# Batch : MTech

# Course : Database and SQL

# Assessment : Graded Assessment

# Duration : 3 hours

# Total Marks : 40

# Q.1.Create the below schema and solve the following queries

CREATE DATABASE exam\_ft\_final;

use exam\_ft\_final;

create table book (Isbn varchar(8), Title varchar (25), author\_name varchar(30),

publisher\_name varchar(20), price bigint);

insert into book values

('123B', 'Programming in C', 'John', 'McGraw Hill', 200),

('234C', 'Programming in Python', 'John', 'McGraw Hill', 600),

('345D', 'Java Programming', 'Kate', 'McGraw Hill', 400),

('456E', 'Data Science', 'Nick', 'Oxford', 700),

('654F', 'SQL', 'Nick', 'Oxford', 600),

('765G','Life of Mahatma Gandhi', 'Roy', 'New Age', 1000),

('879H', 'Life of Einstein','Tom','Oreilly', 2000);

-- 1. Write a query to fetch the names of the books (Title) written by ‘John’ that costs less than 500. (1 Mark)

-- Solution:

select title from book where author\_name='John' and price<500;

-- 2. Write a query to display the publisher name who publishes books in Programming and within a price range of 500 to 1000. (2 Mark)

-- Solution:

select publisher\_name from book where title like '%programming%' and price between 500 and 1000;

-- 3. Classify the list of books based on following criteria with the column name as category:

#If the word ‘Life’ occurs in the title then categorize it into ‘Biography’

# if the word ‘programming’ or 'SQL' occurs in the title then categorize it into 'Coding'

# if the word ‘Data science’ occurs in the title then categorize it into 'ML'

# (2 Mark)

-- Solution:

select

case when title like '%life%' then 'Biography'

when title like '%programming%' or title like '%SQL%' then 'Coding'

when title like '%science%' then 'ML'

end as category, TITLE

from book;

-- 4. Write a query to display the names of all authors in lower case where book title has two occurrences of the character 'i' at any position other than first and last. (2 Mark)

-- Sample input for Title : 'Programm'i'ng 'i'n C'

-- Solution:

select lower(author\_name),title

from book

where title like '%i%i%';

-- 5. Write a query to display title, price,5% discounted price as "PaperBack Price" from book table. (2 Mark)

-- Solution:

select title, price,(price-(price \*0.05))as "PaperBack Price" from book;

-- 6. The Space X crew astronaut successfully reached international space station on ‘2018-07-08’. Estimate the number of years elapsed since he has reached the space station .(1 Mark)

create table space\_days(name varchar(10),years int);

insert into space\_days values('A',4),('B',3); -- [No schema needed]

-- Solution:

select datediff(current\_date, '2018-07-08')/365 as yearsinspace ;

-- or

select round(datediff(current\_date, '2018-07-08')/365) as yearsinspace ;

-- or

select datediff(current\_date, '2018-07-08')/365 as yearsinspace from space\_days ;

-- 7. Write a query to display publisher wise, author wise count of books. (2 Mark)

select publisher\_name, author\_name, count(\*) from book

group by publisher\_name, author\_name;

-- 8. Write a query to display publisher wise maximum price of book .(1 Mark) Do not use Analytical functions.

select max(price),publisher\_name

from book

group by publisher\_name;

-- 9. Create the below schema and solve the following queries:

CREATE TABLE Tools (

tool\_code INTEGER PRIMARY KEY NOT NULL,

tool\_name TEXT NOT NULL

);

CREATE TABLE Brand\_provider (

brand\_code VARCHAR(40)

PRIMARY KEY NOT NULL,

brand\_name TEXT NOT NULL

);

CREATE TABLE Brand\_supplies (

tool\_code INTEGER,

FOREIGN KEY (tool\_code) REFERENCES Tools(tool\_code),

brand\_code VARCHAR(40),

FOREIGN KEY (brand\_code) REFERENCES Brand\_provider(brand\_code),

Price INTEGER NOT NULL,

PRIMARY KEY(tool\_code, brand\_code)

);

-- Schema -Description

-- Table Tools-- consisting of screws,Nuts,Bolts etc

-- Table Brand\_provider--has Brand\_code and Brand\_name (e.g Susan Calvin Corp.)

-- Table Brand\_supplies--information about brand wise tools available

INSERT INTO Brand\_provider(brand\_code, brand\_name) VALUES('HAL','Clarke Enterprises'),

('RBT','Susan Calvin Corp.'),

('TNBC','Skellington Supplies');

INSERT INTO Tools(tool\_code, tool\_name) VALUES(1,'Sprocket'),

(2,'Screw'),

(3,'Nut'),

(4,'Bolt');

INSERT INTO Brand\_supplies(tool\_code, brand\_code, Price) VALUES(1,'HAL',10),

(1,'RBT',15),

(2,'HAL',20),

(2,'RBT',15),

(2,'TNBC',14),

(3,'RBT',50),

(3,'TNBC',45),

(4,'HAL',5),

(4,'RBT',7);

-- 9 .Write a query to display the Tool\_code and its average price where average price is greater than 15 .( 2 marks)

select Tool\_code, avg(price)

from Brand\_supplies

group by Tool\_code

having avg(price)>15;

-- 10. Find the names of tools supplied by 'HAL’

select Tools.tool\_name

from Tools join Brand\_supplies

on (Tools.tool\_code = Brand\_supplies.tool\_code)

where Brand\_supplies.brand\_code = 'HAL';

-- 22.Write a query to display all rows where brand names have two 's' or 'i' or "p".

-- Solution:

-- select \* from brand\_provider where brand\_name like "%s%s%" or "%l%l";

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-- =============THE END========================================