

## MARKING SCHEME

### SAMPLE PAPER -1

### INFORMATICS PRACTICES(065) - XII

### TERM - 2

**Q1.** Mr. Lal owns a factory which manufactures automobile spare parts. Suggest him the advantages of having a web page for his factory. (2)

**ANS:** The web page provides the information to the clients about his factory of spare parts. Moreover, he can receive the order on the Internet from the clients using the web page.

**OR**

Sahil, a Class X student, has just started understanding the basics of Internet and web technologies. He is a bit confused in between the terms "World Wide Web" and "Internet". Help him in understanding both the terms with the help of suitable examples of each.

**ANS:** World Wide Web is a set of programs, standards and protocols that allows the multimedia and hypertext files to be created, displayed and linked on the Internet.

e.g. [www.microsoft.com](http://www.microsoft.com), [www.amazon.com](http://www.amazon.com), etc.

Internet is a computer-based world wide communications network, which is composed of large number of smaller interconnected networks.

e.g. Web, E-mails, Social media, etc.

While Internet is a collection of computers or networking devices connected together; WWW is a collection of documents, linked via special links called hyperlinks. WWW forms a large part of Internet but is not the Internet.

**Q2.**

(i) Which of the following entries is different from others? Why? (1)

**Safari , Chrome, Netscape , Facebook**

**ANS:** Facebook: It is a social networking site while others are web browsers.

(ii) Name any two popular chat application / software.

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**ANS:** WhatsApp, Telegram, hangout etc. or Any other correct name

**Q3.** Predict the output of the following queries:

- i. `Select Round(153.669,2);`
- ii. `Select Concat("It", "was", "Great");`

ANS: (i) 153.67

(ii) ItwasGreat

OR

Briefly explain the purpose of the following SQL functions:

- i. `Round()`
- ii. `Concat()`

ANS: i) `Round()`:

ii) `Concat()`:

**Q4:** Navya has just created a website for her company and now need to host it. Briefly discuss the role of web pages in a website. (2)

**ANS:** Web page:

Web page

- It is part of website that includes information and content and is displayed on the browser to user or visitor.
- It is a single document display on the browser.
- Information is usually written in HTML language.
- It is content displayed on the website.
- It includes content or information about a single entity.
- It can be accessed through web browser.
- URL of web page includes extension.
- It might include text, graphics, hyperlinks, etc.
- They are used to provide information with related pictures, videos to users.

**Q5.** Are `Count(*)` and `Count(column-name)` the same function? Why/why not? (2)

**ANS:** No, `Count(*)` and `count( column-name)` are not the same.

While `Count(*)` counts and returns the number of records in a table, `count( column-name)` counts the number of records where the mentioned column name is not null.

**Q6.** Aryan, a database administrator, has grouped records of a table with the help of group by clause.

He needs to further filter groups of records generated through group by clause.

Help Aryan in deciding out of 'where' clause and 'having' clause.

(2)

ANS: WHERE clause and HAVING clause

- WHERE clause is used to filter the records from the table based on the specified condition.  
HAVING clause is used to filter record from the groups based on the specified condition.
- WHERE clause implements in row operation.  
HAVING clause implements in column operation.
- WHERE clause cannot contain aggregate function.  
HAVING clause can contain aggregate function.
- WHERE clause can be used with SELECT, UPDATE, DELETE statement.  
HAVING clause can only be used with SELECT statement.
- WHERE clause is used with single row function like UPPER, LOWER etc.  
HAVING clause is used with multiple row function like SUM, COUNT etc

**Q7.** Mr. Som, a HR Manager in a multinational company "Star-X world" has created the following table to store the records of employees:

(2)

**Table: Emp**

| Eid   | EName   | Department | DOB        | DOJ        |
|-------|---------|------------|------------|------------|
| Star1 | Ivan    | Sales      | 1994-08-28 | 2020-02-14 |
| Star2 | Melinda | IT         | 1997-10-15 | 2021-11-19 |
| Star3 | Raj     | Accounts   | 1998-10-02 | 2019-04-02 |
| Star4 | Michael | Sales      | 2000-02-17 | 2020-05-01 |
| Star5 | Sajal   | IT         | 2001-12-05 | 2018-06-13 |
| Star6 | John    | Accounts   | 1995-01-03 | 2019-07-15 |
| Star7 | Julia   | Sales      | 1985-11-13 | 2020-08-19 |

He has written following queries:

i) Select min(month(DOB)) from emp;

ii) Select ENAME from emp where year(DOJ)=2020;

Predict the output.

Ans: (i) 01

(ii) Ivan

Michael

Julia

**Q8.** Predict the output of the following queries:

- i) `SELECT RIGHT('EXAMS@CBSE2022.NIC.IN',6);`
- ii) `SELECT SUBSTR('EXAMS@CBSE2022.NIC.IN',7,4);`
- iii) `SELECT LEFT('EXAMS@CBSE2022.NIC.IN',5);`

ANS:

- i) NIC.IN
- ii) CBSE
- iii) EXAMS

**OR**

Ms.Seema is working on a MySQL table named '**Sales**' having following structure:

| Column Name | Data Type | Size | Constraints |
|-------------|-----------|------|-------------|
| Orderid     | Integer   | 4    | Primary Key |
| Pname       | Varchar   | 20   | Not Null    |
| Quantity    | Integer   | 5    | Not Null    |
| Rate        | Integer   | 5    | Not Null    |
| Discount    | Integer   | 3    | Null        |
| City        | Varchar   | 20   | Null        |

She need to perform following task on the table:

- i. To fetch last 2 characters from the Orderid column.
- ii. To display the values of Pname column in lower case.
- iii. To display 3 characters from 3rd place from the column city.

Suggest suitable SQL function for the same. Also write the query to achieve the desired task.

**ANS:**

i. right()

```
select right(user_id,2) from hotel;
```

ii. lower()

```
select lower(name) from hotel;
```

iii. mid()/substr()/substring()

```
Select mid(city,3,3) from hotel;
```

**Q9.** Reena is working with functions of MySQL. Explain her following:

i. What is the purpose of now () function?

ii. How many parameters does it accept?

iii. What is the general format of its return type?

ANS:

i. It returns the current date and time.

ii. None

iii. The return type for NOW() function is either in 'YYYYMM-DD HH:MM:SS' format or

YYYYMMDDHHMMSS.ffffff format, depending on whether the function is used in a string or numeric context.

**Q10.**

i. Gopi Krishna is using a table Employee. It has the following columns : (1)

Code, Name, Salary, Dept\_code

He wants to display maximum salary department wise. He wrote the following command:

```
SELECT Deptcode, Max(Salary) FROM Employee;
```

But he did not get the desired result. Rewrite the above query with necessary changes to help him get the desired output.

ii. The SQL SELECT provides clauses for sorting data and for summarizing results. Write the names of clauses for these.

**ANS:**

i) SELECT Deptcode, Max(Salary)

FROM Employee

GROUP BY Deptcode;

ii) Order By for Sorting data and Group By clause for summarizing data.

**Q11.** Write the output of the queries (a) to (d) based on the table, Graduate given below: (4)

| SID | Name    | Subject     | Marks | Div |
|-----|---------|-------------|-------|-----|
| 1   | Karan   | Physics     | 68    | 1   |
| 2   | Divakar | Computers   | 68    | 1   |
| 3   | Divya   | Chemistry   | 62    | 2   |
| 4   | Arun    | Physics     | 63    | 1   |
| 5   | Sabina  | Mathematics | 70    | 1   |
| 6   | John    | Chemistry   | 55    | 2   |
| 7   | Robert  | Physics     | 64    | 1   |
| 8   | Rubina  | Mathematics | 68    | 1   |
| 9   | Vikas   | Computers   | 62    | 1   |
| 10  | Mohan   | Mathematics | 57    | 2   |

Write SQL queries for the following:

(a) To display the records in decreasing order of Name.

(b) To display subject and subject wise total Div of Students from Graduate table.

(c) To display the Subject and its average Marks of table Graduate.

(d) To display subject and subject wise highest mark of student from Graduate table.

**ANS:**

(a) Select \* from Graduate order by Name desc;

(b) Select subject, sum(Div) from Graduate group by subject;

(c) Select subject, avg(marks) from Graduate group by subject;

(d) Select subject, max(marks) from Graduate group by subject;

**Q12.** Satyam, a database analyst has created the following table:

**Table Teacher:**

| TID | Name    | Age | Department | DOJ      | Salary | Sex |
|-----|---------|-----|------------|----------|--------|-----|
| 1   | Karan   | 34  | Computer   | 10/01/97 | 12000  | M   |
| 2   | Divya   | 31  | History    | 24/03/98 | 20000  | F   |
| 3   | Divyank | 32  | Maths      | 12/12/96 | 30000  | M   |
| 4   | Aruna   | 35  | History    | 01/07/99 | 40000  | F   |
| 5   | Sabir   | 42  | Maths      | 05/09/97 | 25000  | M   |
| 6   | John    | 50  | History    | 27/06/98 | 30000  | M   |
| 7   | Robert  | 44  | Computer   | 25/02/97 | 21000  | M   |
| 8   | Rubina  | 33  | Maths      | 31/07/97 | 20000  | F   |

- i) Select COUNT(distinct department) from Teacher;
- ii) Select Max(salary) + Min(salary) from Teacher Where Sex = 'F';
- iii) Select AVG(Salary) from Teacher Where DOJ < '12/07/96';
- iv) Select Concat(Name,Department) from Teacher Where Department = 'Computer';

Help him in predicting the output of the above given queries.

**ANS:**

- i) 3
- ii) 60000
- iii) 0
- iv) KaranComputer  
RobertComputer

**OR**

Based on the above given table named 'Teacher', Satyam has executed following queries:

**Select Department, Max(Salary) from Teacher where Department = 'Maths';**

**Select Department, Max(Salary) from Teacher Group By Department ;**

Predict the output of the above given queries.



Also give proper justifications of the output generated through each query.

ANS:

First query will produce the output

Maths 30000

Justification: Max(Salary) will return the maximum (highest) salary and display from maths department.

Second query will produce the output :

Computer 21000

History 40000

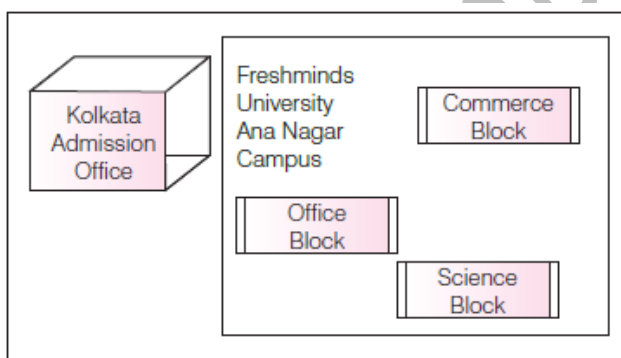
Maths 30000

Justification: Max(salary) function with group by clause return the maximum salary department wise.

**Q13.** Freshminds University of India is starting its first campus in Ana Nagar of South India with its centre admission office in Kolkata. The university has three major blocks comprising of Office block, Science block and Commerce block is in 5 km area campus.

As a network expert, you need to suggest the network plan as per (i) to (iv) to the authorities keeping in mind the distance and other given parameters.

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**Expected number of computers to be installed at various locations in the university are as follows:**

|                          |     |
|--------------------------|-----|
| Office Block             | 10  |
| Science Block            | 140 |
| Commerce Block           | 30  |
| Kolkata Admission Office | 8   |

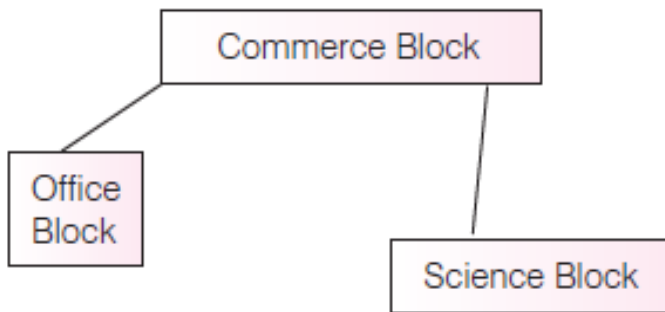
| Expected wire distance between various locations |        |
|--|--------|
| Office Block to Science Block                    | 90 m   |
| Office Block to Commerce Block                   | 80 m   |
| Science Block to Commerce Block                  | 15 m   |
| Kolkata Admission Office to Ana Nagar Campus     | 450 km |



- (i) Suggest the authorities, the cable layout amongst various blocks inside university campus for connecting the blocks.
- (ii) Suggest the most suitable place (i.e. block) to house the server for this university with a suitable reason.
- (iii) Suggest an efficient device form the following to be installed in each of the block to connect all the computers.
- (a) Modem      (b) Switch      (c) Gateway
- (iv) University is planning to connect its campus in Kolkata which is more than 100 km. Which type of network will be formed?

ANS:

(i)



- (ii) The most suitable place to house the server is Science Block as it has maximum number of computers. Thus, reducing the cabling cost and increases efficiency of network.
- (iii) (b) Switch is the device to be installed in each of the blocks to connect all the computers.
- (iv) Satellite connection (Wireless Connection) / Broadband Connection (Wired Connection).