THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

Date:29/07/24 GRADE: XII	MONTLY TEST-2 (2024-25) INFORMATICS PRACTICES 065)	Max marks:20 Time: 50 min.

General Instructions:
All questions are compulsory.

Qn. No	SECTION A	Marks allocated
1	What is a Series in Pandas? A. A 2D labeled data structure B. A 1D labeled array C. A 3D labeled data structure D. A data type in NumPy **Answer: B**	1
2	Which method is used to create a DataFrame in Pandas? A. pd.DataFrame() B. pd.create_dataframe() C. pd.new_dataframe() D. pd.frame() **Answer: A**	1
3	How do you select a single column from a DataFrame named `df`? A. df.columnname B. df[columnname] C. df['columnname'] D. df(columnname) **Answer: C**	1
4	Which function is used to read a CSV file into a DataFrame? A. pd.read_csv() B. pd.load_csv() C. pd.open_csv() D. pd.import_csv() **Answer: A**	1
5	How do you rename columns in a DataFrame named `df`? A. df.rename(columns={'old_name': 'new_name'}) B. df.columns({'old_name': 'new_name'}) C. df.rename_columns({'old_name': 'new_name'}) D. df.change_columns({'old_name': 'new_name'}) **Answer: A**	1
6	Which command is used to create a new table in MySQL? A. CREATE NEW TABLE B. MAKE TABLE C. CREATE TABLE D. ADD TABLE **Answer: C**	1
7	What is the primary key? A. A key that uniquely identifies each row in a table B. A key that stores the primary value C. A key used to encrypt the database D. A key that defines foreign relations	1

	Answer: A	

8	Which of the following is a valid SQL aggregate function?
	    A. SUM()
	    B. AGG()
	    C. COLLECT()
	    D. TOTAL()
	    Answer: A
		1

9	What is the command to retrieve all records from a table named `students`?
	    A. SELECT ALL FROM students;
	    B. SELECT * FROM students;
	    C. GET ALL FROM students;
	    D. FETCH * FROM students;
	    Answer: B
		1

	SECTION B	
10	Consider the following table 'Employee' and write down the queries given below:	5

EmployeeID	FirstName	LastName	Department	Salary
101	JOHN	SAVIOUR	HR	40000
102	BABU	VASU	CLERK	25000
103	CELIN	THOMAS	MANAGER	60000
104	UNNI	SASI	SALES	35000
105	MANU	CHERIAN	SALES	45000

a) Insert a new record into the Employee table with the following details: EmployeeID = 106, FirstName = 'DAVID', LastName = 'KURIAN', Department = 'HR', Salary = 50000.

INSERT INTO Employee VALUES (106, 'DAVID', 'KURIAN', 'HR', 50000);

b) Retrieve all records from the Employee table.

SELECT * FROM Employee;

c) Retrieve the first name and last name of all employees who work in the 'Sales' department.

SELECT FirstName, LastName FROM Employee WHERE Department = 'Sales';

d) Retrieve the EmployeeID and Salary of employees who have a salary greater than 45000.

SELECT EmployeeID, Salary FROM Employee WHERE Salary > 45000;

e) Retrieve the first name and last name of employees whose first name starts with 'J'.

SELECT FirstName, LastName FROM Employee WHERE FirstName LIKE 'J%';

f) Retrieve the first name and last name of employees whose last name ends with 'in'.

SELECT FirstName, LastName FROM Employee WHERE LastName LIKE '%In';

  g) Retrieve the first 3 characters of the first name of all employees.
SELECT LEFT(FirstName, 3) AS FirstName_Prefix FROM Employee;

  h) Retrieve the departments from the Employee table without repeating the values.
SELECT DISTINCT (Department) FROM Employee;

  i) Calculate the total salary of all employees.
SELECT SUM(Salary) AS TotalSalary FROM Employee;

  j) Find the average salary of employees in the 'Sales' department.
SELECT AVG(Salary) AS AverageSalary FROM Employee WHERE Department = 'Sales';

	SECTION C	
11	Write a MySQL query to create a table named `Students` with the following structure:	3

Column Name	Datatype	Size	Constraints
StudentID	INT	5	Primary Key
FirstName	VARCHAR	50	NOT NULL
LastName	VARCHAR	50	
Gender	CHAR	1	
DateOfBirth	DATE		
Class	INT	4	
Email	CHAR	40	
Fee	DOUBLE	(10,2)	

Answer:
CREATE TABLE Students (StudentID INT(5) PRIMARY KEY, FirstName VARCHAR(50) NOT NULL, LastName VARCHAR(50), Gender CHAR(1), DateOfBirth DATE, Class INT, Email VARCHAR(100), Fee DOUBLE(10,2));

| 12 | Predict the output: | 3 |

  a. SELECT 5+3 AS 'RESULT' FROM DUAL;
```
+--------+
| RESULT |
+--------+
|      8 |
+--------+
```
  b. SELECT POW (3,3) FROM DUAL;
```
+----------+
| POW(3,3) |
+----------+
|       27 |
+----------+
```

c. SELECT SQRT (25);

```
+----------+
| SQRT(25) |
+----------+
|        5 |
+----------+
```

d. SELECT ROUND (34.6);

```
+-------------+
| ROUND(34.6) |
+-------------+
|          35 |
+-------------+
```

e. SELECT ROUND (457.564,1);

```
+------------------+
| ROUND(457.564,1) |
+------------------+
|            457.6 |
+------------------+
```

f. SELECT ROUND (5687.546,-2);

```
+--------------------+
| ROUND(5687.546,-2) |
+--------------------+
|               5700 |
+--------------------+
```