

GENERAL INSTRUCTIONS:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 mark each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. Section D has 02 questions carrying 04 marks each.
7. Section E has 03 questions carrying 05 marks each.
8. All programming questions are to be answered using Python Language only.

Q.No.	Section-A	Marks
1	Which among the following is not a multiple row function in SQL? i. SUM() ii. COUNT() iii. AVG() iv. TOTAL()	1
2	A _____ is a device that connects the organisation's network with the outside world of the Internet. i. Hub ii. Modem iii. Gateway iv. Repeater	1
3	Given a Pandas series called Sequences, the command which will display the first 4 rows is _____. a. print(Sequences.head(4)) b. print(Sequences.Head(4)) c. print(Sequences.heads(4)) d. print(Sequences.Heads(4))	1
4	Copyright, Patent and Trademark comes under: i. Intellectual Property Right ii. Individual Property Right iii. Industrial Property Right	1

	ii. to_csv() iii. read_csv() iv. writecsv()	
14	The avg() function in MySql is an example of _____. a. Math function b. Text function c. Date Function d. Aggregate Function.	1
15	If a column MARKS of table EXAM contains values (99, 87, 84, NULL, 88), what will be output of following query? SELECT COUNT(MARKS) FROM EXAM; i. 5 ii. 4 iii. NULL iv. Error	1
16	To iterate over vertical subsets of a dataframe,----functions can be used. i. iterate() ii. iterrows() iii. itercols() iv. iteritems()	1
17	Assertion (A):- To use the Pandas library in a Python program, one must import it. Reasoning (R): - The only alias name that can be used with the Pandas library is ip. i. Both A and R are true and R is the correct explanation for A. ii. Both A and R are true and R is not the correct explanation for A. iii. A is True but R is False. iv. A is false but R is True.	1
18	Assertion(A): User cannot download any image directly from google and use in their content. Reasoning(R): The images are subject to copyrights. i. Both A and R are true and R is the correct explanation for A. ii. Both A and R are true and R is not the correct explanation for A. iii. A is True but R is False. iv. A is false but R is True.	1
	SECTION-B	
19	Create a line chart to show the data of overs and runs scored by two teams.	2

Team/Over	1	2	3	4	5	6	7	8	9	10
INDIA	8	9	7	12	15	16	18	4	22	23
PAKISTAN	9	8	11	9	14	12	14	9	12	15

OR

Create a bar graph to display number of students registered in classes 11A, 11B, 11C, 11D.

20	<p>Briefly explain the basic concepts of a web server and web browser.</p> <p style="text-align: center;">OR</p> <p>Surabhi is doing a course in networking. She is unable to understand the concept of URL. Help her by explaining it with the help of suitable example.</p>	2										
21	<p>Consider the given SQL string: “Bestofluck@2024_EXAM”</p> <p>Write suitable SQL queries for the following:</p> <ol style="list-style-type: none"> Returns the position of the first occurrence of the substring “_” in the given string. To extract first five characters from the string. 	2										
22	<p>Write a program in to create a series ‘Emp’ using a dictionary having Employee name as key and salary as value with following data –</p> <table style="margin-left: 20px;"> <tr> <td>EmployeeName</td> <td>Salary</td> </tr> <tr> <td>Amit</td> <td>11000</td> </tr> <tr> <td>Rajeev</td> <td>7500</td> </tr> <tr> <td>Dinesh</td> <td>12500</td> </tr> <tr> <td>Akshit</td> <td>8000</td> </tr> </table>	EmployeeName	Salary	Amit	11000	Rajeev	7500	Dinesh	12500	Akshit	8000	2
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23	Write 4 steps to manage E-Waste.	2										
24	<p>What is the purpose of the following clauses in a select statement?</p> <ol style="list-style-type: none"> ORDER BY GROUP BY <p style="text-align: center;">OR</p> <p>Differentiate between the following statements:</p> <ol style="list-style-type: none"> ALTER and UPDATE DELETE and DROP 	2										
25	Consider the following table STUDENT and write SQL queries to the questions that follows.	2										
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">SID</td> <td style="width: 15%;">SNAME</td> <td style="width: 15%;">CLASS</td> <td style="width: 15%;">ADMYEAR</td> <td style="width: 15%;">HOUSE</td> <td style="width: 15%;">No.of Student</td> </tr> </table>	SID	SNAME	CLASS	ADMYEAR	HOUSE	No.of Student					
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	<p>a. To display house wise number of students. b. To display names of students in descending order of year of admission.</p>																																					
	SECTION-C																																					
26	<p>Write the name of the functions to perform the following operations:</p> <p>a. To display the day like “Monday”, “Tuesday”, from the date when India got independence.</p> <p>b. To display the specified number of characters from a particular position of the given string.</p> <p>c. To display the name of the month in which you were born.</p> <p>OR</p> <p>Write the output produced by the following SQL commands:</p> <p>a. SELECT</p>				3																																	
	<p>YEAR(“1979/11/26”),MONTH(“1979/11/26”);</p> <p>b. SELECT LEFT(“INDIA”,3), RIGHT(“Computer Science”,4);</p> <p>c. SELECT MID(“Informatics”,6,3), SUBSTR(“Practices”,3);</p>																																					
27	<p>For a given string “KVSROLucknowPB2024”. Write suitable queries for following.</p> <p>a. To extract ‘2024’ form the string.</p> <p>b. To print the string in lower case letters.</p> <p>c. To extract word ‘Lucknow’ from the string.</p>				3																																	
28	<p>Shubham wants to perform following operations in SQL. Help him to write queries.</p> <p>a. To create a database School.</p> <p>b. To create a table named STUDENT with following attributes.</p>				3																																	
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29	<p>Consider the following table Product and answer the questions.</p>				3																																	

PCode	PName	UPrice	Manufacturer
P01	Washing Powder	120	Surf
P02	Toothpaste	54	Colgate
P03	Soap	25	Lux
P04	Tooth paste	65	Pepsodent
P05	Soap	38	Dove
P06	Shampoo	245	Dove

Write SQL Queries to

- Add a new column Discount to the table Product.
- Increase the price by 12 per cent for all the products manufactured by Dove.
- List the Product Code, Product name and price in descending order of their product name.

OR

Write output of following SQL statements.

- SELECT PName, avg(UPrice) FROM Product GROUP BY Pname;
- SELECT COUNT (DISTINCT PName) FROM Product;
- SELECT PName, MAX(UPrice), MIN(UPrice) FROM Product GROUP BY PName;

30

Write missing statements in following code.

```
import _____ as plt      # To import required module
date=["25/12","26/12","27/12"]
temp=[8.5,10.5,6.8]
plt.__(date, temp)  #To plotting line chart of temp versus date
plt.__( )      # To display the figure
```

3

SECTION-D

31

The data of students opted Science, Commerce and Humanities in Kendriya Vidyalayas is as follows.

4

Stream	Science	Commerce	Humanities
Students	1522	1388	890

Write a code to present it using a bar plot giving suitable title and label to chart.

32

Consider the given DataFrame df:

	Q1	Q2	Q3	Q4
0	5000	8000	12000	18000
1	10	20	30	40

4

	<p>Write suitable Python statements for the following:</p> <ol style="list-style-type: none"> Add a column called Q5 with the following data [2000,44]. Add a new record with appropriate values. Remove the column Q2, Q4. Remove first and second rows from DataFrame. 																																														
SECTION-E																																															
33	<p>Consider the following data frame df</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>name</th> <th>dept</th> <th>age</th> <th>salary</th> </tr> </thead> <tbody> <tr><td>101</td><td>Heena</td><td>sales</td><td>40</td><td>14000</td></tr> <tr><td>102</td><td>Ayush</td><td>Purchase</td><td>28</td><td>20400</td></tr> <tr><td>103</td><td>diohm</td><td>sales</td><td>30</td><td>37700</td></tr> <tr><td>104</td><td>varshabh</td><td>Purchase</td><td>25</td><td>20000</td></tr> <tr><td>105</td><td>shubhi</td><td>Purchase</td><td>22</td><td>45000</td></tr> <tr><td>106</td><td>priyansh</td><td>sales</td><td>21</td><td>10000</td></tr> <tr><td>107</td><td>ankush</td><td>IT</td><td>40</td><td>55000</td></tr> <tr><td>108</td><td>samy</td><td>IT</td><td>36</td><td>60900</td></tr> </tbody> </table> <ol style="list-style-type: none"> Display all product except product no 101 and 102 Display all the product details of record no 102,104 and 106. Display name and dept details of all records of DataFrame Display dept and age details of 101 and 104 records of DataFrame: Display all the names of DataFrame. 		name	dept	age	salary	101	Heena	sales	40	14000	102	Ayush	Purchase	28	20400	103	diohm	sales	30	37700	104	varshabh	Purchase	25	20000	105	shubhi	Purchase	22	45000	106	priyansh	sales	21	10000	107	ankush	IT	40	55000	108	samy	IT	36	60900	5
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34	<p>Write SQL queries for following.</p> <ol style="list-style-type: none"> To print cube of 5. To print length of string “Informatics Practices”. To remove leading spaces from string “ Query ”. To print current date and time. To print remainder of operation 10 divided by 3. <p>“Let’s Learn” is an educational NGO. It is setting up its new campus at Mumbai for its Web-Based activities. The campus has 4 compounds as shown in the diagram below:</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">Resource Compound</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Training Compound</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 40px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">Main Compound</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Finance Compound</div> </div>	5																																													

Number of Computers:

MAIN TO RESOURCE	50m
MAIN TO TRAINING	40m
MAIN TO FINANCE	90m
RESOURCE TO TRAINING	25m
RESOURCE TO FINANCE	45m
TRAINING TO FINANCE	200m

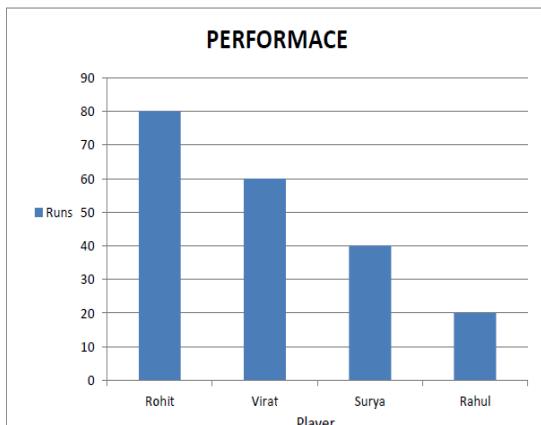
Distance Between various compound are:

MAIN COMPOUND	5
RESOURCE COMPOUND	15
TRAINING COMPOUND	150
FINANCE COMPOUND	20

1. Suggest a cable layout of connections between the compounds.
2. Suggest the most suitable topology of the connection between the wings.
3. Suggest the most suitable place (i.e. compound) to house server for this NGO. Also provide a suitable reason for your suggestion.
4. Which networking device will you suggest to be procured by the company to interconnect all the computers of various Compounds of MUMBAI campus?
5. What is the type of network that will be formed when NGO connects its international office situated in Delhi?

35

Write Python code to plot a bar chart for Indian player performance in a match:



Also give suitable python statement to save this chart.

OR

Write a python program to plot a line chart based on the given data

5

	Match=[1,2,3,4] Goals=[2,4,6,8]	
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