

Sample Question Paper

INFORMATICS PRACTICES (Code : 065)

Maximum Marks: 35

Time: 2 hours

General Instructions

- The question paper is divided into 3 sections – A, B and C
- Section A, consists of 7 questions (1-7). Each question carries 2 marks.
- Section B, consists of 3 questions (8-10). Each question carries 3 marks.
- Section C, consists of 3 questions(11-13). Each question carries 4 marks.
- Internal choices have been given for question numbers – 1 , 3, 8 and 12.

Section –A			
Each question carries 2 marks			
Q. No	Part No.	Question	Marks
1.		<p>Aman, a freelance web site developer, has been assigned a task to design few web pages for a book shop. Help Aman in deciding out of static web page and dynamic web page, what kind of web pages should be designed by clearly differentiating between static and dynamic web pages on at least two points.</p> <p>OR</p> <p>Priyanka, a beginner in IT field has just started learning web technologies. Help her in understanding the difference between website and web pages with the help of a suitable general example of each.</p>	(2)
2.	(i)	<p>I :</p> <ul style="list-style-type: none">• am a small text file• created on a user’s computer• contain small pieces of data — like a username, password and user’s browsing history as well as preferences• may help to improve user’s web browsing experience. <p>Who am I?</p>	(1)
	(ii)	Name any two popular web browsers.	(1)

3.	<p>Predict the output of the following queries: i. Select power(5,3); ii. Select mod(5,3);</p> <p style="text-align: center;">OR</p> <p>Briefly explain the purpose of the following SQL functions: i. power() ii. mod()</p>	(2)																																								
4.	<p>Navya has just created a website for her company and now need to host it. Briefly discuss the role of a web server in hosting a website.</p>	(2)																																								
5.	<p>Help Reshma in predicting the output of the following queries: i) select round(8.72,3); ii) select round(9.8);</p>	(2)																																								
6.	<p>Aryan, a database administrator, has grouped records of a table with the help of group by clause.</p> <p>He needs to further filter groups of records generated through group by clause.</p> <p>Suggest suitable clause for it and properly explain its usage with the help of an example.</p>	(2)																																								
7.	<p>Mr. Som, a HR Manager in a multinational company “Star-X world” has created the following table to store the records of employees: Table: Emp</p> <table border="1" data-bbox="351 1217 1187 1540"> <thead> <tr> <th>Eid</th> <th>EName</th> <th>Department</th> <th>DOB</th> <th>DOJ</th> </tr> </thead> <tbody> <tr> <td>Star1</td> <td>Ivan</td> <td>Sales</td> <td>1994-08-28</td> <td>2020-02-14</td> </tr> <tr> <td>Star2</td> <td>Melinda</td> <td>IT</td> <td>1997-10-15</td> <td>2021-11-19</td> </tr> <tr> <td>Star3</td> <td>Raj</td> <td>Accounts</td> <td>1998-10-02</td> <td>2019-04-02</td> </tr> <tr> <td>Star4</td> <td>Michael</td> <td>Sales</td> <td>2000-02-17</td> <td>2020-05-01</td> </tr> <tr> <td>Star5</td> <td>Sajal</td> <td>IT</td> <td>2001-12-05</td> <td>2018-06-13</td> </tr> <tr> <td>Star6</td> <td>John</td> <td>Accounts</td> <td>1995-01-03</td> <td>2019-07-15</td> </tr> <tr> <td>Star7</td> <td>Julia</td> <td>Sales</td> <td>1985-11-13</td> <td>2020-08-19</td> </tr> </tbody> </table> <p>He has written following queries: i) select max(year(DOB)) from emp; ii) select ENAME from emp where month(DOJ)=11;</p> <p>Predict the output.</p> <p style="text-align: center;">OR</p>	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	(2)
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		Based on the table given above, help Mr. Som writing queries for the following task: i) To display the name of eldest employee and his/her date of birth. ii) To display the name of those employees whose joining month is May.																															
		SECTION – B Each question carries 3 marks																															
8.		<p>Predict the output of the following queries:</p> <ol style="list-style-type: none"> i. <code>select instr('exams@cbse.nic.in','');</code> ii. <code>select substr('exams@cbse.nic.in',7,4);</code> iii. <code>select left('exams@cbse.nic.in',5);</code> <p style="text-align: center;">OR</p> <p>Ms.Saumya is working on a MySQL table named 'Hotel' having following structure:</p> <table border="1" style="background-color: #f0f0f0; border-collapse: collapse; width: 100%;"> <thead> <tr> <th>Field</th> <th>Type</th> <th>Null</th> <th>Key</th> <th>Default</th> <th>Extra</th> </tr> </thead> <tbody> <tr> <td>user_id</td> <td>varchar(20)</td> <td>YES</td> <td></td> <td>NULL</td> <td></td> </tr> <tr> <td>name</td> <td>varchar(20)</td> <td>YES</td> <td></td> <td>NULL</td> <td></td> </tr> <tr> <td>city</td> <td>varchar(20)</td> <td>YES</td> <td></td> <td>NULL</td> <td></td> </tr> <tr> <td>mobile_no</td> <td>varchar(11)</td> <td>YES</td> <td></td> <td>NULL</td> <td></td> </tr> </tbody> </table> <p>She need to perform following task on the table:</p> <ol style="list-style-type: none"> i. To fetch last 2 characters from the user_id column. ii. To display the values of name column in lower case. iii. To display 3 characters from 3rd place from the column city. <p>Suggest suitable SQL function for the same. Also write the query to achieve the desired task.</p>	Field	Type	Null	Key	Default	Extra	user_id	varchar(20)	YES		NULL		name	varchar(20)	YES		NULL		city	varchar(20)	YES		NULL		mobile_no	varchar(11)	YES		NULL		(3)
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mobile_no	varchar(11)	YES		NULL																													
9.		<p>Reena is working with functions of MySQL. Explain her following:</p> <ol style="list-style-type: none"> 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? 	(3)																														
10.		<p>While dealing with string data type in MySQL, its observed that sometimes unnecessary space character comes in between which hampers the successful execution of a string manipulation module. Name the suitable MySQL function (s) to remove leading, trailing and both type of space characters from a string. Also give MySQL queries to depict the same.</p>	(3)																														
		Section C																															

Each question carries 4 marks

11.

Carefully observe the following table named 'stock':

(4)

Table: stock

Pid	PName	Category	Qty	Price
1	Keyboard	IO	15	450
2	Mouse	IO	10	350
3	Wifi-router	NW	5	2600
4	Switch	NW	3	3000
5	Monitor	O	10	4500
6	Printer	O	4	17000

Write SQL queries for the following:

- (a) To display the records in decreasing order of price.
- (b) To display category and category wise total quantities of products.
- (c) To display the category and its average price.
- (d) To display category and category wise highest price of the products.

12.

Satyam, a database analyst has created the following table:

(4)

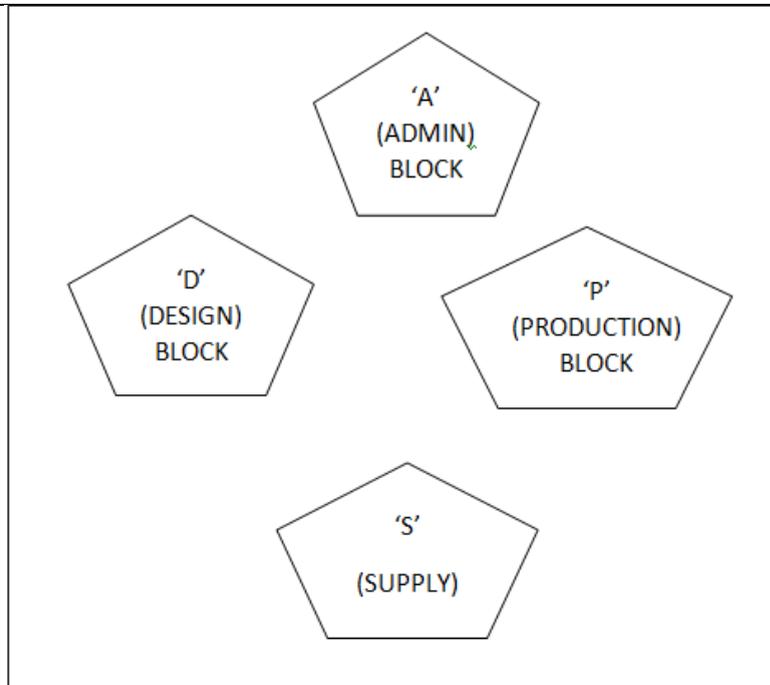
Table: Student

RegNo	SName	Stream	Optional	Marks
S1001	Akshat	Science	CS	99
S1002	Harshit	Commerce	IP	95
S1003	Devika	Humanities	IP	100
S1004	Manreen	Commerce	IP	98
S1005	Gaurav	Humanities	IP	82
S1006	Saurav	Science	CS	NULL
S1007	Bhaskar	Science	CS	95
S1007	Bhaskar	Science	CS	96

He has written following queries:

- (a) select sum(MARKS) from student where OPTIONAL= 'IP' and STREAM= 'Commerce';
- (b) select max(MARKS)+min(MARKS) from student where OPTIONAL= 'CS';
- (c) select avg(MARKS) from student where OPTIONAL= 'IP';
- (d) select length(SNAME) from student where MARKS is NULL;

	<p>Help him in predicting the output of the above given queries.</p> <p style="text-align: center;">OR</p> <p>Based on the above given table named 'Student', Satyam has executed following queries:</p> <p>Select count(*) from student; Select count(MARKS) from student;</p> <p>Predict the output of the above given queries. Also give proper justifications of the output generated through each query.</p>																					
13.	<p>"Anutulya Creations"-A start-up fashion house has set up its main centre at Kanpur, Uttar Pradesh for its dress designing, production and dress supplying activities. It has 4 blocks of buildings.</p> <p>Distance between the various blocks is as follows:</p> <table style="margin-left: 40px;"> <tr><td>A to D</td><td>50 m</td></tr> <tr><td>A to P</td><td>60 m</td></tr> <tr><td>A to S</td><td>110m</td></tr> <tr><td>D to S</td><td>60m</td></tr> <tr><td>P to S</td><td>50m</td></tr> <tr><td>P to D</td><td>150m</td></tr> </table> <p>Numbers of computers in each block</p> <table style="margin-left: 40px;"> <tr><td>Block A -</td><td>20</td></tr> <tr><td>Block D -</td><td>80</td></tr> <tr><td>Block P -</td><td>15</td></tr> <tr><td>Block S -</td><td>8</td></tr> </table>	A to D	50 m	A to P	60 m	A to S	110m	D to S	60m	P to S	50m	P to D	150m	Block A -	20	Block D -	80	Block P -	15	Block S -	8	(4)
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Based on the above specifications, answer the following questions:

- (a) Out of LAN, WAN and MAN, what type of network will be formed if we interconnect different computers of the campus? Justify.
- (b) Suggest the topology which should be used to efficiently connect various blocks of buildings within Kanpur centre for fast communication.
Also draw the cable layout for the same.
- (c) Suggest the placement of the following device with justification
 - i. Repeater
 - ii. Hub/Switch
- (d) Now a day, video-conferencing software is being used frequently by the company to discuss the product details with the clients. Name any one video conferencing software.
Also mention the protocol which is used internally in video conferencing software.

MARKING SCHEME

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		Section –A Each question carries 2 marks							
Q. No	Part No.	Question	Marks						
1.		<p>Differentiation between static and dynamic web pages:</p> <table border="1"><thead><tr><th>Static Web page</th><th>Dynamic Web page</th></tr></thead><tbody><tr><td>1. Content of this type of webpage cannot be changed at run time.</td><td>1. Content of this type of webpage can be changed at run time.</td></tr><tr><td>2. No interaction with server's database is possible in case of static web pages.</td><td>3. Interaction with server's database is possible in case of dynamic web pages.</td></tr></tbody></table> <p>1 mark each for each correct differentiation mentioned above or any other relevant point of differentiation.</p> <p>OR</p> <p>The difference between a website and a web page is that a website is a collection of different web pages containing information on a particular topic. A web page is an individual page of a big website usually containing more specific information. If we compare a website with a book, then a webpage can be compared with a single page of that book.</p> <p>2 marks for correct answer</p>	Static Web page	Dynamic Web page	1. Content of this type of webpage cannot be changed at run time.	1. Content of this type of webpage can be changed at run time.	2. No interaction with server's database is possible in case of static web pages.	3. Interaction with server's database is possible in case of dynamic web pages.	(2)
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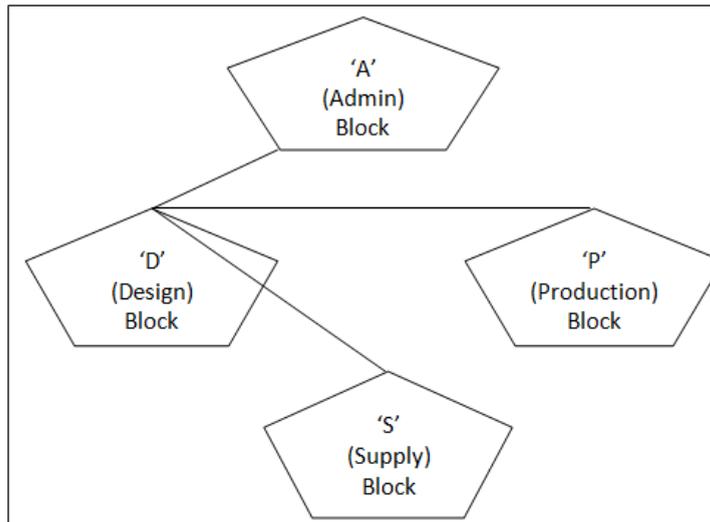
2.	(i)	Cookies 1 mark for correct answer	(1)
	(ii)	Name of any two popular web browsers: <ul style="list-style-type: none"> • Mozilla firefox • Google Chrome OR Any other correct name ½ mark each for each correct browser name	(1)
3.		Output: i. 125 ii. 2 1 Mark for each correct answer <p style="text-align: center;">OR</p> i. power(): It returns the value of a number raised to the power of another number. For example: Select power(5,3); Output: 125 ii. mod(): It returns the remainder of a number divided by another number. For example: Select mod(5,3); Output: 2 1 Mark for each correct answer	(2)
4.		Role of web server in hosting a website: A web server is the main centralized computer system that hosts and runs the websites. It has a computer program that distributes web pages as they are requisitioned. The basic role of the web server is to store, process and deliver the web pages to the users as and when required. 2 Marks for correct answer	(2)

5.	<p>Output: i) 8.720 ii) 10</p> <p>1 Mark for each correct answer</p>	(2)																																								
6.	<p>Having clause is used to further filter those groups of records which will be generated through group by clause.</p> <p>For example:</p> <p>Select max(marks) from student group by classes having classes in (10,12);</p> <p>Above given query will arrange records in groups according to the classes. Further filtering on these groups will happen through having clause, which will finally display the highest marks from classes 10 and 12.</p> <p>1 Mark for correct clause 1 Mark for correct example</p>	(2)																																								
7.	<p>Mr. Som, a HR Manager in a multinational company “Star-X world” has created the following table to store the records of employees:</p> <p>Table: Emp</p> <table border="1" data-bbox="351 1084 1187 1407"> <thead> <tr> <th>Eid</th> <th>EName</th> <th>Department</th> <th>DOB</th> <th>DOJ</th> </tr> </thead> <tbody> <tr> <td>Star1</td> <td>Ivan</td> <td>Sales</td> <td>1994-08-28</td> <td>2020-02-14</td> </tr> <tr> <td>Star2</td> <td>Melinda</td> <td>IT</td> <td>1997-10-15</td> <td>2021-11-19</td> </tr> <tr> <td>Star3</td> <td>Raj</td> <td>Accounts</td> <td>1998-10-02</td> <td>2019-04-02</td> </tr> <tr> <td>Star4</td> <td>Michael</td> <td>Sales</td> <td>2000-02-17</td> <td>2020-05-01</td> </tr> <tr> <td>Star5</td> <td>Sajal</td> <td>IT</td> <td>2001-12-05</td> <td>2018-06-13</td> </tr> <tr> <td>Star6</td> <td>John</td> <td>Accounts</td> <td>1995-01-03</td> <td>2019-07-15</td> </tr> <tr> <td>Star7</td> <td>Julia</td> <td>Sales</td> <td>1985-11-13</td> <td>2020-08-19</td> </tr> </tbody> </table> <p>Output:</p> <p>i) 2001 ii) Melinda</p> <p>1 Mark for each correct answer</p> <p style="text-align: center;">OR</p> <p>Queries:</p>	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	(2)
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		<p>i) select ENAME,min(year(DOB)) from emp;</p> <p>ii) select ENAME from emp where month(DOJ)=5;</p> <p>1 Mark for each correct answer</p>	
		<p>SECTION – B</p> <p>Each question carries 3 marks</p>	
8.		<p>Output:</p> <p>i. 11</p> <p>ii. cbse</p> <p>iii. exams</p> <p>1 Mark for each correct answer</p> <p style="text-align: center;">OR</p> <p>i. right() select right(user_id,2) from hotel;</p> <p>ii. lower() select lower(name) from hotel;</p> <p>iii. mid()/substr()/substring() Select mid(city,3,3) from hotel;</p> <p>½ Mark for suggesting each correct function name</p> <p>½ Mark for writing each correct query</p>	(3)
9.		<p>i. It returns the current date and time.</p> <p>ii. None</p> <p>iii. The return type for NOW() function is either in 'YYYY-MM-DD HH:MM:SS' format or YYYYMMDDHHMMSS.uuuuuu format, depending on whether the function is used in a string or numeric context.</p> <p>1 Mark for each correct answer</p>	(3)
10.		<p>i. To remove leading space characters: ltrim()</p> <p>ii. To remove trailing space characters: rtrim()</p> <p>iii. To remove both type of space characters: trim()</p> <p>MySQL Queries:</p> <p>Select ltrim(' Hello ');</p> <p>Select rtrim(' Hello ');</p> <p>Select trim(' Hello ');</p> <p>Output:</p>	(3)

		<p>Hello</p> <p>½ Mark for suggesting each correct function name ½ Mark for writing each correct MySQL query</p>	
		<p>Section C</p> <p>Each question carries 4 marks</p>	
11.		<p>(a) select * from stock order by price desc; (b) select category, sum(qty) from stock group by category; (c) select category,avg(price) from stock group by category; (d) select category, max(price) from stock group by category;</p> <p>1 Mark for each correct query</p>	(4)
12.		<p>Output:</p> <p>(a) 193 (b) 194 (c) 93.75 (d) 6</p> <p>1 Mark for each correct output</p> <p style="text-align: center;">OR</p> <p>First query will produce the output 7. Justification: count (*) will count and display total number of rows (irrespective of any null value present in any of the column).</p> <p>Second query will produce the output 6. Justification: count (col_name) will count and display total number of not null values in the specified column.</p> <p>1 Mark each for each correct output 1 Mark each for each correct justification</p>	(4)
13.		<p>(a) LAN As computers are placed with-in the same campus with-in a small range.</p> <p>½ Mark for correct answer ½ Mark for correct justification</p> <p>(b) Star topology ½ Mark for correct answer</p>	(4)

Cable Layout:



½ Mark for correct cable layout

(c)

- i. Repeater should be placed in between Block 'D' (Design) and Block 'P' as distance is more.
- ii. Hub/Switch should be placed in each building to connect various computers together.

½ Mark for each correct answer

(d) Video Conferencing software: Teams, Zoom, Skype etc.
(Any one)

Protocol of Video Conferencing software: VOIP

½ Mark for each correct answer