INSTRUCTIONS:

1. **All Questions are compulsory**
2. **Programming Language: SQL**
3. **Paper is divided into 2 sections i.e TYPE A, TYPE B**
4. **Type A contains Conceptual Based Questions of 20 Marks**
5. **Type B contains Application Based Questions of 15 Marks**

TYPE A (Conceptual Based Questions) 20 Marks

Q1. What do you mean by Candidate Key? — 1

Q2. Write a query to display names of employee whose name contains 'A' as third alphabet. (Table: Empl, Columns: Name) — 1

Q3. Define the following: — 2

    i) Virtual Reality?
    ii) WoT

Q4. What do you mean by middleware? What is the role in Grid Computing? — 2

Q5. Five friends plan to try a start-up. However, they have a limited budget and limited computer infrastructure. How can they avail the benefits of cloud services to launch their start-up? — 1

Q6. Write a query to display the name, job title, and salary of Employee who don't have manager. (Table: Empl , Columns: name, job_title, salary) — 1

Q7. Write a query on the customer table whose output will exclude all customer with a rating <=100 unless they are located in Shimla.
(Table: Customer, Columns: City, rating) — 1

Q8. What do you mean by Blockchain Technology? — 1

Q9. How is IAAS different from PAAS? — 2

Q10. Create the table Employee based on the following table instance chart — 2

Column Name	ID	First_Name	Last_Name	Dept_Id
Data Type	Integer	Varchar	Varchar	Integer
Length	8	25	25	8
Constraint type	Primary key Not null			Not null

Q11. Write a query to add a constraint (NN Grade) in table Employee that declares column Grade Not Null (Table: Employee, Column: Grade) — 1

Q12. Write a query to drop the column CustomerIncomeGroup from table Customer. — 1

Q13. Write a query to add one column Email of data type varchar and size 30 to the table Customer — 1

Q14. Give any three differences between Alter and Update command — 3

TYPE B (Application Based Questions) 15 Marks

Q15. Table: Club   3

Coach_id	Coach_Name	Age	Sports	DateofApp	Pay	Sex
1	KUKREJA	35	KARATE	27/03/1996	1000	M
2	RAVINA	34	KARATE	20/01/1998	1200	F
3	KARAN	34	SQUASH	19/02/1998	2000	M
4	TARUN	33	BASKETBALL	01/01/1998	1500	M
5	ZUBIN	36	SWIMMING	24/02/1998	800	M

Write a query for the following

    i)   To show all information about the swimming coaches in the club
    ii)   To list names of all coaches with their date of appointment (DATEofApp) in descending order
    iii)   To display a report showing coachname, pay,age and bonus (15% of pay) for all the coaches.

Q16. Table: Student   4

No	Name	Stipend	Stream	AvgMark	Grade	Class
1	Karan	400.00	Medical	78.5	B	12B
2	Divakar	450.00	Commerce	89.2	A	11C
3	Divya	300.00	Commerce	68.6	C	12C
4	Arun	350.00	Humanities	73.1	B	12C
5	Sabina	500.00	Nonmedical	90.6	A	11A
6	John	400.00	Medical	75.4	B	12B
7	Robert	250.00	Humanities	64.4	C	11A
8	Rubina	450.00	Medical	75.4	B	12B

    i)   Select all the nonmedical stream students from table STUDENT
    ii)   List the names of those students who are in class 12 sorted by stipend
    iii)   List all students sorted by AvgMark in descending order
    iv)   Display a report, listing name, stipend, stream and amount of stipend received in a year assuming that the stipend is paid every month.

Q17. Write a query to display the employee name, salary of those employee who don't have salary in the range of 2500 to 400 (Table: Empl, Columns: empl_name,salary)   1

Q18. Write a query to increase salary of employee records by 10%   1

Q19. An organization wants to create a tables EMPLOYEE,DEPENDENT to maintain following details about its employees and their dependent.   3

EMPLOYEE (AadharNumber, Name, Address, Department, EmployeeID)

DEPENDENT (EmployeeId, DependentName, Relationship)

    i)   Name the attributes of Employee, which can be used as candidate keys.
    ii)   The company wants to retrieve this details
    iii)   What is the degree of Employee and Dependant

Q20. Match the following: 3

Column A	Column B
i) You got a remainder to take medicine ii) You got a SMS alert that you forgot to lock the door iii) You turned off your LED TV from your wrist watch.	i) Home Automation ii) Smart Health iii) Smart Wearable