Question #1 Descriptive SQL Question   8 Marks

Table: GooglePlayStore

App	Category	Rating	Reviews	Size	Installs	Type	Price	Content Rating	Genres	Last Updated	Current Ver	Android Ver
Photo Editor & Candy Camera & Grid &	ART_AND_DESIGN	4.1	159	19M	10,000+	Free	0	Everyone	Art & Design	January 7, 2018	1.0.0	4.0.3 and up
Coloring book moana	ART_AND_DESIGN	3.9	967	14M	500,000+	Free	0	Everyone	Art & Design;F	January 15, 2018	2.0.0	4.0.3 and up
U Launcher Lite – FREE Live Cool The	ART_AND_DESIGN	4.7	87510	8.7M	5,000,000+	Free	0	Everyone	Art & Design	August 1, 2018	1.2.4	4.0.3 and up
Sketch - Draw & Paint	ART_AND_DESIGN	4.5	215644	25M	50,000,000+	Free	0	Teen	Art & Design	June 8, 2018	Varies with devi	4.2 and up
Pixel Draw - Number Art Coloring Boo	ART_AND_DESIGN	4.3	967	2.8M	100,000+	Free	0	Everyone	Art & Design;C	June 20, 2018	1.1	4.4 and up
Paper flowers instructions	ART_AND_DESIGN	4.4	167	5.6M	50,000+	Free	0	Everyone	Art & Design	March 26, 2017	1	2.3 and up
Smoke Effect Photo Maker - Smoke Ec	ART_AND_DESIGN	3.8	178	19M	50,000+	Free	0	Everyone	Art & Design	April 26, 2018	1.1	4.0.3 and up
Infinite Painter	ART_AND_DESIGN	4.1	36815	29M	1,000,000+	Free	0	Everyone	Art & Design	June 14, 2018	6.1.61.1	4.2 and up
Garden Coloring Book	ART_AND_DESIGN	4.4	13791	33M	1,000,000+	Free	0	Everyone	Art & Design	September 20, 2017	2.9.2	3.0 and up
Kids Paint Free - Drawing Fun	ART_AND_DESIGN	4.7	121	3.1M	10,000+	Free	0	Everyone	Art & Design;C	July 3, 2018		2.8 4.0.3 and up

Table: User_Session_Data

session_id	user_name	session_in_time	login_duration	session_out_time	source	ip address
cd0d1453-4613-4936-95ee-043edb764fcc	Iron Merc	16-05-2020 07:36	13.09459566	16-05-2020 07:49	browser	72.46.98.57
ff0ded3a-4448-469f-a4a4-1c82b9dc811d	FuzzySpuffy	19-08-2020 20:18	49.18974347	19-08-2020 21:07	handheld device	174.232.202.248
9e363613-0169-4a21-a7f2-d6368a7f3769	Monsterup	02-10-2019 15:19	22.80122135	02-10-2019 15:42	handheld device	133.68.114.142
8695eee4-e281-4276-abfe-185f91247e73	FuzzySpuffy	19-02-2020 07:49	50.92826978	19-02-2020 08:40	handheld device	197.193.118.74
fccd27a4-ce8a-4041-8036-4e379825eeb5	pink	26-08-2019 12:50	41.14813629	26-08-2019 13:31	handheld device	211.147.140.183
004d533b-9e70-422c-92bd-10651c399fee	Blikimore	29-01-2020 10:50	23.82782509	29-01-2020 11:14	handheld device	173.175.249.212
efab109e-942b-473b-a3a3-3616ec5dc28a	dolly	28-08-2020 13:06	45.15075784	28-08-2020 13:51	mobile app	118.90.23.199
7c0c0293-288e-407f-b330-0e0c3d5d12f7	kittykitty	23-11-2019 14:47	2.620265971	23-11-2019 14:50	browser	123.208.102.139
6751278d-afcc-41ad-8587-83074b845675	little	14-03-2020 00:22	5.358478327	14-03-2020 00:28	handheld device	91.16.90.119
23a8f428-54a9-41c0-a3df-25b03bf8751b	Linguss	11-02-2020 13:42	19.91405397	11-02-2020 14:02	browser	188.36.46.171
107e8aa9-3898-4c28-9e51-ea456e056ed2	sparkly	07-05-2020 11:25	10.01601435	07-05-2020 11:35	handheld device	21.108.176.111

An Analyst who is performing analysis on the session data of an App has noticed that few of the sessions last less than 5 seconds. He would like to perform analysis on such cohorts. Can you help him gather the data of the past 6 months needed for analysis**.**

[Note : Write a query which met/resolve the business requirement]

```
 select user_name
 from User_Session_Data
 where login_duration < 0.05
 and session_in_time between
 datesub(current_date(), interval 6 month)
 and current_date();
```

Question #2 Descriptive SQL Question   1 Marks

Which is the database functionality without which a multi-user environment could not work?

-Multi user environment are the system that support two or more simultanous users. All

mainframes are multi users
systems, but most personal computers and workstations are not.

Question #3 Descriptive SQL Question   2 Marks

How to query hierarchical structured data? Specify three main parts explaining its importance.

Many types of data are best represented as a hierarchy, such as a tree.

For Example: employees are usually organized in a hierarchy, with a company President at the top of the hierarchy.

You can store hierarchical data in:
1. A hierarchy or tables.
2. A single table with one column representing the hierarchy.
types of hierarchical structured data:-
1. Joins :-
2. CTE(common table expressions) :-commonly used with Microsoft SQL Server.
3. CONNECT BY :- widely available on Oracle database SQL.

Three main parts are:-
1. Extremely compact,
2. Comparison is in depth.
3. Support for abitary insertions and deletions.

Question #4 Descriptive SQL Question   2 Marks

Consider a scenario where you need to combine two tables, such that the resultant data should be displayed as new rows with distinct rows being displayed, you can use either JOIN OR UNION. Which one will you use? Justify your answer along with examples.

```
 select column_name from table1
UNION
select column_name from table_2;
```

- UNION
- It removes duplicate value from the two different table and join them.
- UNION is a set operator which is use for FULL-JOIN and remove the duplicate values.

Question #5 Executable SQL   3 Marks
Please Consider the below schemas/tables

marks

field	Type
Student_id	int
Marks	int

Student_id	Marks
11	78
7	80
19	91
14	40
6	69

Consider the following table **marks** which is part of a school database containing the following columns
Student_id : Storing the id of the student
Course   : Storing the name of the course
Marks   : Storing the marks obtained by the student in a particular course
WAQ to determine the ids of the students having average marks higher than the overall average. Order the results by student id in ascending order.

(Hint: Spread is a statistical measure which is the difference between highest and lowest values)

Question #6 Executable SQL   3 Marks
Please Consider the below schemas/tables

orderdetails

field	Type
OrderNumber	int
productcode	varchar(225)
quantityOrdered	int
priceEach	decimal(10,2)
orderLineNumber	int

OrderNumber	productcode	quantityOrdered	priceEach	orderLineNumber
10100	S18_1749	30	136.0	3
10100	S18_2248	50	55.09	2
10100	S18_4409	22	75.46	4
10100	S24_3969	49	35.29	1

10101	S18_2325	25	108.06	4

There are some orders that have multiple order amounts corresponding to the same order. Write a query to retrieve the individual and total order amounts for each order along with the order numbers. Order the values in the increasing order of the order numbers. For similar order numbers, arrange the individual order amounts in the decreasing order.

```sql
select *, sum(tamount) over(partition by ordernumber order by tamount desc) as amount
from (select ordernumber, quantityOrdered*priceEach as tamount from orderdetails) a;
```

Affected_rows: 10

ordernumber	tamount	amount
10100	4080.0	4080.0
10100	2754.5	6834.5
10100	1729.21	8563.71
10100	1660.12	10223.83
10101	4343.56	4343.56
10101	2701.5	7045.06
10101	2040.1	9085.16

10101	1463.85	10549.01
10102	3726.45	3726.45
10102	1768.33	5494.78

Question #7 Executable SQL   5 Marks
Please Consider the below schemas/tables

product

field	Type
Product_id	char(3)
Product_name	varchar(24)
Price	int
Product_Category	varchar(45)

Product_id	Product_name	Price	Product_Category
P01	iphone 11	64000	Mobile
P02	ipad pro	81000	Tablet
P03	macbook air	75000	Laptop
P04	Sony 43 inch	55000	TV
P05	Samsung M31S	22000	Mobile

WAQ to returns all products and the average standard cost based on the product category:.
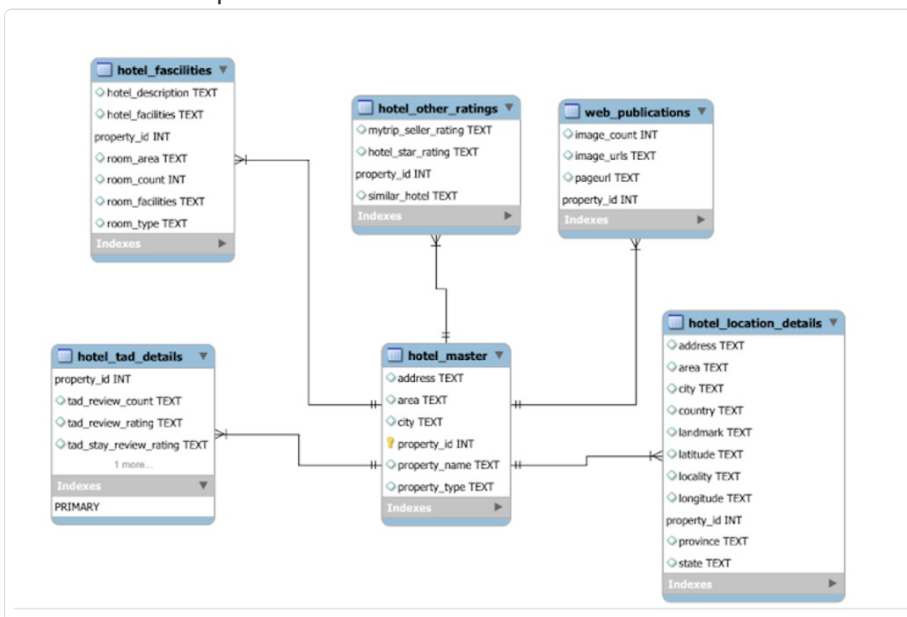
```
select product_id, product_name, avg(abs(price)) over(partition by product_category) from
product;
```

Affected_rows: 9

product_id	product_name	avg(abs(price)) over(partition by product_category)
P08	logi Keyboard	8500.0
P09	Apple Pencil	8500.0
P03	macbook air	75000.0
P01	iphone 11	31666.6667
P05	Samsung M31S	31666.6667
P06	Samsung A01	31666.6667
P02	ipad pro	81000.0
P04	Sony 43 inch	50000.0
P07	Samsung 43 inch	50000.0

Question #8 Descriptive SQL Question   8 Marks

What is the average ratings for the location for the hotels in Kolkata.
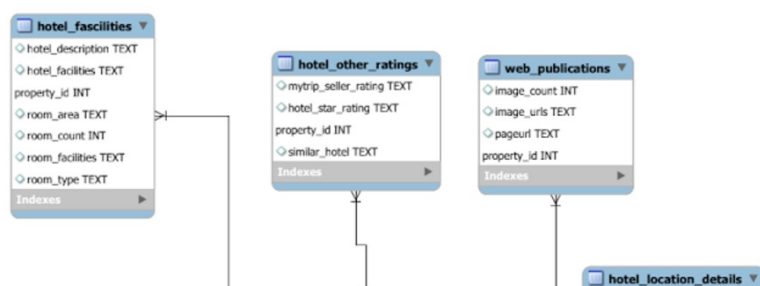
[Note : Write a query which met/resolve the business requirement]
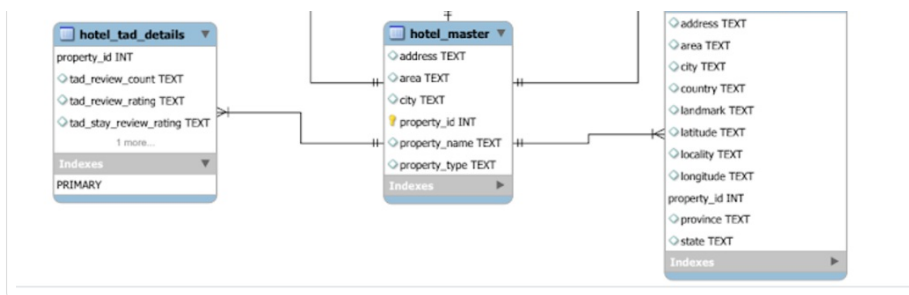
```
 select hld.property_id, avg(mytrip_seller_rating) over(partition by hld.city) msr,
avg(hotel_star_rating) over(partition by hld.city) hsr,
avg(tad_review_rating) over(partiton by hld.city) trr from
hotel_other_rating hor join hotel_location_details as  hld on hor.property_id = hld.property_id
join hotel_tad_details htd on hld.property_id = htd.property_id
where hld.city = 'Kolkata';
```

Question #9 Descriptive SQL Question   6 Marks

hotel_fascilities
- hotel_description TEXT
- hotel_facilities TEXT
- property_id INT
- room_area TEXT
- room_count INT
- room_facilities TEXT
- room_type TEXT
- Indexes

hotel_other_ratings
- mytrip_seller_rating TEXT
- hotel_star_rating TEXT
- property_id INT
- similar_hotel TEXT
- Indexes

web_publications
- image_count INT
- image_urls TEXT
- pageurl TEXT
- property_id INT
- Indexes

hotel_location_details

hotel_tad_details
- property_id INT
- tad_review_count TEXT
- tad_review_rating TEXT
- tad_stay_review_rating TEXT
- 1 more...
- Indexes
- PRIMARY

hotel_master
- address TEXT
- area TEXT
- city TEXT
- property_id INT
- property_name TEXT
- property_type TEXT
- Indexes

- address TEXT
- area TEXT
- city TEXT
- country TEXT
- landmark TEXT
- latitude TEXT
- locality TEXT
- longitude TEXT
- property_id INT
- province TEXT
- state TEXT
- Indexes

Seller ratings are an automated extension type that showcase advertisers with high ratings. Seller ratings, which appear below text ads, help people find businesses that offer quality services. Seller ratings can help advertisers improve ad performance and earn more qualified leads.   For every city, find out hotels with high seller ratings.

[Note : Write a query which met/resolve the business requirement]

Question #10 Descriptive SQL Question   8 Marks

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Coloring book moana	ART_AND_DESIGN	3.9	967	14M	500,000+	Free	0	Everyone	Art & Design;Pretend Play	January 15, 2018	2.0.0	4.0.3 and up
U Launcher Lite – FREE Live Cool The	ART_AND_DESIGN	4.7	87510	8.7M	5,000,000+	Free	0	Everyone	Art & Design	August 1, 2018	1.2.4	4.0.3 and up
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Smoke Effect Photo Maker - Smoke Ec	ART_AND_DESIGN	3.8	178	19M	50,000+	Free	0	Everyone	Art & Design	April 26, 2018		1.1 4.0.3 and up
Infinite Painter	ART_AND_DESIGN	4.1	36815	29M	1,000,000+	Free	0	Everyone	Art & Design	June 14, 2018	6.1.61.1	4.2 and up
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Kids Paint Free - Drawing Fun	ART_AND_DESIGN	4.7	121	3.1M	10,000+	Free	0	Everyone	Art & Design;Creativity	July 3, 2018		2.8 4.0.3 and up

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004d533b-9e70-422c-92bd-10651c399fee	Blikimore	29-01-2020 10:50	23.82782509	29-01-2020 11:14	handheld device	173.175.249.212
efab109e-942b-473b-a3a3-3616ec5dc28a	dolly	28-08-2020 13:06	45.15075784	28-08-2020 13:51	mobile app	118.90.23.199
7c0c0293-288e-407f-b330-0e0c3d5d12f7	kittykitty	23-11-2019 14:47	2.620265971	23-11-2019 14:50	browser	123.208.102.139
6751278d-afcc-41ad-8587-83074b845675	little	14-03-2020 00:22	5.358478327	14-03-2020 00:28	handheld device	91.16.90.119
23a8f428-54a9-41c0-a3df-25b03bf8751b	Linguss	11-02-2020 13:42	19.91405397	11-02-2020 14:02	browser	188.36.46.171
107e8aa9-3898-4c28-9e51-ea456e056ed2	sparkly	07-05-2020 11:25	10.01601435	07-05-2020 11:35	handheld device	21.108.176.111

An Analyst needs data about the sessions which lasted for more than 1 minute(60 seconds). Can you help him gather the data of the past 10 months needed for analysis.

[Note : Write a query which met/resolve the business requirement]

```
 select user_name, login_duration from User_Session_Data where
login_duration >= 60 and session_in_time between
date_sub(current_date(), interval 10 month) and current_date;
```

Question #11 Descriptive SQL Question   4 Marks

Consider a table consisting of the studentinfo of students in a mathematics test along with their unique student_id. Write a query to determine which students got marks that are divisible by 10 and which students did not by creating a virtual table. Make sure that the output is ordered by student_id .

Student_id	Marks
1	90
6	69
19	91

Student_id	Marks	div_by_ten
1	90	yes
6	69	no

```
create view st as
select student_id, marks, (case when marks % 10 = 0 then 'YES' else 'NO') dt
from studentinfo;
```