Roll Number – 205119001

DBMS LAB MANUAL

Question 1
Answers:

1.1 CREATE TABLE EMP (EMPNO NUMBER(6),EMPNAME VARCHAR(20) NOT NULL,JOB VARCHAR(10) NOT NULL,MGR NUMBER(8),DEPTNO NUMBER(6),SAL NUMBER(7,2));

1.2 ALTER TABLE EMP ADD COMMI NUMBER(5);

1.3 ALTER TABLE EMP MODIFY JOB VARCHAR(12);

1.4 CREATE TABLE DEPT (DEPTNO NUMBER(5) PRIMARY KEY,DNAME VARCHAR(20),DLOC VARCHAR(20));

1.5 ALTER TABLE EMP MODIFY EMPNO INT PRIMARY KEY;

ALTER TABLE DEPT ADD FOREIGN KEY(DEPTNO) REFERENCES DEPT(DEPTNO;

1.6 ALTER TABLE EMP ADD CHECK(EMPNO>100);

1.7 ALTER TABLE EMP MODIFY SAL FLOAT DEFAULT 5000 NOT NULL;

1.8 ALTER TABLE EMP ADD DOB DATE;

Question 2
Answers:

2.1 INSERT INTO DEPT VALUES(10,'MANAGEMENT','MAIN BLOCK');
INSERT INTO DEPT VALUES(20,'DEVELOPMENT','MANUFACTURING UNIT');
INSERT INTO DEPT VALUES(30,'MAINTAINANCE','MAIN BLOCK');
INSERT INTO DEPT VALUES(40,'TRANSPORT','ADMIN BLOCK');
INSERT INTO DEPT VALUES(50,'SALES','HEAD OFFICE');

2.2 INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7369,'SMITH','CLERK',7566,'17-DEC80',800,0,20);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7399,'ASANT','SALESMAN',7566,'20-FEB81',1600,300,20);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7499,'ALLEN','SALESMAN',7698,'20-FEB81',1600,300,30);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7521,'WARD','SALESMAN',7698,'22-FEB82',1250,500,30);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7566,'JONES','MANAGER',7839,'02-APR81',5975,500,20);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7698,'BLAKE','MANAGER',7839,'01-MAY79',9850,1400,30);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7611,'SCOTT','HOD',7839,'12-JUN76',3000,NULL,10);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7839,'CLARK','CEO',NULL,'16-MAR72',9900,NULL,10);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7368,'FORD','SUPERVIS',7366,'17-DEC80',800,0,20);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7599,'ALLEY','SALESMAN',7698,'20-FEB81',1600,300,30);
INSERT INTO EMP(EMPNO, EMPNAME ,JOB, MGR ,DOB ,SAL ,COMMI, DEPTNO) VALUES(7421,'DRANK','CLERCK',7698,'22-JAN82',1250,500,30);

2.3 UPDATE EMP SET COMMI=1000 WHERE JOB='MANAGER';

2.4 CREATE TABLE EMPLOYEE (EMPNO INTEGER PRIMARY KEY,ENAME VARCHAR(20) NOT NULL,JOB VARCHAR(30) NOT NULL,MGR INTEGER,DEPTNO INTEGER,SAL INTEGER,COMM INTEGER,DOB VARCHAR(10));
INSERT INTO EMPLOYEE SELECT*FROM EMP;
2.5 DELETE FROM EMPLOYEE WHERE JOB='SUPERVIS';
2.6 DELETE FROM EMPLOYEE WHERE EMPNO=7599;
2.7 SELECT * FROM EMP ORDER BY SAL;
2.8 SELECT * FROM EMP ORDER BY SAL DESC;
2.9 SELECT * FROM EMP WHERE DEPTNO=30;
2.10 SELECT DISTINCT DEPTNO FROM EMP;
2.11 SELECT * FROM EMP ORDER BY EMPNAME;
2.12 create table manager as select * from EMP where JOB='MANAGER';
2.13 select * from emp where commi IS null;

Question 3
Answers:

3.1 select * from EMP where DEPTNO in (20,10);
3.2 select * from EMPLOYEE where ENAME like 'S%';
3.3 select * from EMPLOYEE where ENAME not like 'S%';
3.4 select * from EMPLOYEE where EMPNO between 7500 and 7600 ;
3.5 Select * from EMPLOYEE where EMPNO not between 7500 and 7600 ;
3.6 select sqrt(SAL) from EMP;
3.7 SELECT COUNT(*) FROM EMP;
3.8 SELECT SUM(SAL),AVG(SAL) FROM EMP;
3.9 select min(SAL) AS MIN_SAL, MAX(SAL) AS MAX_SAL from EMP;
3.10 SELECT SUM(SAL) FROM EMP;
3.11 SELECT JOB,SUM(SAL) FROM EMP GROUP BY JOB;
3.12 select to_char(to_date('14-jul-09'),'month') from dual;
3.13 select to_date(DOB,'DD-MM-YY') from EMP;
3.14 select add_months(DOB,2) from EMP;
3.15 select last_day('05-oct-09') from dual;
3.16 select round(to_date(dob),'month') from emp;
select round(to_date(dob),'year') from emp;
select round(to_date(dob),'day') from emp;
3.17 select(sysdate-60) from dual;
3.18 select EMPNAME ,SAL , SAL+0.15* SAL from EMP;
3.19 select EMPNAME from EMP where Empname like 'B%' or Empname like 'C%';
3.20 select EMPNAME,SAL,MGR from EMP where SAL in (select min(SAL) from EMP group by MGR);
3.21 select dname, count (empname) from emp, dept where emp.deptno=dept.deptno group by dname;
3.22 select empname from emp where length(empname)<=5;
3.23 select empname from emp where mgr in (7399,7698,7566);
3.24 SELECT COUNT(DISTINCT JOB)FROM EMP;
3.25 select max(sal)-min(sal) from emp;
3.26 select count(distinct deptno) from emp;
3.27 select empname,dob from emp where to_char(dob,'mon')='feb';

3.28 select EMPname from EMP where to_char(dob,'MON') like to_char(sysdate, 'MON');
3.29 select empname from emp where empname like 'S%H';
3.30 select empname from emp where sal>5000;

Question 4
Answers:

4.1 SELECT * FROM EMP,DEPT WHERE EMP.DEPTNO=DEPT.DEPTNO AND (DEPT.DNAME='MAINTAINANCE' OR DEPT.DNAME='DEVELOPMENT');
4.2 SELECT EMPNAME,SAL FROM EMP WHERE SAL>(SELECT MIN(SAL) FROM EMP) AND JOB LIKE 'M%';
4.3 SELECT * FROM EMP WHERE JOB=(SELECT JOB FROM EMP WHERE EMPNAME='JONES');
4.4 SELECT * FROM EMP WHERE SAL>(SELECT MAX(SAL) FROM EMP WHERE DEPTNO=30);
4.5 SELECT * FROM EMP WHERE JOB=(SELECT JOB FROM EMP WHERE EMPNAME='JONES') AND SAL>=(SELECT SAL FROM EMP WHERE EMPNAME='FORD');
4.6 SELECT EMPNAME,JOB FROM EMP WHERE DEPTNO=20 AND JOB=ANY(SELECT JOB FROM EMP E,DEPT D WHERE E.DEPTNO=D.DEPTNO AND D.DNAME='MANAGEMENT');
4.7 SELECT * FROM EMP OUTER WHERE SAL>(SELECT AVG(SAL) FROM EMP WHERE DEPTNO=OUTER.DEPTNO);
4.8 SELECT EMPNAME,JOB,DNAME FROM EMP E,DEPT D WHERE E.DEPTNO=D.DEPTNO;
4.9 SELECT * FROM EMP WHERE JOB=ANY(SELECT E.JOB FROM DEPT D,EMP E WHERE D.DEPTNO=E.DEPTNO AND DLOC='MAIN BLOCK') AND DEPTNO!=(SELECT DEPTNO FROM DEPT WHERE DLOC='MAIN BLOCK');
4.10 SELECT * FROM EMP WHERE DEPTNO=10 AND JOB=ANY(SELECT JOB FROM EMP,DEPT WHERE DEPT.DEPTNO=EMP.DEPTNO AND DEPT.DNAME='DEVELOPMENT');
4.11 SELECT * FROM EMP WHERE JOB=(SELECT JOB FROM EMP WHERE EMPNAME='FORD') AND SAL=(SELECT SAL FROM EMP WHERE EMPNAME='FORD');
4.12 SELECT DNAME FROM DEPT WHERE DEPTNO=ANY(SELECT DEPTNO FROM (SELECT COUNT(JOB) AS NO,DEPTNO FROM EMP WHERE JOB='SALESMAN' GROUP BY DEPTNO) WHERE NO>=2);
JOB='SALESMAN' AND DEPTNO=D.DEPTNO);
4.13 SELECT * FROM EMP WHERE DEPTNO=20 AND JOB=ANY(SELECT JOB FROM EMP WHERE DEPTNO=30);
4.14 SELECT * FROM EMP WHERE SAL>ANY(SELECT MAX(SAL) FROM EMP WHERE DEPTNO=20 OR DEPTNO=30 GROUP BY DEPTNO);
4.15 SELECT MAX(SAL) FROM EMP GROUP BY DEPTNO HAVING MAX(SAL)>9000;
4.16 SELECT MAX(SAL) FROM EMP GROUP BY EMPNAME HAVING MIN(SAL)>1000 AND MIN(SAL)<5000;
->extra table created
CREATE TABLE ACCDEPT (DEPTNO NUMBER(4),DNAME VARCHAR(15),DCITY VARCHAR(20));
INSERT ALL INTO ACCDEPT (DNAME,DEPTNO,DCITY) VALUES(10,'MANAGEMENT','MAIN BLOCK') INTO ACCDEPT (DNAME,DEPTNO,DCITY) VALUES(20,'DEVELOPMENT','MANUFACTURING UNIT') INTO ACCDEPT (DNAME,DEPTNO,DCITY) VALUES(30,'MAINTAINANCE','MAIN BLOCK') SELECT 1 FROM DUAL;
4.17 SELECT A.DNAME FROM DEPT D,ACCDEPT A WHERE D.DEPTNO=A.DEPTNO;
4.18 SELECT EMPNAME FROM EMP WHERE DEPTNO!=ANY(SELECT DEPTNO FROM ACCDEPT);
4.19 SELECT * FROM EMP LEFT JOIN DEPT ON DEPT.DEPTNO=EMP.DEPTNO;
4.20 SELECT * FROM EMP RIGHT JOIN DEPT ON DEPT.DEPTNO=EMP.DEPTNO;
4.21 SELECT * FROM EMP FULL JOIN DEPT ON DEPT.DEPTNO=EMP.DEPTNO;
4.22 SELECT E.EMPNAME,M.EMPNAME FROM EMP E,EMP M WHERE E.MGR=M.EMPNO;
4.23 SELECT E.EMPNAME,M.SAL FROM EMP E,EMP M WHERE E.MGR=M.EMPNO;
4.24 SELECT E.EMPNAME,E.JOB,E.EMPNO,D.DNAME,D.DLOC FROM EMP E, DEPT D WHERE E.DEPTNO=E.DEPTNO AND D.DEPTNO=E.DEPTNO;
4.25 SELECT E.EMPNO,E.EMPNAME,E.JOB,M.EMPNAME FROM EMP E,EMP M WHERE E.MGR=M.EMPNO;
4.26 SELECT E.EMPNAME,P.EMPNAME FROM EMP E,EMP P WHERE E.SAL=P.SAL AND E.EMPNAME!=P.EMPNAME;

Question 5

Answers:

5.1 SELECT DEPTNO FROM DEPT UNION SELECT DEPTNO FROM ACCDEPT;
5.2 SELECT DEPTNO FROM DEPT UNION ALL SELECT DEPTNO FROM ACCDEPT;
5.3 SELECT DEPTNO FROM DEPT INTERSECT SELECT DEPTNO FROM ACCDEPT;
5.4 SELECT DEPTNO FROM DEPT MINUS SELECT DEPTNO FROM ACCDEPT;
5.5 CREATE VIEW MANAGERS AS SELECT * FROM EMP WHERE JOB='MANAGER';
SELECT * FROM MANAGERS;
5.7 CREATE VIEW EMP_ALL AS SELECT E.EMPNO,E.EMPNAME,D.DEPTNO,D.DNAME FROM EMP E, DEPT
D WHERE E.DEPTNO=D.DEPTNO AND E.JOB NOT IN('HOD','CEO');
SELECT * FROM EMP_ALL;
5.9 DROP VIEW EMP_ALL;

Question 6

Answers:

```
6.1
declare
a number(10);
b number(10);
begin
a:=&a;
b:=&b;
dbms_output.put_line('THE PREV VALUES OF A AND B WERE');
dbms_output.put_line(a);
dbms_output.put_line(b);
a:=a+b;
b:=a-b;
a:=a-b;
dbms_output.put_line('THE VALUES OF A AND B ARE');
dbms_output.put_line(a);
dbms_output.put_line(b);
end;
/
6.2
declare
a number(10);
b number(10);
c number(10);
begin
a:=&a;
b:=&b;
```

```
dbms_output.put_line('THE PREV VALUES OF A AND B WERE');
dbms_output.put_line(a);
dbms_output.put_line(b);
c:=a;
a:=b;
b:=c;
dbms_output.put_line('THE VALUES OF A AND B ARE');
dbms_output.put_line(a);
dbms_output.put_line(b);
end;
/
6.3
declare
a number;
b number;
begin
a:=&a;
b:=&b;
if a=b then
dbms_output.put_line('BOTH ARE EQUAL');
elsif a>b then
dbms_output.put_line('A IS GREATER');
else
dbms_output.put_line('B IS GREATER');
end if;
end;
/
6.4
declare
java number(10);
dbms number(10);
co number(10);
se number(10); es
number(10); ppl
number(10); total
number(10); avgs
number(10); per
number(10);
dbms_output.put_line('ENTER THE MARKS');
begin
java:=&java;
dbms:=&dbms;
co:=&co;
se:=&se;
es:=&es;
ppl:=&ppl;
total:=(java+dbms+co+se+es+ppl);
per:=(total/600)*100;
if java<40 or dbms<40 or co<40 or se<40 or es<40 or ppl<40 then
dbms_output.put_line('FAIL');
elsif per>75 then
dbms_output.put_line('GRADE A');
elsif per>65 and per<75 then
dbms_output.put_line('GRADE B');
```

```plsql
elsif per>55 and per<65 then
dbms_output.put_line('GRADE C');
else
dbms_output.put_line('INVALID INPUT');
end if;
dbms_output.put_line('PERCENTAGE IS '||per);
dbms_output.put_line('TOTAL IS '||total);
end;
/
```
6.5
```plsql
declare
a number;
d number:=0;
sum1 number:=0;
begin
a:=&a;
while a>0
loop
d:=mod(a,10);
sum1:=sum1+d;
a:=trunc(a/10);
end loop;
dbms_output.put_line('SUM = '|| sum1);
end;
/
```
--6.6
```plsql
declare
a number;
rev number;
d number;
begin
a:=&a;
rev:=0;
while a>0
loop
d:=mod(a,10);
rev:=(rev*10)+d;
a:=trunc(a/10);
end loop;
dbms_output.put_line('REVERSE NUMBER = '|| rev);
end;
/
```
6.7
```plsql
declare
a number;
c number:=0;
i number;
begin
a:=&a;
for i in 1..a
loop
if mod(a,i)=0 then
c:=c+1;
end if;
```

```
end loop;
if c=2 then
dbms_output.put_line(a ||' is a prime number');
else
dbms_output.put_line(a ||' is not a prime number');
end if;
end;
/
6.8
declare
n number;
f number:=1;
begin
n:=&n;
for i in 1..n
loop
f:=f*i;
end loop;
dbms_output.put_line('Factorial '|| n ||' is '|| f);
end;
/
6.9
create table areas(radius number(10),area number(6,2));
declare
pi constant number(4,2):=3.14;
radius number(5):=3;
area number(6,2);
begin
while radius<7 loop
area:=pi*power(radius,2);
insert into areas values(radius,area);
radius:=radius+1;
end loop;
end;
/
6.10
create table acct(name varchar2(10),cur_bal number(10),acctno number(6,2));
insert into stud values('&sname',&rollno,&marks);
select * from acct;
declare
mano number(5);
mcb number(6,2);
minibal constant number(7,2):=1000.00;
fine number(6,2):=100.00;
begin
mano:=&mano;
select cur_bal into mcb from acct where acctno=mano;
if mcb<minibal then
update acct set cur_bal=cur_bal-fine where acctno=mano;
end if;
end;
/
```

Question 7
Answers:

7.1 create or replace procedure salary(deptid number) as begin
update emp set sal=sal+1000 where sal>5000 AND deptno=deptid;
end;

7.2 create or replace procedure salary1(empid number) as
begin
update emp set sal=sal+sal*(0.1) where empno=empid;
end;

7.3 create or replace procedure get_sal(dept number) as
begin
for s in (select * from emp where deptno = dept)
loop
dbms_output.put_line(s.sal);
end loop;
end;

7.4 create or replace procedure get_nature(dept number) as
begin
for s in (select * from emp where deptno = dept)
loop
dbms_output.put_line(s.job);
end loop;
end;

7.5 create or replace procedure dep_name(deptid number) as
begin
select dept.dname from dept,emp where emp.deptno=dept.deptno;
end;

Question 8
Answers:

8.1 CREATE OR REPLACE TRIGGER first
BEFORE INSERT on DEPT
for each row
DECLARE
a number;
BEGIN
if (:new.deptno is NULL) then
raise_application_error(-20001,'error::deptno cannot be NULL');
else
select count(*) into a from DEPT where deptno=:new.deptno;
if(a=1) then
raise_application_error(-20002,'error::cannot have duplicate value);
end if;
end if;
END;
8.2 CREATE OR REPLACE TRIGGER trgr_to_delete
BEFORE DELETE ON DEPT FOR EACH ROW
DECLARE
CURSOR get_emp(p_deptno NUMBER) IS
select EMPNO, ENAME , JOB, MGR, SAL, COMM, DOB
from EMP
WHERE deptno=p_deptno;
BEGIN
dbms_output.put_line('Delete dept = ' || :old.deptno);
dbms_output.put_line('- dept name = ' || :old.dname);
dbms_output.put_line('- dept loc = ' || :old.loc);
FOR get_emp_rec IN get_emp(:old.deptno) LOOP
dbms_output.put('- emp (' || get_emp_rec.empno);
dbms_output.put(', ' || get_emp_rec.ename);
dbms_output.put(', ' || get_emp_rec.job);
dbms_output.put(', ' || get_emp_rec.mgr);
dbms_output.put(', ' || get_emp_rec.sal);
dbms_output.put(', ' || get_emp_rec.comm);
dbms_output.put(', ' || get_emp_rec.job);
dbms_output.put_line(')');
END LOOP;
END;
8.3 CREATE TRIGGER AfterDELETETrigger after delete on [EMP Table]
FOR DELETE
AS
INSERT INTO [logtable](
empno

```sql
,[ename]
,[job]
,[mgr]
,[deptno]
,[sal]
,[dob])
SELECT empno
,[ename]
,[job]
,[mgr]
,[deptno]
,[sal]
,[dob]
,CAST( SERVERPROPERTY('MachineName') AS VARCHAR2(50))
,CAST( SERVERPROPERTY('ServerName') AS VARCHAR2(50))
,GETDATE()
FROM DELETED;
PRINT 'We Successfully Fired the AFTER DELETE Triggers in SQL Server and inserted a values into log Table.'
GO
```