PRACTICALS TERM 2 – SQL QUESTIONS

<table>
<tr><th>QUESTION NO.</th><th>OBJECTIVE & SOLUTIONS</th></tr>
<tr><td></td><td>Table : Employee

<table>
<tr><th>EmpNo</th><th>EmpName</th><th>Salary</th><th>Zone</th><th>Age</th><th>Grade</th><th>DeptId</th></tr>
<tr><td>1001</td><td>R Jain</td><td>30000</td><td>West</td><td>28</td><td>A</td><td>10</td></tr>
<tr><td>1002</td><td>H Sinha</td><td>35000</td><td>Centre</td><td>30</td><td>A</td><td>10</td></tr>
<tr><td>1003</td><td>R Bajpayee</td><td>35000</td><td>West</td><td>40</td><td>NULL</td><td>20</td></tr>
<tr><td>1004</td><td>T Prasad</td><td>38000</td><td>North</td><td>38</td><td>C</td><td>30</td></tr>
<tr><td>1005</td><td>S Mahajan</td><td>48000</td><td>East</td><td>26</td><td>NULL</td><td>20</td></tr>
<tr><td>1006</td><td>H Singh</td><td>34000</td><td>South</td><td>28</td><td>B</td><td>10</td></tr>
<tr><td>1007</td><td>Shelly</td><td>36000</td><td>North</td><td>26</td><td>A</td><td>30</td></tr>
<tr><td>1008</td><td>PK Swamy</td><td>18000</td><td>East</td><td>24</td><td>B</td><td>40</td></tr>
<tr><td>1009</td><td>S Tripathi</td><td>26000</td><td>West</td><td>34</td><td>C</td><td>10</td></tr>
<tr><td>1010</td><td>Kamal D</td><td>17000</td><td>North</td><td>32</td><td>NULL</td><td>40</td></tr>
</table>

Table : Department

<table>
<tr><th>Deptid</th><th>DeptName</th><th>MinSal</th><th>MaxSal</th><th>HOD</th></tr>
<tr><td>10</td><td>Sales</td><td>25000</td><td>35000</td><td>1</td></tr>
<tr><td>20</td><td>Finance</td><td>30000</td><td>50000</td><td>5</td></tr>
<tr><td>30</td><td>Admin</td><td>25000</td><td>40000</td><td>7</td></tr>
<tr><td>40</td><td>Marketing</td><td>15000</td><td>20000</td><td>4</td></tr>
</table>
</td></tr>
<tr><td>1.</td><td>Write SQL Commands for questions (1) to (v) based on the tables Employee &
Department
I. Create tables Employee & Department
II. Insert the first record into the tables Employee & Department
III. Display the various department numbersfrom the table Employee. A department
number should be displayed only once.</td></tr>
</table>

	IV. Display the employee number, name and salary ofthose employees whose salary is between 35000 and 40000. V. Display the names and salaries of all the employees who are working neither in West zone nor in Centre zone.

SOURCE CODE:	I. create table Employee(EmpNo int, EmpName varchar(20), Salary int, Zone varchar(10), Age int, Grade char(1), DeptId int);
	create table Department(Deptid int, DeptName varchar(15), MinSal int, MaxSal int, HOD int);
	II. insert into Employee values(1001, 'R Jain', 30000, West, 28, 'A', 10);
	insert into Department values(10, 'Sales', 25000, 35000, 1);
	III. select distinct DeptId from Employee;
	IV. select EmpNo, EmpName, Salary from Employee where 35000<Salary<40000;
	V. select EmpName, Salary from Employee where Zone not in ('West','Centre');

OUTPUT:	1)
	mysql> create table Employee(EmpNo int, EmpName varchar(20), Salary int, Zone varchar(10), Age int, Grade char(1), DeptId int);
	Query OK, 0 rows affected (0.02 sec)
	mysql> Create table Department(Deptid int, DeptName varchar(15), MinSal int, MaxSal int, HOD int);
	Query OK, 0 rows affected (0.02 sec)
	2)
	mysql> insert into Employee
	-> values
	-> (1001, 'R Jain', 30000, 'West', 28, 'A', 10)
	mysql> insert into Department values(10, 'Sales', 25000, 35000, 1);
	Query OK, 1 row affected (0.01 sec)

3)

```
+--------+
| DeptId |
+--------+
|     10 |
|     20 |
|     30 |
|     40 |
+--------+
4 rows in set (0.02 sec)
```

4)

```
+-------+------------+--------+
| EmpNo | EmpName    | Salary |
+-------+------------+--------+
|  1001 | R Jain     |  30000 |
|  1002 | H Sinha    |  35000 |
|  1003 | R Bajpayee |  35000 |
|  1004 | T Prasad   |  38000 |
|  1005 | S Mahajan  |  48000 |
|  1006 | H Singh    |  34000 |
|  1007 | Shelly     |  36000 |
|  1008 | PK Swamy   |  18000 |
|  1009 | S Tripathi |  26000 |
|  1010 | Kamal D    |  17000 |
+-------+------------+--------+
10 rows in set (0.02 sec)
```

5)

```
+------------+--------+
| EmpName    | Salary |
+------------+--------+
| R Jain     |  30000 |
| H Sinha    |  35000 |
| R Bajpayee |  35000 |
| T Prasad   |  38000 |
| S Mahajan  |  48000 |
| H Singh    |  34000 |
| Shelly     |  36000 |
| PK Swamy   |  18000 |
| S Tripathi |  26000 |
| Kamal D    |  17000 |
+------------+--------+
10 rows in set (0.00 sec)
```

QUESTION NO.	OBJECTIVE & SOLUTIONS
2.	Write SQL Commands for questions (1) to (viii) based on the tables Employee & Department. I. To get the name of the column Deptid to D_id. II. Display the name of those employees whose names starts with 'H'. III. List the name of employees not having any Grade. IV. Display the list of employees in descending order of employee code. V. Find the average salary at each department. VI. Find maximum salary of each department and display the name of that department which has maximum salary more than 37000. VII. To delete the records whose grade is not entered. VIII. Display the name and salary of those employees whose grade is A and from the sales department after incrementing by10%
SOURCE CODE:	I. alter table Department change column Deptid D_id int; alter table Employee change column Deptid D_id int; II. select EmpName from Employee where EmpName like 'H%'; III. select EmpName from Employee where Grade=Null; IV. select * from Employee order by EmpNo desc; V. select avg(Salary) from Employee group by D_id; VI. select max(Salary), DeptName from Employee, Department where Employee.D_id=Department.D_id group by DeptName; VII. delete from Employee where Grade is Null; VIII. select EmpName, Salary*1.1 as Salary from Employee where D_id=10;

OUTPUT:

I.

```
mysql> alter table Department change column Deptid D_id int;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0
mysql> alter table Employee change column Deptid D_id int;
Query OK, 0 rows affected (0.00 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

II.

```
+---------+
| EmpName |
+---------+
| H Sinha |
| H Singh |
+---------+
2 rows in set (0.03 sec)
```

III.

```
+------------+
| EmpName    |
+------------+
| R Bajpayee |
| S Mahajan  |
| Kamal D    |
+------------+
3 rows in set (0.00 sec)
```

IV.

```
+-------+-----------+--------+--------+------+-------+--------+
| EmpNo | EmpName   | Salary | Zone   | Age  | Grade | DeptId |
+-------+-----------+--------+--------+------+-------+--------+
|  1010 | Kamal D   |  17000 | North  |   32 | NULL  |     40 |
|  1009 | S Tripathi|  26000 | West   |   34 | C     |     10 |
|  1008 | PK Swamy  |  18000 | East   |   24 | B     |     40 |
|  1007 | Shelly    |  36000 | North  |   26 | A     |     30 |
|  1006 | H Singh   |  34000 | South  |   28 | B     |     10 |
|  1005 | S Mahajan |  48000 | East   |   26 | NULL  |     20 |
|  1004 | T Prasad  |  38000 | North  |   38 | C     |     30 |
|  1003 | R Bajpayee|  35000 | West   |   40 | NULL  |     20 |
|  1002 | H Sinha   |  35000 | Centre |   30 | A     |     10 |
|  1001 | R Jain    |  30000 | West   |   28 | A     |     10 |
+-------+-----------+--------+--------+------+-------+--------+
10 rows in set (0.02 sec)
```

V.

```
+-------------+
| avg(Salary) |
+-------------+
|  31250.0000 |
|  41500.0000 |
|  37000.0000 |
|  17500.0000 |
+-------------+
4 rows in set (0.02 sec)
```

VI.

```
+-------------+-----------+
| max(Salary) | DeptName  |
+-------------+-----------+
|       38000 | Admin     |
|       48000 | Finance   |
|       18000 | Marketing |
|       35000 | Sales     |
+-------------+-----------+
4 rows in set (0.02 sec)
```

VII.

```
mysql> delete from Employee where Grade is Null;
Query OK, 3 rows affected (0.01 sec)

mysql> select * from Employee;
+-------+-----------+--------+--------+------+-------+------+
| EmpNo | EmpName   | Salary | Zone   | Age  | Grade | D_id |
+-------+-----------+--------+--------+------+-------+------+
|  1001 | R Jain    |  30000 | West   |   28 | A     |   10 |
|  1002 | H Sinha   |  35000 | Centre |   30 | A     |   10 |
|  1004 | T Prasad  |  38000 | North  |   38 | C     |   30 |
|  1006 | H Singh   |  34000 | South  |   28 | B     |   10 |
|  1007 | Shelly    |  36000 | North  |   26 | A     |   30 |
|  1008 | PK Swamy  |  18000 | East   |   24 | B     |   40 |
|  1009 | S Tripathi|  26000 | West   |   34 | C     |   10 |
+-------+-----------+--------+--------+------+-------+------+
7 rows in set (0.00 sec)
```

VIII.

```
+------------+---------+
| EmpName    | Salary  |
+------------+---------+
| R Jain     | 33000.0 |
| H Sinha    | 38500.0 |
| H Singh    | 37400.0 |
| S Tripathi | 28600.0 |
+------------+---------+
4 rows in set (0.01 sec)
```

<table>
<tr><th>QUESTION NO.</th><th>OBJECTIVE & SOLUTIONS</th></tr>
<tr><td>3.</td><td>Write SQL Commands for questions 1 to 5 based on the table TEACHER
<table>
<tr><th>NO</th><th>NAME</th><th>AGE</th><th>DEPARTMENT</th><th>DOJ</th><th>SALARY</th><th>SEX</th></tr>
<tr><td>1</td><td>Mohitesh K</td><td>34</td><td>Computer</td><td>01/10/97</td><td>12000</td><td>M</td></tr>
<tr><td>2</td><td>Jaya Priya</td><td>31</td><td>History</td><td>24/03/98</td><td>18000</td><td>F</td></tr>
<tr><td>3</td><td>Prachi S</td><td>32</td><td>Mathematics</td><td>12/12/98</td><td>30000</td><td>M</td></tr>
<tr><td>4</td><td>Mishra A</td><td>35</td><td>History</td><td>07/01/99</td><td>40000</td><td>F</td></tr>
<tr><td>5</td><td>Maurya T</td><td>24</td><td>Mathematics</td><td>08/05/97</td><td>25000</td><td>M</td></tr>
</table>
1) To show all information about the teachers whose salary is greater than 20000.
2) To list all female teachers who are from History department.
3) To list all names of all teachers beginning with ‘M’ sorted by Name in descending order.
4) To count number of teachers with age less than 32.
5) To display the maximum salary .</td></tr>
<tr><td>SOURCE CODE:</td><td>1) Select * from TEACHER where SALARY>20000;
2) Select NAME from TEACHER where SEX=’F’;
3) Select NAME from TEACHER where NAME like ‘M%’ order by NAME desc;
4) Select Count(*) from TEACHER where AGE>32;
5) Select max(SALARY) from TEACHER;</td></tr>
<tr><td>OUTPUT:</td><td>1)
<pre>
+------+----------+------+------------+------------+--------+------+
| NO | NAME | AGE | DEPARTMENT | DOJ | SALARY | SEX |
+------+----------+------+------------+------------+--------+------+
3	Prachi S	32	Mathematics	0000-00-00	30000	M
4	Mishra A	35	History	0000-00-00	40000	F
5	Maurya T	24	Mathematics	0000-00-00	40000	F
+------+----------+------+------------+------------+--------+------+
3 rows in set (0.00 sec)
</pre></td></tr>
</table>

2)

```
+------------+
| NAME       |
+------------+
| Jaya Priya |
| Mishra A   |
| Maurya T   |
+------------+
3 rows in set (0.00 sec)
```

3)

```
+------------+
| NAME       |
+------------+
| Mohitesh K |
| Mishra A   |
| Maurya T   |
+------------+
3 rows in set (0.00 sec)
```

4)

```
+----------+
| Count(*) |
+----------+
|        2 |
+----------+
1 row in set (0.01 sec)
```

5)

```
+-------------+
| max(SALARY) |
+-------------+
|       40000 |
+-------------+
1 row in set (0.00 sec)
```

QUESTION NO.	OBJECTIVE & SOLUTIONS
4.	Write SQL Commands for questions 1 to 3 on the basis of table ADMIN and give the output for queries 4 and 5. CODE | TNAME | SUBJECT 1001 | Ravi Shankar | English 1009 | Priya Rai | Physics 1203 | Lisa Anand | English 1309 | Anita Rai | Hindi 1400 | George R | Hindi 1) To alter the table to add new column EXPERIENCE. 2) To update table ADMIN by giving all staff 10 yrs experience. 3) To display the records in the descending order of staff name . 4) To display the number of staff names beginning with letter 'R'. 5) To display the number of teachers in each subject
SOURCE CODE:	1) Alter table ADMIN add EXPERIENCE int; 2) Update ADMIN set EXPERIENCE=10; 3) Select * from ADMIN order by TNAME; 4) Select count(TNAME) from ADMIN where TNAME like 'R%'; 5) Select count(*), SUBJECT from ADMIN group by SUBJECT;

OUTPUT:

1)

```
mysql> Alter table ADMIN add EXPERIENCE int;
Query OK, 0 rows affected (0.13 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> select * from ADMIN;
+------+-------------+---------+------------+
| CODE | TNAME       | SUBJECT | EXPERIENCE |
+------+-------------+---------+------------+
| 1001 | Ravi Shankar | English |       NULL |
| 1009 | Priya Rai    | Physics |       NULL |
| 1203 | Lisa Anand   | English |       NULL |
| 1309 | Anita Rai    | Hindi   |       NULL |
| 1400 | George R     | Hindi   |       NULL |
+------+-------------+---------+------------+
5 rows in set (0.00 sec)
```

2)

```
mysql> update ADMIN set EXPERIENCE=10;
Query OK, 5 rows affected (0.02 sec)
Rows matched: 5  Changed: 5  Warnings: 0

mysql> select * from ADMIN;
+------+-------------+---------+------------+
| CODE | TNAME       | SUBJECT | EXPERIENCE |
+------+-------------+---------+------------+
| 1001 | Ravi Shankar | English |         10 |
| 1009 | Priya Rai    | Physics |         10 |
| 1203 | Lisa Anand   | English |         10 |
| 1309 | Anita Rai    | Hindi   |         10 |
| 1400 | George R     | Hindi   |         10 |
+------+-------------+---------+------------+
5 rows in set (0.00 sec)
```

3)

```
mysql> Select * from ADMIN order by TNAME;
+------+-------------+---------+------------+
| CODE | TNAME       | SUBJECT | EXPERIENCE |
+------+-------------+---------+------------+
| 1309 | Anita Rai    | Hindi   |         10 |
| 1400 | George R     | Hindi   |         10 |
| 1203 | Lisa Anand   | English |         10 |
| 1009 | Priya Rai    | Physics |         10 |
| 1001 | Ravi Shankar | English |         10 |
+------+-------------+---------+------------+
5 rows in set (0.00 sec)
```

4)

```
+--------------+
| count(TNAME) |
+--------------+
|            1 |
+--------------+
1 row in set (0.01 sec)
```

5)

```
+----------+---------+
| count(*) | SUBJECT |
+----------+---------+
|        2 | English |
|        2 | Hindi   |
|        1 | Physics |
+----------+---------+
3 rows in set (0.00 sec)
```

<table>
<tr><th>QUESTION NO.</th><th>OBJECTIVE & SOLUTIONS</th></tr>
<tr><td>5.</td><td>Write queries for (i) to (v) based on the table STUDENT

<table>
<tr><th>ST_ID</th><th>ST_CODE</th><th>ST_NAME</th><th>SUBJECT</th><th>MARKS</th></tr>
<tr><td>1</td><td>101</td><td>Andrew</td><td>English</td><td>68</td></tr>
<tr><td>2</td><td>102</td><td>Neha</td><td>Physics</td><td>70</td></tr>
<tr><td>3</td><td>103</td><td>John</td><td>Maths</td><td>90</td></tr>
<tr><td>4</td><td>104</td><td>Arjun</td><td>Science</td><td>85</td></tr>
<tr><td>5</td><td>105</td><td>Joseph</td><td>English</td><td>92</td></tr>
<tr><td>6</td><td>106</td><td>Prithvi</td><td>Maths</td><td>83</td></tr>
<tr><td>7</td><td>107</td><td>Nehla</td><td>English</td><td>85</td></tr>
<tr><td>8</td><td>108</td><td>Arun</td><td>Science</td><td>70</td></tr>
</table>

1) To get the SUBJECT and the average marks scored by the students in that subject from the table STUDENT.

2) To change the name of the column ST_CODE to ADMN_NO.

3) To get the student names sorted by marks in the descending order.

4) To get the number of students who secured more than 80% marks from the table student.

5) To get the student names that start with "a" and are at least 5 characters in length</td></tr>
<tr><td>SOURCE CODE:</td><td>1) Select SUBJECT, avg(MARKS) from STUDENT group by SUBJECT;
2) Alter table STUDENT change ST_CODE ADMN_NO int;
3) Select ST_NAME from STUDENT order by MARKS desc;
4) Select count(*) from STUDENT where MARKS>80;
5) Select ST_NAME from STUDENT where ST_NAME like ‘A%’ and length(ST_NAME)>4;</td></tr>
</table>

OUTPUT:

1)

```
+---------+------------+
| SUBJECT | avg(MARKS) |
+---------+------------+
| English |    81.6667 |
| Maths   |    86.5000 |
| Physics |    70.0000 |
| Science |    77.5000 |
+---------+------------+
4 rows in set (0.00 sec)
```

2)

```
mysql> Alter table STUDENT change ST_CODE ADMN_NO int;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc STUDENT;
+---------+------------+------+-----+---------+-------+
| Field   | Type       | Null | Key | Default | Extra |
+---------+------------+------+-----+---------+-------+
| ST_ID   | int(11)    | YES  |     | NULL    |       |
| ADMN_NO | int(11)    | YES  |     | NULL    |       |
| ST_NAME | varchar(20)| YES  |     | NULL    |       |
| SUBJECT | varchar(10)| YES  |     | NULL    |       |
| MARKS   | int(11)    | YES  |     | NULL    |       |
+---------+------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

3)

```
+---------+
| ST_NAME |
+---------+
| Joseph  |
| John    |
| Arjun   |
| Nehla   |
| Prithvi |
| Neha    |
| Arun    |
| Andrew  |
+---------+
8 rows in set (0.00 sec)
```

4)

```
+----------+
| count(*) |
+----------+
|        5 |
+----------+
1 row in set (0.00 sec)
```

5)

```
+---------+
| ST_NAME |
+---------+
| Andrew  |
| Arjun   |
+---------+
2 rows in set (0.03 sec)
```