.		4				
173	5	Third Normal Form is ….........................	A	1	2NF and no transitive dependencies	2NF or no transitive dependencies	4NF or no transitive dependencies	None of these
174	5	A relation is in 2NF when it is in 1 NF and …......................	C	1	No Transitivity	Partial functional dependencies	No partial functional dependencies	None of these
175	5	In which normal form conversion of composite attribute to individual attribute happens,	A	1	First NF	Second NF	Third NF	None of these
176	5	Normalization is used to design _____	D	1	Join dependencies	Multi-valued dependencies	Cyclic dependencies	Relational database
177	5	In a schema with attributes A, B, C, D and E following set of functional dependencies are given {A → B, A → C, CD → E, B → D, E → A} Which of the following functional dependencies is NOT implied by the above set?	B	1	CD → AC	BD → CD	BC → CD	AC → BC
178	5	F = {CH → G, A → BC, B → CFH, E → A, F → EG} is a set of functional dependencies The relation R is	A	1	in 1NF, but not in 2NF.	in BCNF	in 3NF, but not in BCNF.	in 2NF, but not in 3NF.
179	5	AB→CD, AF→D, DE→F, C→G , F→E, G→A Which one of the following options is false?	C	1	CF+ = {ACDEFG}	BG+ = {ABCDG}	AF+ = {ACDEFG}	None of the above
180	5	Which normal form is considered adequate for normal relational database design?	B	1	1NF	3 NF	2 NF	4 NF
181	5	Every BCNF is in	D	1	1 NF	2 NF	3 NF	All of the above
182	5	A table has fields F1, F2, F3, F4, and F5, with the following functional dependencies: F1→F3 , F2→F4 , (F1,F2)→F5 in terms of normalization, this table is in	D	1	3 NF	2 NF	4 NF	1`NF
183	5	Which of the following is TRUE?	B	1	Every relation in 2NF is also in BCNF	Every relation in BCNF is also in 3NF	No relation can be in both BCNF and 3NF	A relation R is in 3NF if every non-prime attribute of R is fully functionally dependent on every key of R
184	5	Consider the following functional dependencies in a database. Date_of_Birth→Age Age→Eligibility Name→Roll_number Roll_number→Name Course_number→Course_name Course_number→Instructor (Roll_number, Course_number)→Grade The relation (Roll_number, Name, Date_of_birth, Age) is	D	1	in second normal form but not in third normal form	in third normal form but not in BCNF	in BCNF	None of these
185	5	Consider the relation R(A,B,C) for functional dependency set (A→B and B→C) which is decomposed into two relations R1(A,C) and R2(B,C). Check this decomposition is dependency preserving or not.		4				
186	5	S1: Every table with two single-valued attributes is in 1NF, 2NF, 3NF and BCNF. S2: AB→C, D→E, E→C is a minimal cover for the set of functional dependencies AB→C, D→E, AB→E, E→C. Which one of the following is CORRECT?	D	1	Both S1 and S2 are FALSE.	S1 is FALSE and S2 is TRUE.	Both S1 and S2 are TRUE.	S1 is TRUE and S2 is FALSE.

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
187	5	For a database relation R(a,b,c,d), where the domains a, b, c, d include only atomic values, only the following functional dependencies and those that can be inferred from them hold: { a → c, b → d } This relation is	A	1	in first normal form but not in second normal form	in second normal form but not in first normal form	in third normal form	None of the above
188	5	Relation R has eight attribute ABCEFGH. F = {CH → G, A → BC, B → CFH, E → A, F → EG} is a set of functional dependencies.How many candidate keys does the relation R have? (table: cid, name, address, contactno — C01 riya Amul Aaavas, Baroda 9899556688, 9988445512; C02 hena Birla Gruh,Anand 9977556688; C03 piya Om park,surat 9722556385, 7855663321)	C	1	3	6	4	None of these
189	5	Find Closure set of Attribute for the following: R(A,B,C,D,E,F), FD: AB → C, BC → AD, D → E, CF → B, (AB)+=?	A	1	ABCDE	ABC	AB	ABCDEF
190	5	Which of the following is Non-Trivial Dependency (table Item_details: Order_no, Order_date, Item_code, Quantity, Price/Unit — 1456 26-Dec-2021 3687 52 50.4 / 4627 38 60.00 / 3214 20 20.00; 1886 04-Mar-2021 4629 45 20.25 / 4627 30 60.20; 1788 04-Apr-2021 4627 40 60.20)	D	1	A. {cid,ano}→bname	B. {cid}→access_date	C. {cid,ano}→balance	F. All of these
191	5	Match the following Condition / Normal form a) No Partial dependencies 1) First normal form b) No transitive dependencies 2) Second normal form c) Atomic value 3) Third normal form	B	1	a-1 , b-2 , c-3	a -2, b-3 , c-1	a-3 , b-1 , c-2	a-1 , b-3 , c-2
192	5	What is the Candidate Key for given FDs? FD : {EF→G ,F→IJ , EH→KL , K→M, L→N}	B	1	{GI}	{EFH}	{KL}	{IJ}
193	5	For a relation R(X, Y, Z, W) with primary key(X, Y) a functional dependency XY→Z is said to be _____.	A	1	Full Dependency	Partial Dependency	Trivial Dependency	None of these
194	5	What is the candidate key in the relation R(eid,name,age,gender ,marks) consider given functional dependencies name→eid , name→marks , name→gender,age	B	1	eid , marks	name	eid , gender	age
195	5	If F is a set of functional dependencies, then the closure of F is denoted by? (table: EID, ENAME, EMP_ZIP, EMP_STATE, EMP_CITY — 1 Harry 201010 UP Noida; 2 Stephan 02228 US Boston; 3 Lan 60007 US Chicago; 4 Katharine 06389 UK Norwich; 5 John 462007 MP Bhopal)	A	1	F+	Fo	F	F*
196	5	If K → L then ___ → LM.	A	1	KM	LM	KL	NONE
197	5	If a functional dependency is reflexive, Y is a subset of X and X is the set of attributes, then (table: StudId, Student Name, City, Pincode, ProjectId, Project Name, Course, Content — S101 Ajay Surat 326201 P101 Health Prog. C++,Java,C; S102 Vijay Pune 325456 P102 Social WEB HTML, PHP.ASP)	C	1	Y→X holds	XY→Z holds	X→Y holds	None of these
198	5	If B is an attribute and A→B, Then B is said to be _____ by A.	B	1	Logically implied	Functionally determined	Logically determined	Functionally implied

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
199	5	Suppose relation R(A,B,C,D,E) has the following functional dependencies: A →B ,B → C, BC→ A, A → D, E → A, D → E. Which of the following is not a key? sid, sname, cid, cname, fid, fname, salary table: 1 ram c1 dbms f1 john 35000; 2 ravi c2 ds f2 hena 55000; 3 riya c1 dbms f1 john 35000; 4 raj c1 dbms f1 john 35000	B	1	A	B,C	E	D
200	5	If B is determined by A, then ___ is determined by BC regardless of C in the augmentation rule.	B	1	AB	AC	A	C
201	5	If A determines B, and BC determines D, then AC determines D according to the ___ Rule.	D	1	Pseudo Decomposition Rule	Transitive Rule	Pseudo Rule	Pseudo Transitive Rule
202	5	If ___, then A -> B has trivial functional dependency.	A	1	B is a subset of A	A is a subset of B	A is a subset of A'	B is a subset of B'
203	5	"The relation employee(ID,name,street,Credit,street,city,salary) is decomposed into employee1 (ID, name) employee2 (name, street, city, salary) This type of decomposition is called"	B	1	Lossless decomposition	Lossy decomposition	Both A and B	None of these
204	5	If A→BC then A→B and _____ is decomposition rule.	A	1	A→C	B→A	C→A	B→C
205	5	"The relation Account_Branch(Ano, Balance, Bname, Baddress) is decomposed into Account (Ano, Balance, Bname) Branch(Bname, Baddress) This type of decomposition is called"	A	1	Lossless decomposition	Lossy decomposition	Both A and B	None of these
206	5	Relation R has six attribute ABCDEF. F = { A → BC, B → CE, E → A, F → E} is a set of functional dependencies.How many candidate keys does the relation R have?	A	1	1	2	4	None of these
207	5	If A → B and BC → D then ___.	C	1	AB → D	D → AB	AC → D	D → AC
208	5	Relation R has following attribute ABCDEF. F = { A → B, B → CE, E → A, F → E} is a set of functional dependencies. Which one is candidate key?	B	1	D	DF	A	AF
209	5	For a given relation R has following attribute EFGHIJKLMN. What are prime attribute? FD : {EF→G ,F→IJ , EH→KL , K→M, L→N}	A	1	E,F,H	G,I	K,L	I,J
210	5	Suppose a relational schema R(A,B,C,D,E,F), and set of functional dependency as following: F:{ AB → C, DC → AE, E → F }.Find the total no of candidate keys for a given relation.		2				
211	5	Consider a relation R(A,B,C,D,E,F,G,H) with FDs as AB → C, A→DE and B→F ,F→GH, where candidate key is AB. Find given relation is in which normal form? Justify your answer.		2				
212	5	Normalize the relation customer to solve the problems of multivalued attributes and composite attributes and redundancy. Sample data for customer relation: cid, name, address, contactno table: C01 riya Amul Aaavas, Baroda 9899556688, 9988445512; C02 hena Birla Gruh,Anand 9977556688; C03 piya Om park,surat 9722556385, 7855663321		3				
213	5	Relation R(ABCD) Functional dependency FD: (A → B, B → C, C → D} Find one candidate key.		1				

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
214	5	Study the relation given below and convert it into 2NF. (Item_details table: Order_no, Order_date, Item_code, Quantity, Price/Unit — 1456, 26-Dec-2021, 3687/52/50.4, 4627/38/60.00, 3214/20/20.00; 1886, 04-Mar-2021, 4629/45/20.25, 4627/30/60.20; 1788, 04-Apr-2021, 4627/40/60.20)		4				
215	5	Prove the union rule: If $X \rightarrow Y$ and $X \rightarrow Z$ then $X \rightarrow YZ$. Using only reflexivity, augmentation and transitivity.		2				
216	5	Convert following relation in 3NF. (Consider already in 2NF) Account_Branch(acc_no, balance, branch_name, branch_city) With following dependencies: acc_no → balance, branch_name, branch_city; branch_name → branch_city		2				
217	5	The following functional dependencies hold true for the relational scheme R (A , B , X , Y) X → A AB → XY Y → AXB Find the canonical cover for the given functional dependencies.		5				
218	5	The following functional dependencies hold true for the relational scheme R (rollno , name , voterid , age) FDS={rollno→ name , rollno→ voterid , voterid → age , voterid r→ rollno } Find the highest normal form of the given functional dependencies , check only upto BCNF.		2				
219	5	Write down the criteria for a relation to be in 3NF. Consider the given Relation and normalize it into 3 Normal Form. (Table: EID, ENAME, EMP_ZIP, EMP_STATE, EMP_CITY — 1/Harry/201010/UP/Noida; 2/Stephan/02228/US/Boston; 3/Lan/60007/US/Chicago; 4/Katharine/06389/UK/Norwich; 5/John/462007/MP/Bhopal)		2				
220	5	Given relation R with attributes (P, Q, R, S, T, U) and set of FDs are: {PQ → R , R → ST , T → U, S → P, R → Q }. Find all the possible candidate keys.		3				
221	5	Normalize below given relation upto 2NF. (Table: StudId, Student Name, City, Pincode, ProjectId, Project Name, Course, Content — S101/Ajay/Surat/326201/P101/Health/Prog./C++,Java,C; S102/Vijay/Pune/325456/P102/Social/WEB/HTML, PHP.ASP)		4				
222	5	For relation R(ABCD) Find the Irreducible set of FD from given FD. FD: {A→B, C→B, D→ABC, AC→D}		3				
223	5	Identify the anomalies which affect the storing and retrieving data in relation school data and write down the solution for identified anomalies. Sample data for schooldata relation: (Table: sid, sname, cid, cname, fid, fname, salary — 1/ram/c1/dbms/f1/john/35000; 2/ravi/c2/ds/f2/hena/55000; 3/riya/c1/dbms/f1/john/35000; 4/raj/c1/dbms/f1/john/35000)		3				
224	6	Select the correct constraint in SQL?	D	1	NOT NULL	CHECK	DEFAULT	All of the above
225	6	_____ and _____constraints form the core of the PRIMARY KEY constraint.	D	1	NOT NULL , CHECK	NOT NULL , DEFAULT	NOT NULL , FOREIGN KEY	NOT NULL , UNIQUE

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226	6	To modify the students table and to add a primary key on the student_id Column, Which statement must be used to accomplishes this task? Note: The table is currently empty.	D	1	alter table students modify (student_id primary key);	Alter table students add constraint primary key (student_id);	Alter table students add constraint stud_id_pk primary key (student_id);	A&C BOTH
227	6	Which of the following is TRUE about UNIQUE constraint?	D	1	In columns that are subject to the UNIQUE constraint, duplicate values are not allowed.	Unique values will always be present in the column containing the unique constraint.	A single table can have more than one unique constraint, since it can be applied to more than one column.	All of the above
228	6	_____ is an attribute, or set of attributes, that uniquely identifies a tuple within a relation	B	1	Foreign key	Superkey	Matching key	None of above
229	6	Which of the following set of operations is a valid set of aggregate operations in SQL?	A	1	COUNT, MAX, AVG, SUM	MAX, AVG, SUM, SELECT	UNION, COUNT, MIN, DESC	AVG, MIN, MAX, ASC
230	6	Aggregate functions are functions that take a _____ as input and return a single value.	A	1	Collection of values	Single value	Aggregate value	Both Collection of values & Single value
231	6	All aggregate functions except _____ ignore null values in their input collection.	B	1	Count(attribute)	Count(*)	Avg	Sum
232	6	Which is not an Aggregate function of SQL?	D	1	SUM()	AVG()	MIN()	PERCENT()
233	6	What is the output value of query given below? SELECT ROUND(157.74532, 2) FROM DUAL;	C	1	157.74532	157.7452	157.75	157.745336
234	6	What will be the output of following statement? Suppose salary = 9000.67 SELECT ROUND(salary) from emp;	A	1	9001	9000	8999	9000.6
235	6	What will be the output of following Query? select upper('Tom') from NAMES	B	1	Tom	TOM	tom	None of above
236	6	What is the output value of query given below SELECT INITCAP('database management system') FROM DUAL;	C	1	Database magement System	Database management system	Database Management System	DATABASE MANAGEMENT SYSTEM
237	6	The intersection operator is used to get the _____ tuples.	B	1	Different	Common	All	Repeating
238	6	The union operation automatically _____ unlike the select clause.	D	1	Adds tuples	Eliminates unique tuples	Adds common tuples	Eliminates duplicate
239	6	If we want to retain all duplicates, we must write _____ in place of union.	A	1	Union all	Union some	Intersect all	Intersect some
240	6	The _____ is essentially used to search for patterns in target string.	A	1	Like Predicate	Null Predicate	In Predicate	Out Predicate
241	6	select substr('123456789', 4,3) from dual;	C	1	6789	2345	456	456789
242	6	What will be the output of following query? Select * from Worker where FIRST_NAME like 'h%';	B	1	Print all details of the Workers whose FIRST_NAME ends with 'h'	Print all details of the Workers whose FIRST_NAME starts with 'h'	Print all details of the Workers whose FIRST_NAME ends with 'h' and contains six alphabets.	Print all details of the Workers whose FIRST_NAME starts with 'h' and contains six alphabets.
243	6	Inorder to change a string from 'hello world' to 'HeLLo WorLd' which of the following is the most appropriate function to use in oracle?	A	1	translate()	replaced()	initcap()	substr()

244	6	Choose correct order:
		
		  1) upper(s1) I) removes space from both(left,right) side from the given string
		  2) trim(s1) II) returns average values of n ignoring null
		  3) avg(n) III) returns square root of n.
		  4) sqrt(m) IV) returns value of given sting in uppercase letters.
			A	1	1)-IV, 2)-I, 3)-II, 4)-III	1)-I, 2)-II, 3)-III, 4)-IV	1)-III, 2)-II, 3)-I, 4)-IV	1)-IV, 2)-III, 3)-II, 4)-I

245	6	What will be the output of following oracle query? select LPAD(UPPER(SUBSTR('Lok Jagruti University', 5, 7)), 10, '*') from dual;	D	1	***Jagruti	*******agr	*******AGR	***JAGRUTI
246	6	What will be the output of following oracle query? Select answer with correct order. select CEIL(25.2), FLOOR(25.6) from dual;	A	1	26, 25	26, 50	25, 50	25, 100

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
247	6	Consider following schema and write SQL for given statements. worker (id,firstname,lastname,salary,joining_date,dept) 1. Write an query to fetch firstname from worker table in UPPER case. 2. Write an query to fetch department starting with E. 3. Dispaly the first three characters of lastname from the table.		3				
248	6	Write SQL statement for following: 1. Round 43.6753 to nearest smallest integer. 2. Convert " Well done! " to " WeLL dOne? "		2				
249	6	Write SQL statement to create following tables using suitable Primary Key, Foreign Key and Check Constraints. Employee(eid, name, doj, age, gender) Payment(pid, pay_date, salary, eid)		2				
250	6	We have following relations: EMP(empno, ename, jobtitle, managerno, hiredate, sal, comm, deptno) DEPT(deptno, dname, loc) Answer the following queries in SQL. i) Find the Employees working in the department 10, 20, 30 only. ii) Find Employees whose names start with letter A or letter a. iii) Find the Employee no ,name and salary whose salary is in range 10000 to 30000.		3				
251	6	Consider following schema and write SQL for given statements. Student(Rollno, Name, Age,Sex,City) Student_marks(Rollno,Sub1,Sub2,Sub3,Total,Average) Write query to (i) Calculate and store total and average marks from Sub1, Sub2& Sub3. (ii) Display name of students who got more than 60 marks in subject Sub1. (iii) Display name of students with their total and average marks.		3				
252	6	Write SQL queries for the following based on table: Teacher(T_id, T_name, Subject, DOJ, Salary, Workload, Gender) (1) Display the total number of English teachers (2) Display the detail of teacher with maximum workload		2				
253	7	A transaction is delimited by statements (or function calls) of the form _____	A	1	Begin transaction and end transaction	Start transaction and stop transaction	Get transaction and post transaction	Read transaction and write transaction
254	7	Identify the characteristics of transaction:	D	1	Atomicity	Durability	Isolation	All of the mentioned
255	7	When the transaction finishes the final statement, in which state the transaction enters into?	C	1	Active state	Committed state	Partially committed state	Abort state
256	7	A transaction may not always complete its execution successfully. Such a transaction is termed as _____.	A	1	Aborted	Terminated	Closed	All of the mentioned
257	7	Which of the following is not a state in transaction?	B	1	Active	Closed	Aborted	Partially committed
258	7	Collection of operations that form a single logical unit of work are called _____	A	1	Transactions	Units	Network	Views
259	7	With regards to transaction processing, any DBMS should be capable of:	D	1	Ensuring that transactions are free from interference from other users.	Parts of a transaction are not lost due to a failure.	Transactions do not make the database inconsistent.	All of the above.
260	7	Which of the following is an atomic sequence of database actions?	A	1	Transaction	Concurrency	Relations	All of the mentioned
261	7	If the state of the database no longer reflects a real state of the world that the database is supposed to capture, then such a state is called _____.	D	1	Consistent state	Parallel state	Atomic state	Inconsistent state

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
262	7	Transaction processing is associated with everything below except ____.	C	1	Producing detail summary or exception reports	Recording a business activity	Confirming an action or triggering a response	Maintaining a data
263	7	A transaction completes its execution is said to be _____.	D	1	Saved	Loaded	Rolled	Committed
264	7	Consider the given two scinarios: (1) money is transferred from account-A to account-B and (2)money is debited from account-A . Which of the following forms a transaction?	C	1	Only 1	Only 2	Both 1 and 2 individually	None of the mentioned
265	7	_____ means that the data used during the execution of a transaction cannot be used by a second transaction until the first	C	1	Consistency	Durability	Isolation	Atomicity
266	7	What is ACID properties of Transaction?	B	1	Atomicity, Consistency, Isolation, Database	Atomicity, Consistency, Isolation, Durability	Atomicity, Concurrency, Isolation, Durability	Automatically, Concurrency, Isolation, Durability
267	7	Which of the following has "all-or-none" property?	A	1	Atomicity	Durability	Isolation	Consistency
268	7	The real use of the Two-phase commit protocol is _____	D	1	Deadlock will not occur	Concurrency control can be	Robustness	Atomicity (all-or-nothing commits)
269	7	Which of the given property of transaction ensures that, The database system must take special actions to ensure that transactions operate properly without interference from	C	1	Atomicity	Durability	Isolation	Consistency
270	7	The property of a transaction that persists all the crashes is called _____.	B	1	Atomicity	Durability	Isolation	Consistency
271	7	Which of the listed transaction property states that only valid data will be written to the database?	A	1	Consistency	Durability	Isolation	All of the mentioned
272	7	Execution of transaction in isolation preserves the _____ of a database.	C	1	Atomicity	Durability	Consistency	All of the mentioned
273	7	Which of the following systems is responsible for ensuring durability?	D	1	Concurrency control system	Atomic system	Compiler system	Recovery system
274	7	A transaction enters the failed state after the system determines that the transaction can no longer proceed with its normal execution. Such a transaction must be rolled back. Then it enters the ……………… state.	C	1	Active	Partially committed	Aborted	Inactive
275	7	Which of the following systems is responsible for ensuring isolation?	A	1	Concurrency control system	Atomic system	Compiler system	Recovery system
276	7	A schedule is serialized if it is equivalent to a _____ schedule.	B	1	Non-serial	serial	View	None of the mentioned
277	7	What is incorrect for S2?	D	1	Not serializable	View Serializable to <Ta, Tb, Tc >	Conflict Serializable to <Ta, Tb, Tc >	Both C and D
278	7	A schedule is _____ if it is conflict equivalent to a serial schedule.	A	1	Conflict serializable	Conflicting	Non serializable	None of the mentioned
279	7	Consider the given schedules S1,S2,S3 given above . Which schedules are following two phase locking protocol(2PL)?	D	1	Schedules S1 ,S2,S3 all are following 2PL.	Schedules S1 ,S2,S3 all are not following 2PL.	Schedules S1 ,S2 both are following 2PL .	Schedules S1 ,S3 both are following 2PL.
280	7	If a schedule S can be transformed into a schedule S' by a series of swaps of non-conflicting instructions, then S and S' are:	C	1	Non conflict equivalent	Equal	Conflict equivalent	Isolation equivalent
281	7	Which of the following statements is true for the following schedules: I) r1(A); w1(B); r2(B): w2(C); r3(C); w3(A); II) w3(A); r1(A); w1(B); r2(B): w2(C); r3(C);	D	1	I is conflict serializable	I is not conflict serializable	II is not conflict serializable	Both A and C
282	7	I and J are _____ if they are operations by different transactions on the same data item, and at least one of them is a write operation.	A	1	Conflicting	Overwriting	Isolated	Durable
283	7	When one transaction nullifies the updates of another transaction, it is called:	B	1	Inconsistent retrievals	Lost Update	Dirty Read	None of the mentioned

L.J Institute of Engineering and Technology, Ahmedabad.
Database Management System (DBMS)
Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
284	7	When one transaction nullifies the updates of another transaction, it is called _____.	B	1	Inconsistent retrievals	Lost Update	Dirty Read	None of the mentioned
285	7	Identify problem from given schedule S1: Ti | Tj Read(A) | Write(A) | | Read(A) | Commit Abort | S1	A	1	Dirty Read	Lost Update	Inconsistent retrievals	Unrepeatable Read
286	7	Reading the data written by an uncommitted transaction is called _____.	B	1	Lost Update	Dirty Read	Unrepeatable Read	None of the mentioned
287	7	To synchronize the concurrent accessing of database items, we use :	C	1	Transactions	States	Locks	Tables
288	7	Consider the given scinario and label the problem in it: (1) T1 reads the value of X (= 10 say). (2) T2 reads the value of X (= 10). (3) T1 updates the value of X (from 10 to 15 say) in the buffer. (4) T2 again reads the value of X (but = 15).	A	1	Unrepeatable Read	Lost Update	Dirty Read	None of the mentioned
289	7	The most widely used structure for recording database modification is called as _____	D	1	List	Queue	Stack	Log
290	7	The value of the data item prior to the write is called as _____	C	1	Transaction identifier	Data-item identifier	Old value	New value
291	7	If the database modifications occur while the transaction is still active, the transaction is said to use the _____ modification technique	B	1	Deferred	Immediate	Log	None of the mentioned
292	7	Which of the following protocols ensures conflict serializability and safety from deadlocks?	A	1	Time-stamp ordering protocol	Two-phase locking protocol	Graph Based Protocol	None of the mentioned
293	7	Suppose a database system crashes again while recovering from a previous crash. Assume checkpointing is not done by the database either during the transactions or during recovery. Which of the following statements is/are correct?	C	1	The same undo and redo list will be used while recovering again	The system cannot recover any further	The database will become inconsistent	System will crash
294	7	We say that a transaction has been _____ when its commit log record has been output to stable storage.	C	1	Locked	Completed	Committed	Released
295	7	Database locking concept is used to solve the problem of:	D	1	Lost Update	Uncommitted Dependency	Inconsistent Data	All of the above
296	7	I and J are _____ if they are operations by different transactions on the same data item, and at least one of them is a write operation.	B	1	Overwriting	Conflicting	Overwriting	Durable
297	7	If a transaction has obtained a _____ lock, it can read but cannot write on the item	A	1	Shared mode	Exclusive mode	Read only mode	Write only mode
298	7	Which of the following protocols requires transactions to hold all locks until after the transaction has committed	C	1	2 phase locking protocol	Conservative 2 phase locking protocol	Strict 2 phase locking protocol	Locking protocol
299	7	In which type of two phase locking protocol having no shrinking phase	C	1	2 phase locking protocol	Conservative 2 phase locking protocol	Strict 2 phase locking protocol	Locking protocol
300	7	If a transaction has obtained a _____ lock, it can both read and write on the item	B	1	Shared mode	Exclusive mode	Read only mode	Write only mode
301	7	In 2 Phase Commit protocol, a transaction commits only if _____.	B	1	There exist no Deadlock	All participants agrees to Commit	The system is consistent	The system is durable.
302	7	The two phase locking protocol consists which of the following phases?	C	1	Growing phase	Shrinking phase	Both Growing and Shrinking Phase	None of the mentioned
303	7	If a transaction may release locks but may not obtain any locks, it is said to be in _____ phase	B	1	Growing phase	Shrinking phase	Deadlock phase	Starved phase
304	7	A transaction can proceed only after the concurrency control manager _____ the lock to the transaction	A	1	Grants	Requests	Allocates	None of the mentioned
305	7	When using Lock based protocol, each transaction must obtain a ___ on the data before it can read or write it.	C	1	Grant	Recovery	Lock	Request
306	7	If a transaction can be granted a lock on an item immediately in spite of the presence of another mode, then the two modes are said to be _____	C	1	Concurrent	Equivalent	Compatible	Executable

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D

307	7	Consider the following two transactions:
		T1: read(A);
		read(B);
		if A = 0 then B := B + 1;
		write(B).
		T2: read(B);
		read(A);
		if B = 0 then A := A + 1;
		write(A).
		Add lock and unlock instructions to transactions T1 and T2, so that they observe the two-phase locking protocol.
				7				

308	7	(I) For each of the sequences of actions below, assume that shared locks are requested immediately before each read action, and exclusive locks are requested immediately before every write action. Also, unlocks occur immediately after the final action that a transaction executes. Tell what actions are denied, and whether deadlock occurs. Also tell how the waits-for graph evolves during the execution of the actions.
		a) r1(A); r2(B); w1(C); r3(D); r4(E); w3(B); w2(C); w4(A); w1(D);
		b) r1(A); r2(B); r3(C); w1(B); w2(C); w3(D);
		
		(II) For each of the following schedules:
		a) r1(A); r2(A); r3(B); w1(A); r2(C); r2(B); w2(B); w1(C);
		b) r1(A); r2(A); w1(B); w2(B); r1(B); r2(B); w2(C); w1(D);
		c) r1(A); r2(A); r1(B); r2(B); r3(A); r4(B); w1(A); w2(B);
		Answer the following questions:
		i. What is the precedence graph for the schedule?
		ii. Is the schedule conflict-serializable? If so, what are all the equivalent serial schedules?
				5				

309	7	Consider the following schedule. Find given schedule is conflict serializable or not . 		3				
310	7	Consider below given schedule and check whether the given schedule is serializable or not using precedence graph. 		3				
311	7	Four schedules S1 , S2 , S3 and S4 are given above. Is S1 and S2 are view serializable or not ? Is S3 and S4 are view serializable or not ? 	D	1	S1 and S2 are view serializable but S3 and S4 are not view serializable.	S1 and S2 are not view serializable but S3 and S4 are view serializable.	S1 and S2 are view serializable , S3 and S4 are view serializable.	S1 ,S2 and S4 are view serializable

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
312	7	Consider the following three schedules having three transactions (indicated by the subscript) using read and write on a data item x, denoted by r(x) and w(x) respectively. Using the precedence graph test which schedule is/are conflict serializable. S1: R2(x); R1(x); W2(x); R3(x); W1(x) S2: R3(x); R2(x); R1(x); W2(x); W1(x) S3: R2(x); W2(x); R3(x); R1(x); W1(x)		2				
313	7	Consider below given schedule to draw the precedence Graph for it and also write the order of execution of the transaction. S12: r2(x); w2(x); r3(x); r1(x); w1(x)		2				
314	7	Test Serializability for the following schedule: 1.r1(X);r3(X);w1(X);r2(X);w3(X) Conclude that the given Schedule is Serializable or not.		5				
315	7	Consider the following transaction involving two bank accounts x and y. read (x); x := x – 50 ; write (x) ; read (y) ; y:= y + 50 ; write (y) The constraint that the sum of the accounts x and y should remain constant is that of _____.	B	1	Atomicity	Consistency	Isolation	Durability
316	7	Let ri(z) and wi(z) denote read and write operations respectively on a data item z by a transaction Ti. Consider the following two schedules. S1 : r1(x) r1(y) r2(x) r2(y) w2(y) w1(x) S2 : r1(x) r2(x) r2(y) w2(y) r1(y) w1(x) Which one of the following options is correct?	B	1	S1 is conflict serializable and S2 is not conflict serializable	S1 is not conflict serializable and S2 is conflict serializable	Both S1 and S2 are conflict serializable	Neither S1 nor S2 is conflict serializable
317	7	Consider the following transaction with data items P and Q initialized to zero: T1 : read (P) read(Q) if P = 0 then Q : = Q + 1; write (Q) ; T2 : read (Q) ; read (P) ; if Q = 0 then P : = P + 1 ; write (P) ; Any non-serial interleaving of T1 and T2 for concurrent execution leads to ___.	D	1	A serializable schedule	A conflict serializable schedule	A schedule for which a precedence graph cannot be drawn	A schedule that is not conflict serializable
318	7	Consider the following log sequence of two transactions on a bank account, with initial balance 12000, that transfer 2000 to a mortgage payment and then apply a 5% interest. 1) T1 start 2) T1 B old =12000 new =10000 3) T1 M old =0 new =2000 4) T1 commit 5) T2 start 6) T2 B old =10000 new =10500 7) T2 commit Suppose the database system crashes just before log record 7 is written. When the system is restarted, which one statement is true of the recovery procedure?	B	1	We must redo log record 6 to set B to 10500	We must undo log record 6 to set B to 10000 and then redo log records 2 and 3	We need not redo log records 2 and 3 because transaction T1 has committed	We can apply redo and undo operations in arbitrary order because they are idempotent

319	7	Consider three data items A, B, and C, and the following execution schedule of transactions T1, T2 and T3. In the diagram, R(A), R(B), and R(C) denotes read operation on data item A, B and C respectively while W(A), W(B), and W(C) denotes the write operation on data item on A, B and C respectively. Which of the given statement is correct?
		T1 T2 T3
		      R(A)
		R(B)
		   W(C)
		      R(C)
		W(B)
			A	1	The schedule is both view serializable and conflict serializable.	The schedule is conflict serializable but not view serializable.	The schedule is view serializable but not conflict serializable.	The schedule is neither view serializable and nor conflict serializable.

320	7	consider the schedule S given below. S: R1(X), W2(X), W1(X) Which of the following statement is correct?	C	1	S is view-serializable but not conflict-serializable.	S is conflict serializable but not view serializable.	S is neither view nor conflict serializable.	S is both view and conflict serializable.

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Database Management System (DBMS)
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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
321	7	Consider the following log sequence of two transactions on a bank account, with initial balance 12000, that transfer 2000 to a mortgage payment and then apply a 5% interest. 1) T1 start 2) T1 B old =12000 new =10000 3) T1 M old =0 new =2000 4) T1 commit 5) T2 start 6) T2 B old =10000 new =10500 7) T2 commit	B	1	We must redo log record 6 to set B to 10500	We must undo log record 6 to set B to 10000 and then redo log records 2 and 3	We need not redo log records 2 and 3 because transaction T1 has committed	We can apply redo and undo operations in arbitrary order because they are idempotent
322	7	Consider a simple checkpointing protocol and the following set of operations in the log. <T4,start>; <T4, y, 2, 3>; <T1,start>; <T4,commit>; <T1, z, 5, 7>; (checkpoint); <T2,start>; <T2, x, 1, 9>; <T2,commit>; <T3,start>; <T3, z, 7, 2>; If a crash happens now and the system tries to recover using both undo and redo operations, what are the contents of the undo list and the redo list?	A	1	Undo: T3, T1; Redo: T2	Undo: T3, T1; Redo: T2, T4	Undo: none; Redo: T2, T4, T3; T1	Undo: T3, T1, T4; Redo: T2
323	7	Consider the given log record. <T1 Start> <T1, A, 100, 200> <T1 Commit> Checkpoint1 <T2 Start> <T2, X,100,50> <T2 Abort> <T3 Start> <T3,Y,200,250> <T3,Z,500,450> System Failure	A	1	X=100, Y=200, Z=500	X=50, Y=200, Z=500	X=100, Y=250, Z=450	X=50, Y=250, Z=450
324	7	Consider the following log sequence of two transactions on a bank accounts. Consider initial balance of account A is 2000, B is 3000, C is 4000. Consider the log given below system is using deferred database modification. 1) <T1 start > 2) <T1 , A , 2500 > 3) <T1 , B , 2500 > 4) <T1 commit > 5) < T2 start > 6) < T2 , A , 2750 > 7) < T2 , B , 2250 > 8) < T2 , C , 3500 > 9) <T2 commit > Suppose the database system crashes just before log record 9 is written. When the system is restarted, which one statement is true of the recovery procedure?	A	1	A=2500 , B=2500, C=4000	A=2750 , B=2250, C=4000	A=2000, B=3000, C=4000	A=2500 , B=2500, C=3500
325	7	Suppose system is using immediate database modification with checkpoint to maintain log for recovery from system crash. Following is snapshot of log: <t1, start> <t1, a, 100, 90> <t3, start> <t3, b, 400, 500> <t1, commit> <t3, abort> <checkpoint> <t4, start> <t4, C, 50, 500> <t2, start> <t2, D, 70, 80> <t4, commit> System Crash What actions will be taken by recovery manager to recover from system crash?	B	1	Redo – t1, t3, t4 Undo – t2	Ignore – t1,t3 Redo – t4 Undo- t2	Redo – t2	Ignore – t1,t3, t4

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
326	7	Consider the following log sequence of two transactions on a bank account, with initial balance 12000, that transfer 2000 to a mortgage payment and then apply a 5% interest. 1) T1 start 2) T1 B old =12000 new =10000 3) T1 M old =0 new =2000 4) T1 commit 5) T2 start 6) T2 B old =10000 new =10500 7) T2 commit Suppose the database system crashes just before log record 7 is written. When the system is restarted, which one statement is true of the recovery procedure if the immediate Database Modification is used?	B	1	We must redo log record 6 to set B to 10500	We must undo log record 6 to set B to 10000 and then redo log records 2 and 3.	We need not redo log records 2 and 3 because transaction T1 has committed.	We can apply redo and undo operations in arbitrary order because they are idempotent
327	7	Consider the following log sequence of two transactions on a bank accounts. Consider initial balance of account A is 12000, B is 10, C is 1200 , D is 1100 and E is 1200. 1) T1 start 2) T1 A_old =12000 A_new =10000 3) T1 B_old =10 B_new =2000 4) T1 C_old =1200 C_new =5000 5) T1 commit 6) T2 start 7) T2 A_old =10000 A_new =10500 8) T2 D_old =1100 D_new =1500 9) T2 commit Suppose the database system crashes just before log record 9 is written. When the system is restarted, which one statement is true of the recovery procedure?	D	1	A=12000 , B=10, C=1200 , D=1100, E=1200	A=10000 , B=2000, C=5000 , D=1500	A=10500 , B=2000, C=5000 , D=1500	A=10000 , B=2000, C=5000 , D=1100
328	7	Check whether the given schedule S is conflict serializable or not- 		2				
329	7	Check whether the given schedule S is view serializable or not. If yes, then give the serial schedule. 		3				
330	7	Test Serializability for the following schedule and also draw the precedence graph: r3(X);r2(X);w3(X);r1(X);w1(X) Conclude that the given Schedule is Serializable or not?		3				
331	7	Which of the following occurs when one transaction reads a changed record that has not been committed to the database?	A	1	Dirty read	Consistent read	Lost Update	repeatable read
332	7	If a schedule S can be transformed into a schedule S' by a series of swaps of non-conflicting instructions, then S and S' are:	C	1	Non conflict equivalent	Atomic equivalent	Conflict equivalent	Isolation equivalent
333	7	Which of the following are TCL commands?	D	1	UPDATE and TRUNCATE	GRANT and REVOKE	SELECT and INSERT	ROLLBACK and SAVEPOINT
334	8	Which of the following statements contains an error?	D	1	Select * from emp where empid = 10003;	Select empid from emp where empid = 10006;	Select empid from emp;	Select empid where empid = 1009 and lastname = 'GELLER';
335	8	If you don't specify ASC or DESC after a SQL ORDER BY clause, the following is used by default _____	A	1	ASC	DESC	There is no default value	None of the mentioned
336	8	Which clause should be used to exclude group results?	B	1	WHERE	HAVING	RESTRICT	GROUP BY

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
337	8	We can test for the nonexistence of tuples in a subquery by using the _____ .	B	1	Not exist	Not exists	Exist	Exists
338	8	Which of the following statements are TRUE regarding subqueries?	D	1	A subquery can retrieve zero or more rows	A subquery can appear on either side of a comparison operator	There is no limit on the number of subquery levels in the WHERE clause of a SELECT statement	Both A and B
339	8	With SQL, how can you return all the records from a table named "Persons" sorted descending by "FirstName"?	D	1	SELECT * FROM Persons SORT BY 'FirstName' DESC	SELECT * FROM Persons ORDER FirstName DESC	SELECT * FROM Persons SORT 'FirstName' DESC	SELECT * FROM Persons ORDER BY FirstName DESC
340	8	What is a correlated sub-query?	B	1	An independent query that uses the correlation name of another independent query.	A sub-query that uses the correlation name of an outer query	A sub-query that substitutes the names of the outer query	A sub-query that does not depend on its outer query's correlation names
341	8	What is the significance of "ORDER BY" in the following MySQL statement? SELECT emp_id, fname, lname FROM person ORDER BY emp_id;	A	1	Data of emp_id will be sorted in ascending order	Data of emp_id will be sorted in descending order	Data will not be sorted	None of these
342	8	Student (sid, sch roll no, sname, saddress) School (sch id, sch name, sch address, sch phone) Enrol(sch id ,sch roll no, erollno, examname) ExmResult(erollno, examname, marks) What does the following SQL query output? SELECT sch name, COUNT (*) FROM School , Enrol , ExmResult WHERE sch id = school.sch id AND Enrol.examname = ExmResult.examname AND Enrol.erollno = exmResult.erollno AND marks = 100 AND sch id IN (SELECT sch id FROM student GROUP BY sch id HAVING COUNT (*) > 200)	D	1	For each school with more than 200 students appearing in exams, the name of the school and the number of 100s scored by its students	For each school with more than 200 students in it, the name of the school and the number of 100s scored by its students	For each school with more than 200 students in it, the name of the school and the number of its students scoring 100 in at least one exam	Nothing, the query has an error
343	8	Which join refers to join records from the Right table that have no matching key in the left table are include in the result set:	B	1	Left outer join	Right outer join	Full outer join	Half outer join
344	8	Which is true fro ANY and ALL keyword in SQL?	C	1	ANY and ALL operators are used with WHERE or HAVING.	ANY and ALL operate on subqueries that return multiple values.	Both A. and B.	None of mentioned
345	8	Syntax for creating views is _____	A	1	CREATE VIEW AS SELECT	CREATE VIEW AS UPDATE	DROP VIEW AS SELECT	CREATE VIEW AS UPDATE
346	8	Which of the following command makes the updates performed by the transaction permanent in the database?	B	1	ROLLBACK	COMMIT	TRUNCATE	DELETE
347	8	Group by - Having clause is placed before _____ clause and after _____ clause in SQL statement. (Select option with correct sequence to fill blanks.)	A	1	Order By, Where	Where, Order By	From, Where	Where, From
348	8	Which TCL command undo all the updates performed by the SQL in the transaction?	A	1	ROLLBACK	COMMIT	TRUNCATE	DELETE
349	8	Where subqueries can not be used?	B	1	Field names in the SELECT statement	The WHERE clause only in the SELECT statement	The WHERE clause in SELECT as well as all DML statements	The FROM clause in the SELECT statement
350	8	Which of the following operators cannot be used in a sub-query?	A	1	AND	<	>	<>
351	8	we have following relations: employees(employee_id,first_name,last_name,email,salary,department_id) departments(department_id,department_name,location_id) (1)find the employees who have the highest salary. (2)find all employees who salaries are greater than the average salary of all employees. (3) find the lowest salary by department. (4) the average salary of every department.		4				

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
352	8	we have following relations: Supplier(S#,sname,status,city) Parts(P#,pname,color,weight,city) SP(S#,P#,quantity) Answer the following queries in SQL. (1) Find s# of supplier who supplies 'red' part. (2) Count number of supplier who supplies 'red' part. (3) Sort the supplier table by sname?		3				
353	8	we have following relations EMP(empno, ename, jobtitle, manager, hiredate, salary, deptno) DEPT(deptno, dname,location) Answer the following queries in SQL. 1) Find the Employees who are working in Smith's department 2) Find the Employees who get salary more than Allen's salary. 3) Display department number along with the number of employees which belongs to that department number.		3				
354	8	Write queries for the following tables: T1 (Empno, Ename , Salary, Designation) T2 (Empno, Deptno.) (1) Display the Deptno in which Employee Seeta is working. (2) Display Empno, Ename, Deptno and Deptname.		2				
355	8	Consider following schema and write SQL for given statements. Student (RollNo, Name, DeptCode, City) Department (DeptCode, DeptName) Result (RollNo, Semester, SPI) 1. List out the RollNo, Name along with SPI of Student. 2. Display student name who got highest SPI in semester 1. 3. Display the list of students whose DeptCode is 5, 6,7,10.		3				
356	8	Consider the relation Database. Person(SSN, name, city) Car(license_no, year, model, SSN) Accident(drive_no, SSN, license_no, accidentyear, damage_amt) 1) Find the name of driver who did not have an accident in 'Delhi'. 2) Find the cars sold in 2006 and whose owner are from vadodara. 3) How many different models of car are used by Mr.abc.		3				
357	8	Consider following schema and write SQL for given statements. worker (id,firstname,lastname,salary,joining_date,dept) bonus(id,bonus_date,amount) 1. Find firstname and lastname of worker whose amount is greater than 2400. 2. List out salary of worker who got bonus .		2				
358	8	Consider following schema and write SQL for given statements. title (id,designation,DOJ) bonus(id,bonus_date,amount) 1. List out bonus id whose designation is MANAGER . 2. List out id's whose bonus amount at most 4000 and designation is admin .		2				
359	8	For given relation: Employee(eid, ename, address,deptname ,salary) Project(eid, pid, pname, location) Answer the following SQL queries in SQL: (1) Display name and salary of employee who is taking maximum salary. (2) Display highest salary department wise and name of employee who is taking that salary. (3) Find details of employee who works on a pid equal to 10.		3				
360	8	Consider the following student relation: Student(name,rollno,marks,percentage,address,dob) Create an updatable view from relation Student with fields name,rollno,percentage		1				

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
361	8	Write SQL queries for the following. Employee (EID, Name, Age, Salary, Country) Department (DID, D_Name, EID) (1) Create a view Emp_India which contains the name, age and salary of indian employees. (2) Display all the employee name in capital letters along with department name who are working neither in 'HR' Department nor earns more than 50000.		2				
362	9	Which of the following is used to input the entry and give the result in a variable in a procedure?	D	1	Put and get	Get and put	Out and In	In and out
363	9	The format for compound statement is	D	1	Begin ……. end	Begin atomic……. end	Begin ……. repeat	Both Begin ……. end and Begin atomic……. end
364	9	A stored procedure in SQL is a_____	B	1	Block of functions	Group of Transact-SQL statements compiled into a single execution plan.	Group of distinct SQL statements.	None of the mentioned
365	9	Temporary stored procedures are stored in _____ database.	D	1	Master	Model	User specific	Tempdb
366	9	A _____ is a special kind of a store procedure that executes in response to certain action on the table like insertion, deletion or updation of data.	B	1	Procedures	Triggers	Functions	None of the mentioned
367	9	Triggers are supported in	C	1	Delete	Update	Views	All of the mentioned
368	9	What are the after triggers?	B	1	Triggers generated after a particular operation	These triggers run after an insert, update or delete on a table	These triggers run after an insert, views, update or delete on a table	All of the mentioned
369	9	The variables in the triggers are declared using	B	1	-	@	/	/ @
370	9	Which of the following is NOT an Oracle-supported trigger?	B	1	BEFORE	DURING	AFTER	INSTEAD OF
371	9	What of the following are types of triggers?	C	1	Define, Create	Drop, Comment	Insert, Update, Delete	All of the mentioned
372	9	Triggers _____ enabled or disabled	A	1	Can be	Cannot be	Ought to be	Always
373	9	What is the symbol for assignment operator in PL/SQL?	C	1	==	=	:=	_=
374	9	What is the symbol for the operator used to compare equality between two variables in PL/SQL?	B	1	==	=	:=	_=

375	9	What is the output of the following PL/SQL block?
		DECLARE
		  a number(3) := 100;
		  b number(3) := 200;
		BEGIN
		  IF(a = 100) THEN
		    IF(b <> 200) THEN
		      dbms_output.put_line(b);
		    END IF;
		  END IF;
		  dbms_output.put_line(a);
		END;
			A	1	100	200	300	400

376	9	What will be printed by this procedure?
		DECLARE
		  a number;
		PROCEDURE squareNum(x IN OUT number) IS
		BEGIN
		  x := x * x;
		END;
		BEGIN
		  a:= 5;
		  squareNum(a);
		  dbms_output.put_line(a);
		END;
			C	1	5	10	25	50

377	9	What is the difference between a PL/SQL function and a PL/SQL Procedure?	D	1	There is no difference	A procedure can return more than variable whereas a function can return only one variable	A function can be called through an SQL SELECT statement but a procedure cannot.	Both B and C

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
378	9	THE _____ clause specifies the table name on which the trigger is to be attached.	A	1	For	On	None	In
379	9	What are AFTER triggers?	B	1	Triggers generated after a particular operation	These triggers run after an insert, update or delete on a table	These triggers run after an insert, views, update or delete on a table	Triggers that run after other triggers are over
380	9	PL/SQL function must contain a –	C	1	Follow Statement	GOTO statement	Return Statement	Null Statement
381	9	In order to remove a PL/SQL function, which statement is used?	D	1	REMOVE FUNCTION	DELETE FUNCTION	ERASE FUNCTION	DROP FUNCTION
382	9	An SQL _____ refers to a program that retrieves and processes one row at a time, based on the results of the SQL statement.	A	1	Cursor	Function	Procedure	View
383	9	Which of the following PL/SQL cursors is automatically created?	A	1	Implicit	Explicit	Exaggerate	Oversplit
384	9	Which of the following is/are implicit cursor/s in PL/SQL?	D	1	%FOUND	%ROWCOUNT	%ISOPEN	All of the mentioned
385	9	Which cursor statement is used to place the content of the current row into variables?	A	1	fetch	get	open	close
386	9	Which of the following statements is/are correct?	D	1	The THEN and NOW tables are the virtual tables that are available during the database trigger execution.	Only the NOW.column is available for insert-related triggers.	Only the THEN.column values are available for the DELETE-related triggers.	All of them
387	9	Which of the following statements is/are correct?	D	1	%TYPE: This declaration is used for the purpose of anchoring by providing the data type of any variable, column, or constant.	%ROWTYPE: This is used for declaring a variable that has the same data type and size as that of a row in the table.	None of them	Both A and B
388	9	Which of the following statements is/are incorrect?	A	1	When a subquery returns more than one row, an implicit cursor is used.	When a subquery returns more than one row, an explicit cursor is used.	An implicit cursor is used for all DML operations like DECLARE, OPEN, FETCH, CLOSE.	None of these

389	9	What will be the output of following PL/SQL block?
		DECLARE
		 a number (3): = 100;
		BEGIN
		IF (a = 50) THEN
		 dbms_output.put_line ('Value of a is 10');
		 ELSEIF (a = 75) THEN
		 dbms_output.put_line ('Value of a is 20');
		 ELSE
		 dbms_output.put_line ('None of the values is matching');
		 END IF;
		 dbms_output.put_line ('Exact value of a is: '|| a);
		END;
			D	1	It will print 'values of a is 10'	It will print 'values of a is 20'	It will print 'values of a is 100'	It has syntax error

390	9	In the PL/SQL block below, how many rows will be inserted in the messages table?
		DECLARE
		Start1 NUMBER: = 2;
		end1 NUMBER: = 100;
		BEGIN
		FOR i IN start1. . end1 LOOP
		INSERT INTO messages VALUES (start1);
		END LOOP;
		END;
			B	1	0	99	1	100

391	9	In order to remove the PL/SQL function, which function is used?	C	1	REMOVE FUNCTION	DELTE FUNCTION	DROP FUNCTION	ERASE FUNCTION
392	9	A _____ is a special kind of a store procedure that executes in response to certain action on the table like insertion, deletion or updating of data.	B	1	Implicit Cursor	Trigger	Stored Function	Stored Procedure

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
393	9	In the SQL Cursor, which attribute is TRUE when a cursor has some remaining rows to fetch, and FALSE when a cursor has no rows left to fetch?	B	1	%ROWCOUNT	%FOUND	%NOTFOUND	%ISOPEN
394	9	The correct syntax to declare PL/SQL variable is –	C	1	variable_name [CONSTANT] datatype [NULL] [:= | DEFAULT initial_value]	datatype [CONSTANT] variable_name [NOT NULL] [:= | DEFAULT initial_value]	variable_name [CONSTANT] datatype [NOT NULL] [:= | DEFAULT initial_value]	datatype [CONSTANT] variable_name [NULL] [:= | DEFAULT initial_value]
395	9	Which of the following attributes of cursor is used to determine whether a cursor contains tuples after the execution of a FETCH statement.?	A	1	%FOUND	%NOTFOUND	%ISCLOSE	%ISOPEN
396	9	Write a PL/SQL block to print the sum of even numbers from 1 to 100.		5				
397	9	Write a PL/SQL block to print the sum of odd numbers from 1 to 100.		5				
398	9	Define PL/SQL. Write PL/SQL block to print sum of even numbers between 1 to 20.		5				
399	9	Write A PL/SQL block to print the sum of Numbers from 1 to 50.		5				
400	9	Write A PL/SQL block to print the given number is Odd or Even		5				
401	9	Differentiate Implicit Cursor & Explicit Cursor..		4				
402	9	Write a PL/SQL cursor to display the names and branch of all students from the STUDENT relation.		5				
403	9	Write a PL/SQL block using explicit cursor that will display the customer name, the fixed deposit number and the fixed deposit amount of the first 5 customers holding the highest amount in fixed deposits. Use following database: cust_mstr (custno, name, occupation) fd_dtls (fd_ser_no, fd_no, type, period, opndt, duedt, amt, dueamt) acct_fd_cust_dtls (acct_fd_no, custno)		5				
404	9	A stored function is created to perform the acct_no check operation. f_ChkAcctNo() is the name of function which accepts a variable acct_no from the user and returns value 0 if acct_no does not exist or 1 if acct_no exists. Write a PL/SQL block that performs transaction(i.e., deposit/withdrawal)on account. If account exists, change balance depending on the transaction amount to be deposited or withdrawal. Assume account table with fields – account number, name, type and balance.		5				
405	9	Write a PL/SQL program for inserting even numbers in EVEN table and odd number in ODD table from number 1 to 50.		5				
406	9	Write PL/SQL block to print whether the given number is Armstrong number or not.		5				
407	9	Write a Stored procedure to Insert Data in Student_Detail [Student_id,Name,Age,Class] table.		5				
408	9	Write a PL/SQL program using WHILE loop for calculating the average of the numbers entered by user. Stop the entry of numbers whenever the user enters the number 0.		5				
409	9	Write a PL/SQL procedure for selecting some records from the database using some parameters as filters.		3				
410	9	Write a PL/SQL code to count the number of Sundays between the two inputted dates.		7				
411	9	Write PL/SQL code block to increment the employee's salary by 1000 whose employee_id is 102 from the given table below.		5				
412	9	Write a PL/SQL code to find whether a given string is palindrome or not.		5				
413	9	Write PL/SQL program to convert each digit of a given number into its corresponding word format.		5				
414	9	Write PL/SQL program to find the sum of digits of a number.		5				
415	10	_____ refers to the range of activities involved in extracting data from a database	B	1	Query Optimization	Query Processing	Parsing	Query Evaluation
416	10	The steps involved in processing _____	D	1	Parsing and translation	Optimization	Evaluation	All of Given
417	10	In query processing, system must first translate given query into which form?	A	1	Internal form	Physical form	high level form	New form
418	10	In generating the internal form of the query, the parser checks _____	D	1	Syntax of query	Verifies relation name	None of given	Both of Given

L.J Institute of Engineering and Technology, Ahmedabad.
Database Management System (DBMS)
Question Bank (SEM-II-2023 CE/IT/CSD/AIML/AIDS/RAI/CS&IT/CSE/CST/CEA Engineering)

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
419	10	Match the following: A) evaluation primitive B) query-execution plan c) query-execution engine 1) takes a query-evaluation plan, executes that plan, and returns the answers to the query 2) A relationalalgebra operation annotated with instructions on how to evaluate it 3)A sequence of primitive operations that can be used to evaluate a query	A	1	A-2, B-3, C-1	A-1, B-3, C-2	A-3, B-1, C-2	A-3, B-2, C-1
420	10	Which statement(S) is/are true? A) A query could be expressed in SQL several different ways. B) SQL query can be translated into a relationalalgebra expression in one of several ways. C) There are several ways to evaluate relational-algebra expressions D) We can execute each relational-algebra operation by one of several different algorithms.	D	1	Only A,B	Only A,C,D	Only D	All A,B,C,D
421	10	_____ is the process of selecting the most efficient query-evaluation plan from among the many strategies usually possible for processing a given query, especially if the query is complex.	C	1	Query Processing	Regulary Expression	Query Optimization	SQL
422	10	Query-evaluation plan that minimizes the cost of query evaluation is a duty of _____	A	1	System	User	Database Admin	Programmer
423	10	_____ defines exactly what algorithm should be used for each operation, and how the execution of the operations should be coordinated	B	1	Query Engine	Evaluation plan	Query Optimizer Engine	Expression tree
424	10	Given a relational-algebra expression, it is the job of _____ to come up with _____ that computes the same result as the given expression, and is the least-costly way of generating the result	C	1	query optimizer, expression tree	query evaluation engine, expression tree	query optimizer, query-evaluation plan	query evaluation engine, query evaluation plan
425	10	A user executes a query which the ___ system uses to generate the internal form of the query. In addition to checking the syntax of the query, the ___ verifies the name of the relation in the database, then the tuple, then the attribute value.	A	1	parser, parser	parser, translation	translation, transla	evaluation, parser
426	10	What is true about query optimization?	D	1	The cost of evalua	The evaluation pla	An efficient query	a, b and c
427	10	If the query was expressed in terms of a view, the _____ phase also replaces all uses of the view by the relational-algebra expression that defines the view.	C	1	Pairing	Parsing	Translation	Evaluation
428	10	Evaluation Primitive(s) is/are made up of:	A	1	Relational algebra	Annotation of Inst	QEP	PipelIne
429	10	A sequence of primitive operations that can be used to evaluate a query is known as_____	A	1	Query Evaluation	Optimization char	Query Processing	Parsing query
430	10	The optimizer needs to generate alternative plans that produce the _____ as the given expression, and to choose the least-costly one.	D	1	partially different	rows as result	columns as result	same result
431	10	Grants privileges on SQL authorization mechanism works on_____	D	1	Entire relation	Specified tuples	Specified attribute	Both A and B
432	10	which statement is used to revoke an authorization?	A	1	Revoke	Modify	Alter	Define
433	10	Collections of operations that form a single logical unit of work are called _____	D	1	Views	Networks	Units	Transactions
434	10	Authentication refers to :	D	1	methods of restricting user access to system	Establishing Identity	controlling the operation on the data	all of the above
435	10	Prevention of access to database by Unauthorized Users is refered as	C	1	Integrity	Productivity	Security	Reliability
436	10	_____ may be transmissible from system to system	A	1	Authentication	Access Control	Security	None of the Above
437	10	In authorization graph if DBA provides authorization to u1 which in turn gives to u2 which of the following is correct ?	C	1	If DBA revokes authorization from u1 then u2 authorization is also revoked .	If u1 revokes authorization from u2 then u2 authorization is revoked	If DBA & u1 revokes authorization from u1 then u2 authorization is also revoked	If u2 revokes authorization then u1 authorization is revoked
438	10	_____ is a technique of granting permission to authorized user to carry out particular transaction	D	1	Integrity	Productivity	Security	Authorization
439	10	Which form of Authorization allows the user only to read data?	B	1	Update Access	Read Access	Insert Access	Both A and B
440	10	Which of the following is the Form of Authorization Access?	D	1	Read Access	Update Access	Delete Access	All of the above

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Sr No	Unit Number	Question_Text	MCQ Answer	Marks	Option A	Option B	Option C	Option D
441	10	Which Role in Authorization can execute some data administration command like restore or Upgrade a database?	A	1	System Administrator	System Control	Both A & B	System Monitor
442	10	With the Help of _____,User can check his Credentials by him self by entering login id & Password in any Examination System.	A	1	Authentication	Productivity	Security	Authorization
443	10	Using Which ,the user can take snapshots of database?	B	1	System Control	System Monitor	System Maintenance	Both A & B
444	10	Which is the lower level of System Control Authority?	A	1	System Maintenance	System Administrator	System Control	System Monitor
445	10	The Usual way of supplying access control to a database is depending on _____&_____ priviledges within database	A	1	Granting & Revoking	Logging & Logging off	Update & Tampering	Both A & B
446	10	What is used if any tampering with the database is suspected?	B	1	Database Locking	Database Audit	Database Updation	Database Prevention
447	10	We can recover the lost transaction using_____	D	1	System Control	System Monitor	Authorization	Audit trail
448	10	Which form of access control enables data owners to extend access rights to other logons?	B	1	MAC	DAC	Role-based (RBAC)	Rule-based (RBAC)
449	10	A security manager is setting up resource permissions in an application. The security manager has discovered that he can establish objects that contain access permissions, and then assign individual users to those objects. The access control model that most closely resembles this is:	D	1	Access matrix	Mandatory access control (MAC)	Discretionary access control (DAC)	Role based access control (RBAC)
450	10	What is Used to define Access Permission?	A	1	Access matrix	DAC	System Control	Authorization
451	10	_____is the default access Control mechanism for most desktop operating system	C	1	MAC	Role based access control (RBAC)	DAC	Rule-based (RBAC)
452	10	Which Security Strategy is generally used in government and military services?	A	1	MAC	Role based access control (RBAC)	DAC	Rule-based (RBAC)
453	10	Role Based Access Control is also known as_____	B	1	Rule-based (RBAC)	Non discretionary access control	discretionary access control	None of the above
454	10	Which one of the Following is True for DAC ? i. Users can transfer their object ownership to another user. ii. The access type of other users can be determined by the user. iii. Authorization failure can restrict the user access after several failed attempts. iv. Unauthorized users will be blind to object characteristics called file size, directory path, and file name.	D	1	I and II	I and IV	I,II and III	I,II,III and IV
455	10	_____ has an enforced operating system that can label and delineate incoming application data.	A	1	MAC	Role based access control (RBAC)	DAC	Rule-based (RBAC)
456	10	Under _____access is allowed or denied to resource objects based on a set of rules defined by a system administrator	D	1	MAC	Role based access control (RBAC)	DAC	Rule-based (RBAC)
457	10	When a particular account or group attempts to access a resource, the operating system checks the rules contained in the _____ for that object.	C	1	System Control List	Mandatory access control List (MACL)	Access Control Lists (ACL)	Authorization List
458	10	Role Based Access Control grants access based on a user's role and implements key security principles such as _____ and_____	A	1	least privilege and separation of privilege	position and location	central authority regulations and user-specified rules	assigning access rights and user-specified rules
459	10	In _____ key encryption, messages are encrypted by sender with _____ key and can be decrypted by receiver using _____ key.	B	1	Symmetric, Public, Personal	Asymmetric, Public, Private	Symmetric, Personal, Public	Asymmetric, Personal, Public
460	10	Rule1: Subject given security level may not read any object at higher security level. Rule2: Subject given security level may not write any object at lower security level. Above stated rules are respectively identified as which property?	C	1	Integrity and Security	Security and Integrity	Security and Star	Star and Security

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461	10	Which statements are true for Role based access control (RBAC) rules ? 1) It restricts database access based on a person's role within an organization. 2) The roles in RBAC refer to the levels of access that employees have to the Network. 3)Employees are only allowed to access the information necessary to effectively perform their job duties. 4) Lower-level employees usually do not have access to sensitive data if they do not need it to fulfil their responsibilities.	D	1	Only 1 and 2	Only 1 and 3	Only 3 and 4	All 1,2,3 and 4
462	10	Encryption is a technique of …….. data, so that only authorized user can understand (read) it. After encryption the plaintext becomes …….. In symmetric key schemes, the encryption and decryption keys are the …….	A	1	Encoding , Ciphertext , Same	Encoding , Hypertext , Same	Decoding ,Ciphertext , Same	Encoding , Hypertext , Different
463	10	With the Help of _.................,User can check his Credentials by him self by entering login id & Password in any Examination System	A	1	Authentication	Security	Authorization	System control
464	10	Which statements are true? 1) Data security deals with protection of data. 2) Data integrity deals with the validity of data. 3) Data integrity is making sure the data is correct and not corrupt. 4) Data security refers to the making sure that data is accessed by its intended users, thus ensuring the privacy and protection of data.	D	1	Only 1 and 2	Only 1 and 3	Only 2 and 3	all statements are true
465	10	Given figure is identified as:	B	1	Encryption Matrix	Access Control Matrix	Access Control List	Audit Matrix

	O1	O2	O3	O4	O5	O6
S1	orw	r	rw	o	R	rwx
S2	r	orwx				r
S3	rwx			r	R	r

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