

**INFORMATICS PRACTICES (065)****SAMPLE PAPER - 4**

Timen: 03:00 Hrs

CLASS - XII

Maximum Marks: 70

General instructions:

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

SECTION - A

1	The device used to connect two networks using different protocols is: i. Router ii. Repeater iii. Gateway iv. Hub	1
2	A _____ is some lines of malicious code that can copy itself and can have detrimental effect on the computers, by destroying data or corrupting the system. i. Cybercrime i. Computervirus i. Program iv. Software	1
3	Any work / information that exist in digital form idea on internet or on an electronic device, is known as _____ property. i. License property i. Digital property i. Source code property iv. Software property	1
4	Which SQL statement is used to display all the data from product table in the decreasing order of price? i. SELECT * FROM PRODUCT; i. SELECT * FROM PRODUCT ORDER BY PRICE; i. SELECT * FROM PRODUCT ORDER BY PRICE DESC; iv. SELECT * FROM PRODUCT ORDER BY DESC;	1
5	If column "City" contains the data set (DELHI, HYDERABAD, KOLKATA, CHENNAI, KOLKATA), what	1



	will be the output after the execution of the given query? SELECT COUNT(DISTINCT City) FROM Customer; i. 4 ii. 5 iii. 3 iv. 2	
6	'F' in FOSS stands for: i. IForce ii. Free iii. Fibre iv. First	1
7	Write the output of the following SQL command: select truncate(15.88,1); i. 15.88 ii. 15.8 iii. 15.9 iv. 16	1
8	Which one of the following is not an aggregate function? i. MAX() ii. SUMUP() iii. COUNT() iv. MIN()	1
9	Which one of the following functions is used to find the smallest value from the given data in MySQL? i. MINIMUM() ii. MIN() iii. SMALL() iv. TINY()	1
10	Given a Pandas series called Marks, the command which will display the last 2 rows is : i. print(Marks.tail(2)) ii. print(Marks.Tail(2)) iii. print(Marks.tails(3)) iv. print(Marks.tail())	1
11	Which of the following is not a valid char type? i. Lineplot ii. bargraph iii. histogram iv. statistical	1
12	A DataFrame object is a collection of _____ type of data. i. Homogenous ii. Heterogenous	1



	iii. Hybrid iv. None of the above	
13	Website stores the browsing activity through: i. web page ii. Cookies iii. passwords iv. server	1
14	In SQL, which function returns the weekday name for a given date. i. DAY ii. DAYNAME iii. NAME iv. DNAME	1
15	Stealing someone's intellectual work and representing it as your own work without citing the source of information is: i. Copyright ii. Licensing iii. GPL iv. Plagiarism	1
16	Which of the following would be a creative work protected by copyright? i. A list of all Indian Prime minister names ii. A Portrait of your friend iii. A song you wrote iv. The name of your pet dog.	1
	Q17and18 are ASSERTION AND REASONING based questions. Mark the correct choice as 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	
17	Assertion (A): -The Internet is a collection of interconnected computer networks linked by transmission medium such as copper wires, fiber-optic cables, wireless connections etc. Reasoning (R): - World wide web is a collection of interconnected documents.	1
18	Assertion (A): -A series object can be created by calling the Series() method. Reasoning (R): - A Series is a two-dimensional labelled data structure.	1
	SECTION - B	
19	Distinguish between Static webpage and Dynamic webpage. OR Explain the function of the following network devices: a. Repeater b. Firewall	2

20	Rohini writes the following commands with respect to a table Student having fields, SNo, Name, Age, Fee. Command1: Select count (*) from student; Command2: Select count (Fee) from student; She gets the output as 5 for the first command but gets an output 4 for the second command. Explain the reason for different output with justification.	2																																			
21	What is the purpose of Group By clause in SQL? Explain with the help of suitable example.	2																																			
22	Write a program in Python Pandas to create a series named as "stu_marks" which stores marks of 4 subjects of a student in class XII B of your school. Assume that student is studying class XII and have 67,72,85,83 marks in Maths, English, Hindi, IP respectively and PANDASlibrary has been imported aspd.	2																																			
23	Give any two solutions to manage the E-Waste in locality/society. OR List any two health hazards related to excessive use of technology.	2																																			
24	What will be the output of the followingcode? >>>import pandas as pd >>>A=pd.Series(data=[19,20,5,42]) >>>print(A>15)	2																																			
25	Carefully observe the following code: import pandas as pd data = [{'a': 10, 'b': 20},{'a': 6, 'b': 32, 'c': 22}] df1 = pd.DataFrame(data) print(df1) Answer the following: i. List the index of the DataFrame df1 ii. List the column names of DataFrame df1.	2																																			
SECTION - C																																					
26	Write outputs for SQL queries COURSE: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CID</th> <th>CNAME</th> <th>FEES</th> <th>STARTDATE</th> <th>TID</th> </tr> </thead> <tbody> <tr> <td>C201</td> <td>AGDCA</td> <td>12000</td> <td>2018-07-02</td> <td>101</td> </tr> <tr> <td>C202</td> <td>ADCA</td> <td>15000</td> <td>2018-07-15</td> <td>103</td> </tr> <tr> <td>C203</td> <td>DCA</td> <td>10000</td> <td>2018-10-01</td> <td>102</td> </tr> <tr> <td>C204</td> <td>DDTP</td> <td>9000</td> <td>2018-09-15</td> <td>104</td> </tr> <tr> <td>C205</td> <td>DHN</td> <td>20000</td> <td>2018-08-01</td> <td>101</td> </tr> <tr> <td>C206</td> <td>O LEVEL</td> <td>18000</td> <td>2018-07-25</td> <td>105</td> </tr> </tbody> </table> i. SELECT LENGTH(CNAME) FROM COURSE WHERE FEES<10000; ii. SELECT CNAME FROM COURSE WHERE MONTH (STARTDATE)=8;	CID	CNAME	FEES	STARTDATE	TID	C201	AGDCA	12000	2018-07-02	101	C202	ADCA	15000	2018-07-15	103	C203	DCA	10000	2018-10-01	102	C204	DDTP	9000	2018-09-15	104	C205	DHN	20000	2018-08-01	101	C206	O LEVEL	18000	2018-07-25	105	3
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	iii. SELECT MOD (FEES, DAY(STARTDATE))FROM COURSEWHERE T ID=104;																															
27	<p>Write python code to create the DataFrame employee using dictionary:</p> <table border="1"> <thead> <tr> <th></th> <th>NAME</th> <th>SALARY</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>RAHUL</td> <td>50000</td> </tr> <tr> <td>102</td> <td>SAKSHI</td> <td>46000</td> </tr> <tr> <td>103</td> <td>SAKSHAM</td> <td>38000</td> </tr> <tr> <td>104</td> <td>ARUN</td> <td>25700</td> </tr> </tbody> </table>		NAME	SALARY	101	RAHUL	50000	102	SAKSHI	46000	103	SAKSHAM	38000	104	ARUN	25700	3															
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28	<p>Consider the following Data Data Frame f and answer questions</p> <table border="1"> <thead> <tr> <th></th> <th>Delhi</th> <th>Mumbai</th> <th>Kolkata</th> <th>Chennai</th> </tr> </thead> <tbody> <tr> <td>hospitals</td> <td>200</td> <td>230</td> <td>300</td> <td>320</td> </tr> <tr> <td>population</td> <td>150000</td> <td>230000</td> <td>450000</td> <td>340000</td> </tr> <tr> <td>schools</td> <td>280</td> <td>300</td> <td>315</td> <td>278</td> </tr> </tbody> </table> <p>Write suitable Python statements for</p> <p>i. Change the population in Kolkata as 500000 ii. Rename the column population as "pop" iii. Display hospitals in Delhi</p>		Delhi	Mumbai	Kolkata	Chennai	hospitals	200	230	300	320	population	150000	230000	450000	340000	schools	280	300	315	278	3										
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29	<p>Anisha received an email from the bank stating that there is a problem with her account. The email provides instructions and a link, by clicking on which she can login her account and fix the problem.</p> <p>i. What is this happening to Anisha? ii. What immediate action should she take to handle it? Is there any law in India to handle such issues? Discuss briefly. OR What do you understand by NetEtiquettes? Explain any two such etiquettes.</p>	3																														
30	<p>Consider the given table Faculty, write suitable SQL queries for the following:</p> <table border="1"> <thead> <tr> <th>Faculty_Id</th> <th>First_name</th> <th>Last_name</th> <th>Hire_date</th> <th>Salary</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Sarika</td> <td>Mishra</td> <td>12-10-1997</td> <td>25000</td> </tr> <tr> <td>102</td> <td>Naveen</td> <td>Vyas</td> <td>23-12-1994</td> <td>18000</td> </tr> <tr> <td>103</td> <td>Rakesh</td> <td>Sharma</td> <td>25-08-2003</td> <td>32000</td> </tr> <tr> <td>104</td> <td>Rashmi</td> <td>Malhotra</td> <td>18-09-2004</td> <td>21000</td> </tr> <tr> <td>105</td> <td>Amit</td> <td>Srivastava</td> <td>05-06-2007</td> <td>28000</td> </tr> </tbody> </table> <p>Write SQL commandsto:</p> <p>a. To display details of those faculty members whose First_name ends with't'. b. Display all records in descending order of Hire_date. c. Find the maximum and minimum salary.</p> <p style="text-align: center;">OR</p> <p>Discuss the significance of Order by clause in detail with the help of suitable example.</p>	Faculty_Id	First_name	Last_name	Hire_date	Salary	101	Sarika	Mishra	12-10-1997	25000	102	Naveen	Vyas	23-12-1994	18000	103	Rakesh	Sharma	25-08-2003	32000	104	Rashmi	Malhotra	18-09-2004	21000	105	Amit	Srivastava	05-06-2007	28000	3
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SECTION - D

31 Sahil, a database administrator has designed a database for Vehicles in a Service Centre. Help him by writing answers of the following questions based on the given table:

4

Vehicle:

V_no	Type	Company	Price	Qty
AW125	Wagon	Maruti	250000	25
J0083	Jeep	Mahindra	4000000	15
S9090	SUV	Mitsubishi	2500000	18
M0892	Mini van	Datsun	1500000	26
W9760	SUV	Maruti	2500000	18
R2409	Mini van	Mahindra	350000	15

Write SQL command to:

- Display the company name in upper case.
- Display the lowest price of the Vehicle.
- Count the type of vehicles manufactured by each company.

OR (Option for part iii only)

Display the sum of price of each type of vehicles.

32 Consider the following Data Frame sports:

4

	ID	NAME	GENDER
SD1	1	ARUNA	F
SD2	2	RAHUL	M
SD3	3	SAKSHI	F
SD4	4	RAMAN	M

- Predict the output of the following python statement: sports. shape
- Write command to Add a new row with values(5, SAM, M):
- Write python statement to delete column Gender.

OR (Option for part iii only)

Write python statement to delete the row with index SD3.

SECTION - E

33 Write suitable SQL query for the following:

- Display 5 characters extracted from 3th left character onwards from the string 'INDIA RISING'.
- Display the position of occurrence of string 'FUNDA' in the string 'PYTHON FUNDAMENTALS'.
- Round off the value 453.668 to two decimal place.
- Display the remainder of 120 divided by 7.
- Remove all the expected leading and trailing spaces from a column student_id of the table 'student'.

5

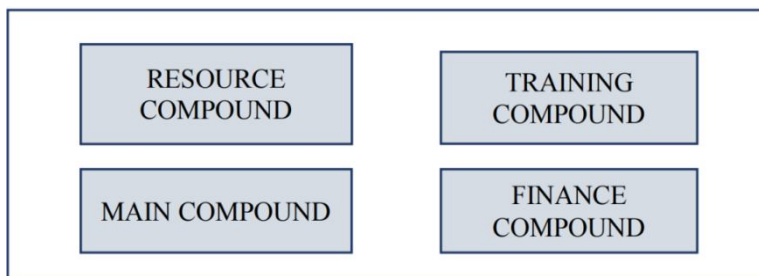
OR

Explain the following SQL functions using suitable examples.

- i. LCASE()
- ii. TRIM()
- iii. SUBSTR()
- iv. MONTHNAME()
- v. TRUNCATE()

34 “StudyTogether” 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:

5



Center to center distances between various Compounds as per architectural Drawings (in Meter) is as follows:

Main Compound to Resource Compound	50m
Main Compound to Training Compound	40m
Main Compound to Finance Compound	90m
Resource Compound to Training Compound	25m
Resource Compound to Finance Compound	45m
Training Compound to Finance Compound	200m

Expected Number of Computers in each Compound is as follows:

MainCompound	5
ResourceCompound	15
TrainingCompound	150
AccountsCompound	20

1. Suggest a cable layout of connections etween the compounds.
2. Suggest the most suitable topology of the connection between the wings.
3. Suggest the most suitable place (i.e. compund) to house the 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
5. The NGO is planning to connect its Internationa office situated in Delhi, which out of the

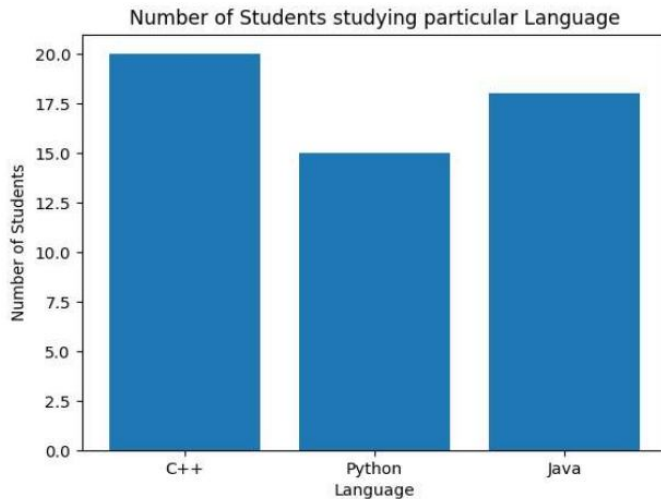


following wired communication link, you will suggest for very high speed connectivity?

- a. Telephone Analog
- b. Optical Fiber
- c. Ethernet Cable

35 Write Python code to plot a bar chart for Number of students studying particular language as shown below:

5



Also give suitable python statement to save this chart.

OR

Write a python program to plot a line chart based on the given data to depict the medal tally between four Houses in school.

```
House=['Shivaji', 'Tagore', 'Raman', 'Ashoka']
Medal_count=[50,60,40,55]
```