Brain International School
Vikas Puri, New Delhi

ASSIGNMENT NO-4
SUBJECT: INFORMATICS PRACTICES

CLASS: XI **November '26**

Section A: 2-Mark Questions

Q1. Differentiate between Degree and Cardinality of a relation with a suitable example.
Q2. What is a Candidate Key? How is it different from a Primary Key?
Q3. Define Foreign Key. Explain its role in maintaining referential integrity with an example.
Q4. Write SQL statements to do the following:
a) Create a database named SCHOOL
b) Open/ Login to the database SCHOOL
Q5. Differentiate between the DELETE and DROP TABLE commands in SQL, with one example each.
Q6. Write SQL statements to do the following:
a) Add a new column Email of type VARCHAR(30) to the table EMP
b) Delete the column Address from the table EMP
Q7. What is meant by a Relation in a database? Write any two characteristics of a relation.
Q8. Differentiate between the WHERE and ORDER BY clauses in SQL, with one example each.
Q9. What will the following query return/display? Explain why.
SELECT * FROM Student WHERE Marks > NULL;
Q10. Which clause is used to remove duplicate values from the output of a SELECT statement? Write an SQL query showing its syntax.

Section B: 3-Mark Questions

Q11. Consider the table STUDENT with the following attributes:
Roll_No, Adm_No, Name, Class, Marks, Aadhaar_No
a) Identify all possible candidate keys
b) Suggest a suitable Primary Key with reason
c) Name the alternate keys
Q12. Write an SQL command to create the table EMPLOYEE with the following structure:

Column	Data type	Constraint
EmpID	INTEGER	Primary Key
EName	VARCHAR(25)	NOT NULL
Dept	VARCHAR(20)	–
Salary	DECIMAL(8,2)	–
DOJ	DATE	–

Q13. Consider the table ITEM(ICode, IName, Price, Qty). Write SQL statements to:
a) Display all items whose price is between 500 and 2000
b) Display names of items whose name starts with the letter 'M'
c) Display all items in descending order of Price
Q14. Consider the table PRODUCT(PCode, PName, Rate, Stock). Write SQL statements to:
a) Display all products whose stock is less than 25
b) Display names of products whose name contains the letter 'a' anywhere
c) Display PName and Rate in ascending order of Rate
Q15. Differentiate between DDL and DML commands. Categorize the following commands: CREATE, DROP,

UPDATE, and INSERT.

Section C: 4-Mark Questions

Q16. Consider the table BOOK given below:

BID	BName	Author	Price	Qty	PubDate
B1	Python Basics	Aggarwal	450	12	2022-05-10
B2	Data Science	Sharma	780	5	2023-01-15
B3	SQL Made Easy	Kapoor	320	20	2021-11-02
B4	Web Design	Sharma	650	8	2023-07-21

Write SQL statements for the following:

a) Insert a new record into the table BOOK with the values: B5, Machine Learning, Verma, 899, 15, 2024-02-14

b) Increase the price of all books by 10%

c) Delete the record of the book whose BID is 'B3'

d) Change the size of the column BName to VARCHAR(40)

Q17. Consider the table CUSTOMER given below:

CID	CName	City	Amount	Purchase_Date
C1	Ayesha	Delhi	12500	2023-03-12
C2	Manav	Jaipur	8400	2023-06-25
C3	Ritika	Delhi	15600	2023-02-08
C4	Sahil	Mumbai	9700	2023-08-30

Write SQL statements for the following:

a) Insert a new record into the table CUSTOMER with the values: C5, Tarun, Pune, 11200, 2023-09-14

b) Change the city of customer 'Manav' to 'Udaipur'

c) Delete the record of the customer whose CID is 'C4'

d) Modify the datatype of the column Amount to DECIMAL(10,2)

Q18. Consider the table PATIENT given below:

PID	PName	Dept	Charges	AdmitDate	City
P01	Rohit	Cardiology	5000	2023-02-11	Delhi
P02	Sneha	Ortho	3200	2023-03-05	Noida
P03	Amit	Cardiology	7500	2023-01-20	Delhi
P04	Neha	ENT	2800	2023-04-18	Gurugram
P05	Vikas	Ortho	4100	2023-05-02	Noida

Write SQL statements for the following:

a) Display details of patients admitted after 1st March 2023

b) Display PName and Charges of patients belonging to Delhi or Noida

c) Change the department of patient 'Neha' to 'Cardiology'

d) Display the names of all patients in descending order of Charges

Q19. Consider the table HOSTEL given below:

SID	SName	Room_No	Fees	Admit_Date	Course
S01	Tanvi	101	45000	2023-04-10	Science
S02	Kabir	205	38000	2023-05-22	Commerce
S03	Ishaan	101	45000	2023-03-15	Science
S04	Meher	310	32000	2023-07-05	Humanities
S05	Arnav	205	38000	2023-06-18	Commerce

Write SQL statements for the following:

a) Display details of students admitted before 1st June 2023
b) Display SName and Fees of students of ‘Science’ or ‘Commerce’ course
c) Increase the fees of all ‘Humanities’ students by 5%
d) Display the distinct room numbers from the table

Q20. What is meant by Data Redundancy? Explain how a Relational Database Management System (RDBMS) helps minimize data redundancy across tables using a structural key framework.