WESTBERRY High School

PART TEST- IV
2024-25

Name of the student: **Date: 03.12.2024**
Grade: XII **Time: 90 min**
Subject: IP **Marks: 35**

Weightage: Series Full Concept (12 Marks)
Querying using SQL & Equi Join (12 Marks)
MySQL Revision Tour & MySQL Functions (11 Marks)

General Instructions:
This question paper is divided into 5 sections – **A, B, C, D and E**
•**Section A**, consists of 11 questions **(1 – 11).** Each question carries 1 mark.
•**Section B**, consists of 3 questions (**12 – 14**). Each question carries 2 marks.
•**Section C**, consists of 3 questions (**15 – 17**). Each question carries 3 marks.
•**Section D**, consists of 1 question (**18).** It carries 4 marks.
•**Section E**, consists of 1 question (**19).** It carries 5 marks.
•Internal choices have been given for question numbers – 13, 16, 19.

SECTION-A **11X1=11 Marks**

1. Which statement represent equi join (assuming EMP AND DEPT are table names)?
A. SELECT * FROM EMP EQ JOIN DEPT;
B. SELECT * FROM EMP CROSS JOIN DEPT;
C. SELECT * FROM EMP JOIN DEPT;
D. SELECT * FROM EMP SP JOIN DEPT;

2. What is the purpose of the ORDER BY clause in MySQL?
A. To group rows based on a condition
B. To filter rows based on conditions
C. To sort the result set in ascending or descending order
D. To combine results from multiple tables

3. Which clause is executed first, the WHERE clause or the ORDER BY clause?
A. ORDER BY
B. WHERE
C. They execute simultaneously.
D. Depends on the query optimizer.

4. Which of the following statements is valid for the GROUP BY clause?
A. It is used to filter rows.
B. It must always be used with an aggregate function.
C. It is used to group rows based on one or more columns.
D. It is used only with numeric columns.

5. State whether the following statement is True or False:
In SQL, the HAVING clause is used to apply filter on groups formed by the GROUP BY clause.

6. Which of the following command will show the last 3 rows from a Pandas Series named NP?
A. NP.Tail( ) B. NP.tail(3) C. NP.TAIL(3) D. All of the above

7. The name "Pandas" is derived from the term:
A. Panel Data B. Panel Series
C. Python Document D. Panel Data Frame

8. What will be the output of the following program ?

```
import pandas as pd
x=6
S1=pd.Series(x,index=[1,2,4,6,8,9])
```

print(S1)

(A) 1 6
2 6
4 6
6 6
8 6
9 6
dtype: int64

(B) 0 6
dtype: int64

(C) 1 2 4 6 8 9
6 6 6 6 6 6
dtype: int64

(D) None of the above

9. What will happen if you create a Pandas Series without specifying an index?
A. An error will occur.
B. The index will start from 1 by default.
C. The index will start from 0 by default.
D. The index will remain undefined.

10. Which attribute gives the data type of a Pandas Series?
A. dtype B. datatype C. type D. data

11. Assertion (A): The head() method of a Pandas Series returns the first 5 elements by default.
Reason (R): The head() method is used to display summary statistics of the Series.
Options:
A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true, but R is false.
D. A is false, but R is true.

SECTION-B **3X2=6 Marks**

12. What is the difference between the order by and group by clause when used along with the select statement. Explain with an example.

13. Consider the following tables SUPPLIER and ITEM and answer the questions that follow:

Table: SUPPLIER

SNo	SName	Area	Email
S01	Quant Computers	East	abc@gmail.com
S02	Superb Media	West	sss@hotmail.com
S03	Media Store	North	
S04	Avon Hardware	North	xyz@gmail.com
S05	AV Tech	South	tmt@hotmail.com

Table : ITEM

INo	IName	Price	SNo
N01	Mother Board	15000	S01
N02	Hard Disk	4000	S01
N03	Keyboard	800	S02
N04	Mouse	300	S01
N05	Mother Board	13000	S02
N06	Key Board	400	S03
N07	Hard Disk	4500	S03

(i) To display names of Items,SNo and Names of Suppliers supplying those items for those who have stores located in North area.

(ii) To display Names of Items, SNo, Price and corresponding names of their suppliers of all the Items in ascending order of their Price.

(OR)

Observe the given tables carefully and attempt the following questions:

Table : Bank

ACC_NO	BRANCH_NAME	AMOUNT
B-70	Downtown	5000
B-230	Redwood	6000
B-260	Perryridge	3700

Table : Customer

CUSTOMER_NAME	ACC_NO
Jones	B-170
Smith	B-230
Hayes	B-155

(i) Identify the column based on which both the tables can be related or joined. Also justify your answer.
(ii) Write a SQL query to list names of all customers with their Amount in ascending order:

14) Write the SQL functions which will perform the following operations:
(i) To display the name of the weekday for your date of birth
(ii) To convert e-mail-id to lowercase
(iii) To count the number of characters in your name
(iv) To display the first character of your name

SECTION-C **3X3=9 Marks**

15. A relation Vehicles is given below :

V_no	Type	Company	Price	Qty
AW125	Wagon	Maruti	250000	25
J0083	Jeep	Mahindra	4000000	15
S9090	SUV	Mitsubishi	2500000	18
M0892	Mini van	Datsun	1500000	26
W9760	SUV	Maruti	2500000	18
R2409	Mini van	Mahindra	350000	15

Write SQL commands to:
a. Display the average price of each type of vehicle having quantity more than 20.
b. Count the type of vehicles manufactured by each company.
c. Display the total price of all the types of vehicles.

16. Consider the following table: Vegetable

VNo	VName	Price
1	Potato	50
2	Carrot	80
3	Onion	70
4	Chilly	70

Write the outputs of the following SQL Queries:
(i) SELECT VNo*Price, Instr(VName,'t') FROM VEGETABLE;
(ii) SELECT DISTINCT (PRICE) FROM VEGETABLE;
(iii) SELECT PRICE, COUNT(*) FROM VEGETABLE GROUP BY PRICE;

(OR)

Consider the following table: Teacher

TID	VName	DOJ
T1	Mohan	2023-12-25
T2	Naresh	2020-05-07
T3	Lakshmi	2015-11-30
T4	Sunitha	2020-08-14

(i) Write a query to display the year of join of the teachers Naresh and Mohan;
(ii) Write a query to add a new column Salary with the datatype float;

(iii) Predict the output of the following SQL Query.

SELECT TID, VName from Teacher Where DOJ Between '2020-01-20' and '2022-05-07';

17. Write a program to perform the following operations on the Series Object 'Veg'.

Given Data:

Beetroot	40
Carrot	60
Drumstick	10
Brinjal	50

(i) Modify the Carrot value to 90.

(ii) Add the row "Tomato" with value 30.

(iii) Rename index "Brinjal" to "PennadaBrinjal"

SECTION-D 1X4=4 Marks

18. (a) **Consider the following Series "E", and answer the questions based on Slicing.**

E=pd.Series(['CT1','CT2','CT3','T1','PT1','PT2', 'PT3','PT4','PT5','PT6','PB1','PB2','Pra','Board'],index=['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n'])

(i) E[2:8] **(ii)** E[3:10:2] **(iii)** E[-12:10:3] **(iv)** E[10:]

(b) Predict the output of the following:

```
import pandas as pd
lst1=[10,15,20,25]
ser1=pd.Series([100,200,300])
print(lst1+lst1)
print(ser1+ser1)
```

SECTION-E 1X5=5 Marks

19. A Departmental store 'Iconic' is planning to automate its system so that they can store all the records on computer. They contacted a Software Company to make the software for the same. The company suggested that there is need of a front end and back-end software. The major challenge was to keep the record of all the items available in the store. To overcome the problem, the software company has shown the glimpses of the database and table required to resolve their problem:

Database Name: Iconic

Table Name: Garment

Attributes of the table: Gcode – Numeric, Gname – Character 25, Size - Character 5, Colour – Character 10, Price – Numeric

Consider the following records in 'Garment' table and answer the given questions:

Table: GARMENT

GCODE	GNAME	SIZE	COLOUR	PRICE
111	Tshirt	XL	Red	1400.00
112	Jeans	L	Blue	1600.00
113	Skirt	M	Black	1100.00
114	Jacket	XL	Blue	4000.00
115	Trousers	L	Brown	1500.00
116	LadiesTop	L	Pink	1200.00

i. Choose the command that will give the output as:

COLOUR
Blu
Bla
Blu
Bro

a. Select left(COLOUR,3) from GARMENT where COLOUR like "B%";

b. Select COLOUR from GARMENT where COLOUR not like "%B%";

c. Select mid(COLOUR,3) from GARMENT where COLOUR like "B%";

d. Select COLOUR from GARMENT where COLOUR = 'B%';

ii. Choose the correct command for the following purpose. To delete the record with GCode as 116

a. Delete * from GARMENT where GCode='116';
b. Delete from GARMENTS where GCode =116;
c. Delete from GARMENT where GCode =116;
d. Delete from GARMENT where GCode is '116';

iii. Give the output of : Select GName, Price from GARMENT order by Price Desc;

a.

GNAME	PRICE
Tshirt	1400.00
Jeans	1600.00
Skirt	1100.00
Jacket	4000.00
Trousers	1500.00
LadiesTop	1200.00

b.

GNAME	PRICE
Skirt	1100.00
LadiesTop	1200.00
Tshirt	1400.00
Trousers	1500.00
Jeans	1600.00
Jacket	4000.00

c.

GNAME	PRICE
Jacket	4000.00
Jeans	1600.00
Trousers	1500.00
Tshirt	1400.00
LadiesTop	1200.00
Skirt	1100.00

d.

GNAME	PRICE
Jacket	4000.00
Jeans	1600.00
LadiesTop	1200.00
Skirt	1100.00
Trousers	1500.00
Tshirt	1400.00

iv. Choose the correct command for the following purpose.
To change the colour of GARMENT with code as 116 to "Orange".

a. Update GARMENTS set COLOUR="Orange" where Gcode=116;
b. Update GARMENT set COLOUR ="Orange" where Gcode=116;
c. Update GARMENT set COLOUR ="Orange" where Gcode is "116";
d. Update GARMENT where Gcode=116 set COLOUR =Orange;

v. What is the degree and cardinality of 'GARMENT' table?

a. Degree=5 & Cardinality=6
b. Degree=6 & Cardinality=5
c. Degree=5 & Cardinality=7
d. Degree=7 & Cardinality=5

(OR)

A Fashion Store MyStore is considering to maintain database of their Customers in SQL to store the data, As a Database Administrator Hina has decided that

Name of the database: MyStore
Name of the table: Customer
Attributes of the tables: Acc_No – Numeric, Cust_Name – Character 25, Cust_City - Character 25, Cust_Phone - Character 11, Open_Bal – Numeric

Consider the following records in 'Customer' table and answer the given questions:

Table : Customer

Acc_No	Cust_Name	Cust_City	Cust_Phone	Open_Bal
1001	Dhashmesh	Ambala	9710557614	10000
1002	Sanya	Patna	8223545233	15000
1003	Joe	NewDelhi	9972136576	13000
1004	Mrinal	NewDelhi	9321305453	12000
1005	Ishaan	Agra	9809876798	19000

i. With reference to the above given table, give query for generating following output

Cust_Name
Dhashmesh
Sanya
Ishaan

a. Select Name from Customer where Open_bal<20000;
b. Select Name from Customer where Cust_City like '%a';
c. Select Cust_Name from Customer where Cust_City like '%a';
d. Select Cust_name from Customer where Cust_Name like "a%;

ii. Give the output of : Select Cust_Name, Open_Bal from Customer order by Open_bal;

a.

Cust_Name	Open_Bal
Dhashmesh	10000
Mrinal	12000
Joe	13000
Sanya	15000
Ishaan	19000

b.

Cust_Name	Open_Bal
Ishaan	19000
Sanya	15000
Joe	13000
Mrinal	12000
Dhashmesh	10000

c.

Cust_Name	Open_Bal
Dhashmesh	10000
Ishaan	19000
Joe	13000
Mrinal	12000
Sanya	15000

d.

Cust_Name	Open_Bal
Dhashmesh	10000
Sanya	15000
Joe	13000
Mrinal	12000
Ishaan	19000

iii. Pranay has given the following command to obtain Highest Opening Balance of each City
Select max(Open_Bal) from Customer where group by Cust_City;
but he is not getting the desired result.
Help him by writing the correct command.

a. Select Max(Open_Bal) group by Cust_City;
b. Select Max(Open_Bal) from Customer where group by Cust_City;
c. Select Cust_City, Max(Open_Bal) from Customer group by Cust_City;
d. Select max(Open_Bal) from Customer group by Cust_name;

iv. Help Pranay find the total no. of records having open_bal between 15000 to 20000 by selecting the right command:

a. Select total from customer having open_bal between 15000 and 20000;;

b. Select count(*) from customer where open_bal between 15000 to 20000;;
c. Select count(*) from customer where open_bal between 15000 and 20000;
d. Select count(*) from customer order by open_bal;

v. Choose the correct command to display the first two letters of each customer's name.
a. select right(cust_name,2) from customer;
b. select left(cust_name,2) from customer;
c. select right(cust_name,0,2) from customer;
d. select left(cust_name,2) from customer;