Ans 2.

CREATE TABLE EMPLOYEE(

ENUM DECIMAL(12) NOT NULL, /\* Employee number \*/

DOB DATE NULL, /\* Date of birth \*/

CONSTRAINT EMPLOYEE\_PKEY PRIMARY KEY(ENUM)

);

CREATE TABLE DRIVER(

DLNUM DECIMAL(8) NOT NULL, /\* Driving license number \*/

ENUM DECIMAL(12) NOT NULL, /\* Employee number \*/

FNAME VARCHAR(50) NOT NULL, /\* First name \*/

LNAME VARCHAR(50) NOT NULL, /\* Last name \*/

PHONE DECIMAL(10) NOT NULL, /\* Driver phone no \*/

HOME\_CITY VARCHAR(30) NOT NULL, /\*Home city \*/

CONSTRAINT DRIVER\_PKEY PRIMARY KEY(DLNUM),

CONSTRAINT DRIVER\_FKEY FOREIGN KEY(ENUM) REFERENCES EMPLOYEE(ENUM)

);

CREATE TABLE CITY(

CITY\_ID DECIMAL(10) NOT NULL, /\*City ID \*/

CNAME VARCHAR(30) NOT NULL, /\* City Name \*/

CONSTRAINT CITY\_PKEY PRIMARY KEY(CITY\_ID)

);

CREATE TABLE TSERVICE(

SNUM DECIMAL(12) NOT NULL, /\* Service number \*/

DEPARTURE\_CITY\_ID DECIMAL(12) NOT NULL, /\* Departure City ID \*/

DESTINATION\_CITY\_ID DECIMAL(12) NOT NULL, /\* Destination City ID \*/

DEP\_TIME TIME NOT NULL, /\* Departure Time \*/

ARR\_TIME TIME NOT NULL, /\* Arrival Time \*/

CONSTRAINT TSERVICE \_PKEY PRIMARY KEY(SNUM),

CONSTRAINT TSERVICE\_FKEY1 FOREIGN KEY(DEPARTURE\_CITY\_ID) REFERENCES CITY(CITY\_ID),

CONSTRAINT TSERVICE\_FKEY2 FOREIGN KEY(DESTINATION\_CITY\_ID) REFERENCES CITY(CITY\_ID)

);

CREATE TABLE LONGER\_TSERVICE(

SNUM DECIMAL(12) NOT NULL, /\* Service number \*/

TOT\_DAYS VARCHAR(10) NOT NULL, /\* Total No of Days \*/

CONSTRAINT LONGER\_TSERVICE \_PKEY PRIMARY KEY(SNUM)

);

CREATE TABLE SHORTER\_TSERVICE(

SNUM DECIMAL(12) NOT NULL, /\* Service number \*/

TOT\_HOURS VARCHAR(10) NOT NULL, /\* Total No of Hours \*/

CONSTRAINT SHORTER\_TSERVICE \_PKEY PRIMARY KEY(SNUM)

);

CREATE TABLE STOP(

SNUM DECIMAL(12) NOT NULL, /\* Service number \*/

STOP\_CITY VARCHAR(30) NOT NULL, /\* Stop city \*/

DEP\_TIME TIME NOT NULL, /\* Departure Time \*/

ARR\_TIME TIME NOT NULL, /\* Arrival Time \*/

CONSTRAINT STOP \_PKEY PRIMARY KEY(SNUM)

);

CREATE TABLE BUS(

REGO DECIMAL(12) NOT NULL, /\* Registration number \*/

MAKE VARCHAR(30) NOT NULL,

DATE\_MADE Date NOT NULL,

CONSTRAINT BUS \_PKEY PRIMARY KEY(REGO)

);

Ans 3.

1. alter table TRUCK drop constraint TRUCK\_CAPACITY ;

alter table TRUCK add constraint TRUCK\_CAPACITY check (CAPACITY BETWEEN 0 AND 220) ;

2. alter table TRIPLEG add constraint TRIPLEG\_LEGNUM check (LEGNUM BETWEEN 0 AND 20) ;

3. CREATE TABLE MECHANICS(

ENUM DECIMAL(12) NOT NULL, /\* Employee number \*/

FNAME VARCHAR(50) NOT NULL, /\* First name \*/

LNAME VARCHAR(50) NOT NULL, /\* Last name \*/

DOB DATE NULL, /\* Date of birth \*/

QUALIFICATION\_LEVEL DECIMAL(1) NOT NULL, /\* Qualification level \*/

CONSTRAINT MECHANICS\_PKEY PRIMARY KEY(ENUM) ,

CONSTRAINT MECHANICS\_QUAL\_LEVEL CHECK (QUALIFICATION\_LEVEL>0.0 AND QUALIFICATION\_LEVEL<6),

CONSTRAINT MECHANICS\_FKEY FOREIGN KEY(ENUM) REFERENCES EMPLOYEE(ENUM));

4.

CREATE TABLE trip1

(

tnum DECIMAL(10) NOT NULL,/\* Trip number \*/

regnum VARCHAR(10) NOT NULL,/\* Truck registration number \*/

tdate DATE NOT NULL, /\* Trip date \*/

CONSTRAINT trip1\_pkey PRIMARY KEY (tnum),

CONSTRAINT trip1\_fkey2 FOREIGN KEY (regnum) REFERENCES truck(regnum)

);

CREATE TABLE trip\_driver\_mpg

(

tnum DECIMAL(10) NOT NULL,/\* Trip number \*/

lnum DECIMAL(8) NOT NULL,/\* Driving license number \*/

CONSTRAINT tripdriver\_pkey PRIMARY KEY (tnum),

CONSTRAINT tripdriver\_fkey1 FOREIGN KEY (lnum) REFERENCES driver(lnum)

);

Ans 4.

1.

INSERT INTO TRIP (TNUM, LNUM, REGNUM, TDATE)  
VALUES (111, 008, ‘AL08UK’, ‘2020-06-06’);

INSERT INTO TRIPLEG (TNUM, LEGNUM, DEPARTURE, DESTINATION)  
VALUES (111, 1, ‘Sydney’, ‘Dubbo’),

(111, 2, ‘Dubbo’, ‘Sydney’);

2.

DELETE FROM TRIPLEG WHERE TNUM = 60; --Child

DELETE FROM TRIP WHERE TNUM = 60; --Parent

3.

UPDATE DRIVER

SET DRIVER\_STATUS = ‘ON LEAVE’

WHERE ( SELECT COUNT(TNUM) FROM TRIP WHERE TRIP.LNUM = DRIVER.LNUM)>106;

4.

SELECT \* INTO E20CENT FROM EMPLOYEE WHERE YEAR(DATE)<’2000’;

Ans 5.

1.

SELECT a.FNAME, b.LNAME

FROM EMPLOYEE a,

DRIVER b

WHERE a.ENUM=b.ENUM

AND b.DRIVER\_STATUS NOT IN (‘ ON LEAVE’)

2.

SELECT a.REGNUM

FROM TRUCK a

WHERE a.REGNUM not exists in (select REGNUM from TRIP);

3.

SELECT a.REGNUM

FROM TRUCK a

WHERE ( SELECT COUNT(TNUM) FROM TRIP WHERE TRIP. REGNUM = a. REGNUM)>200

4. –to be looked

SELECT DISTINCT b.DEPARTURE, b,DESTINATION

FROM TRIP a,

TRIPLEG b

WHERE a.TNUM=b.TNUM

AND (a.TNUM = 7 or a.TNUM = 12)

5.

SELECT a.REGNUM

FROM TRUCK a,

TRIP b

WHERE a.REGNUM=b.REGNUM

AND (b.LNUM=006 AND b.LNUM=008);

Ans 6.

1.

CREATE ROLE driver;

CREATE ROLE admin;

2.

GRANT SELECT ON transport. EMPLOYEE TO admin

[IDENTIFIED By admin];

GRANT SELECT ON transport. DRIVER TO admin

[IDENTIFIED By admin];

3.

GRANT INSERT

ON TRIP

TO driver;

GRANT INSERT

ON TRIPLEG

TO driver;

4. –to be looked

GRANT UPDATE

ON transport

TO admin;

5. not clear

6.

create user user1 identified by “pswd1”;

create user user2 identified by “pswd2”;

create user user3 identified by “pswd3”;

create user user4 identified by “pswd4”;

create user user5 identified by “pswd5”;

GRANT driver to user1;

GRANT driver to user2;

GRANT driver to user3;

GRANT admin to user4;

GRANT admin to user5;

7.

EXEC sys.sp\_configure N’user connection’, N’6’

Ans 7.

1. Theoretical

2.