

RASHTRIYA MILITARY SCHOOL, BENGALURU

PRACTICE PAPER-2

CLASS XII

INFORMATICS PRACTICES (065)

TIME: 3 HOURS

M.M.70

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q	SECTION-A	Marks
1.	Which device is used to regenerate the signals over long distance data transmission: <ol style="list-style-type: none"> i. Switch ii. Modem iii. Repeater iv. None of the above 	1
2.	Whenever we surf the Internet using smartphones we leave a trail of data reflecting the activities performed by us online, which is our ? <ol style="list-style-type: none"> i. Data print ii. Digital activity iii. Digital footprint iv. Digital print 	1
3.	Unsolicited commercial emails is known as? <ol style="list-style-type: none"> i. Spam ii. Malware iii. Virus iv. Worms 	1
4.	Find the output for the below sql statement: Select substr("BoardExam@2021", 4, 7); <ol style="list-style-type: none"> i. ardExam ii. dExam@2 iii. rdExam iv. rdExam@2 	1
5	What is the output of following : Select Round(19999.299,-1); <ol style="list-style-type: none"> i. 199999.3 ii. 20000.299 iii. 2000 iv. 20000 	1

6.	Which of the following is Net Etiquette? i. Be Ethical ii. Be Responsible iii. Be Respectful iv. All of the above	1
7.	Which keyword is used to arrange the result of order by clause in descending order? i. DSEC ii. ASCE iii. DESC iv. ASC	1
8.	Which one of the following is a string function? i. COUNT() ii. SUBSTR() iii. MOD() iv. MAX()	1
9.	Which one of the following functions is used to count the no of rows from the given table in MySQL? i. COUNT(*) ii. CARDINALITY() iii. COUNT(Column name) iv. All the above	1
10.	To display First 15 rows of a series object 'Ser1', you may write: i. Ser1.tail(15) ii. Ser1.head() iii. Ser1.head(15) iv. Ser1.tail()	1
11.	Which of the following statement will install pandas library in python? i. Pip install pandas ii. pip install pandas as pd iii. pip install pandas.pd iv. pip install pandas	1
12	which protocol allow us to have voice calls over the internet? i. HTTP ii. VoIP iii. Video Chat iv. SMTP	1
13	Which one is False about MAC address? i. It is Physical Address of any device connected to the internet. ii. We can change MAC address of a device. iii. It is the address of NIC card install in network device. iv. It is used for track the user's over internet.	1

14	Which one of the following is an output for SQL statement given below: SELECT DAYNAME('2022-12-07'); i. MONDAY ii. WEDNESDAY iii. SATURDAY iv. FRIDAY	1
15	The act of fraudulently acquiring someone's personal and private information, such as online account names, login information and passwords is called as _____. i. Phishing ii. Identity Theft iii. Plagiarism iv. all the above	1
16	The method used for X axis label a line graph is _____ i. plt.title() ii. plt.ylabel() iii. plt.xlabel() iv. plt.line()	1
Q17 and 18 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): - E-waste cause of Damage to the immune system, Skin disease, Multi ailments and Skin problems. Reasoning (R):- Mostly all electronic waste comprises of toxic chemicals such as lead,beryllium, mercury etc.	1
18	Assertion (A): - When DataFrame is created by using Dictionary, keys of dictionary are set as columns of DataFrame. Reasoning (R):- Boolean Indexing helps us to select the data from the DataFrames using a boolean vector.	1
SECTION-B		
19	Define any 2 limitations of star topology? OR Write any 2 differences between Star and Bus topology?	2
20	Anjali writes the following commands with respect to a table employee having fields, empno, name, department, commission. Command1 : Select count(*) from employee; Command2: Select count(commission) from employee; She gets the output as 4 for the first command but gets an output 3 for the second command. Explain the output with justification.	2
21	What is the difference between the order by and group by clause when used along with the select statement. Explain with an example.	2

22	<div>Consider a given Series , M1. Write a program in Python Pandas to create the series.</div> <div><div><div>Index</div></div><div><div></div><div>Term1</div><div>Term2</div><div>Term3</div><div>Term4</div></div><div><div>Marks</div><div>67</div><div>56</div><div>77</div><div>89</div></div></div>	2																														
23	<div>List any two health hazards related to excessive use of Technology.</div> <div>OR</div> <div>Priya is using her internet connection to book a train ticket. This is a classic example of leaving a trail of web activities carried by her. What do we call this type of activity? What is the risk involved by such kind of activity?</div>	2																														
24	<div>Given two series S1 and S2</div> <div><div><div>S1</div><div>A39</div><div>B41</div><div>C42</div><div>D44</div></div><div><div>S2</div><div>A10</div><div>B10</div><div>D10</div><div>F10</div></div></div> <div>Find the output for following python pandas statements?</div> <div><div>a. S1[:2]*100</div><div>b. S1 * S2</div></div>	2																														
25	<div>Consider the following DataFrame, DF</div> <table><tr><td></td><td>Rollno</td><td>Name</td><td>Class</td><td>Section</td><td>CGPA</td></tr><tr><td>St1</td><td>1</td><td>Aman</td><td>IX</td><td>E</td><td>8.7</td></tr><tr><td>St2</td><td>2</td><td>Preeti</td><td>X</td><td>F</td><td>8.9</td></tr><tr><td>St3</td><td>3</td><td>Kartikey</td><td>IX</td><td>D</td><td>9.2</td></tr><tr><td>St4</td><td>4</td><td>Lakshay</td><td>X</td><td>A</td><td>9.4</td></tr></table> <div>Write commands to :</div> <div><div>i. Add a new column ‘Stream’ to the Dataframe with values (Science, Commerce, Arts, Science.)</div><div>ii. Add a new row with values (5 , Mridula ,X, F , 9.8, Science)</div></div>		Rollno	Name	Class	Section	CGPA	St1	1	Aman	IX	E	8.7	St2	2	Preeti	X	F	8.9	St3	3	Kartikey	IX	D	9.2	St4	4	Lakshay	X	A	9.4	2
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	SECTION -C																															
26	TABLE NAME : PHARMADB	3																														

	<table><tr><th>DrugID</th><th>DrugName</th><th>Manufacture Date</th><th>Price</th><th>PharmacyName</th><th>Location</th></tr><tr><td>5476</td><td>Amlodipine</td><td>2019-02-11</td><td>100.97</td><td>Rx Pharmacy</td><td>Delhi</td></tr><tr><td>2345</td><td>Paracetamol</td><td>2011-05-07</td><td>150.25</td><td>Raj Medicos</td><td>Haryana</td></tr><tr><td>1236</td><td>NebiStar</td><td>2021-06-02</td><td>160.27</td><td>MyChemist</td><td>Delhi</td></tr><tr><td>6512</td><td>VitaPlus</td><td>2019-03-01</td><td>150.81</td><td>MyChemist</td><td>Goa</td></tr><tr><td>5631</td><td>Levocitrezine</td><td>2018-04-12</td><td>110.23</td><td>RxPharmacy</td><td>Mumbai</td></tr></table> <p>Based on the above table “PHARMADB”, Write outputs for SQL commands to i to iii:</p> <p>i. SELECT SUBSTR(DrugName ,5,4) FROM PHARMADB WHERE PRICE>160; ii. SELECT DRUGNAME FROM PHARMADB WHERE DAY(ManufactureDate)>10; iii. SELECT ROUND (Price, -1) FROM PURCHASE WHERE Location= ‘Delhi’</p>	DrugID	DrugName	Manufacture Date	Price	PharmacyName	Location	5476	Amlodipine	2019-02-11	100.97	Rx Pharmacy	Delhi	2345	Paracetamol	2011-05-07	150.25	Raj Medicos	Haryana	1236	NebiStar	2021-06-02	160.27	MyChemist	Delhi	6512	VitaPlus	2019-03-01	150.81	MyChemist	Goa	5631	Levocitrezine	2018-04-12	110.23	RxPharmacy	Mumbai	
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27	<p>Consider the following DataFrame “HOSPITAL”</p> <table><tr><th></th><th>City</th><th>Hospitals</th><th>schools</th></tr><tr><td>0</td><td>Delhi</td><td>189</td><td>7916</td></tr><tr><td>1</td><td>Mumbai</td><td>208</td><td>8508</td></tr><tr><td>2</td><td>Kolkata</td><td>149</td><td>7226</td></tr><tr><td>3</td><td>Chennai</td><td>157</td><td>7617</td></tr></table> <p>Write python pandas code to create the above dataframe HOSPITAL</p>		City	Hospitals	schools	0	Delhi	189	7916	1	Mumbai	208	8508	2	Kolkata	149	7226	3	Chennai	157	7617	3																
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28	<p>DataFrame ‘STU_DF’:</p> <table><tr><th></th><th>rollno</th><th>name</th><th>marks</th></tr><tr><td>0</td><td>115</td><td>Pavni</td><td>97.5</td></tr><tr><td>1</td><td>236</td><td>Rishi</td><td>98.0</td></tr><tr><td>2</td><td>307</td><td>Preet</td><td>98.5</td></tr><tr><td>3</td><td>422</td><td>Paul</td><td>98.0</td></tr></table> <p>Perform the following operations on the DataFrame stuDF:</p> <p>i. Add a new row in dataframe STU_DF with values [444,’karan’,88.0] ii. Print no of rows and columns in dataframe STU_DF iii. Delete row for rollno 307.</p>		rollno	name	marks	0	115	Pavni	97.5	1	236	Rishi	98.0	2	307	Preet	98.5	3	422	Paul	98.0	3																
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29	<p>Identify the type of cybercrime for the following situations:</p> <p>i. A person complains that Rs. 4.25 lacs have been fraudulently stolen from his/her account online via some online transactions in two days using NET BANKING. ii. A person complains that his/her debit/credit card is safe with him still somebody has done shopping /ATM transaction on this card. iii. A person complains that somebody has created a fake profile of Facebook and defaming his/her character with abusive comments and pictures</p> <p style="text-align: center;">OR</p> <p>As a citizen of India, what advice you should give to others for e-waste disposal ? Define them In details.</p>	3																																				
30	<p>Consider the following sql table ‘automobile’</p>	3																																				

index	company	body-style	wheel-base	num-of-cylinders	price	Dateofmanufacture
0	bmw	sedan	101.234	four	16925	1998-03-27
1	bmw	sedan	101.261	six	20970	1999-05-23
2	honda	sedan	96.538	four	12945	2000-03-02
3	honda	sedan	96.519	four	10345	2001-02-01
4	toyota	hatchback	95.727	four	5348	1999-03-01
5	toyota	hatchback	95.173	four	6338	2000-05-11

Write SQL queries using SQL functions to perform the following operations:

- Display company name and body wheel base after rounding off to nearest ten's decimal places.
- Display the position of occurrence of the string "dan" in body style.
- Display the year of manufacturing for sedan;

OR

Helps Abhay to Compare Having clause and Order by clause with the help of example?

SECTION-D

31

Write the SQL functions which will perform the following operations:

- To display the name of the month of the current date .
- To remove spaces from the beginning and end of a string, "Panorama".
- To display the name of the day eg, Friday or Sunday from your date of birth, dob.
- To display the starting position of your first name(fname) from your whole name (name).
- To compute the remainder of division between two numbers, n1 and n2

OR

Define the following functions

- LTRIM()
- MID()
- MOD()
- NOW()
- INSTR()

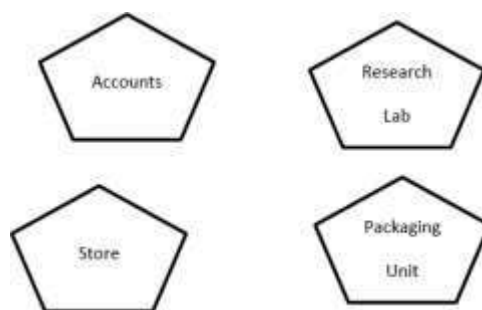
5

32

SHARMA Medicos Center has set up its new center in Delhi . It has four buildings as shown in the diagram given below:

Number of Computers

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60



5

Distance between various building are as follows:

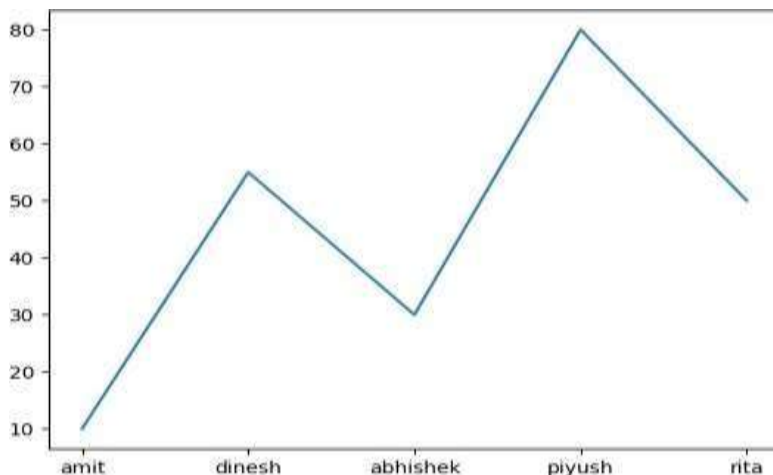
Accounts to research Lab	55m
Accounts to store	150m
Store to packaging unit	160m
Packaging unit to research lab	60m
Accounts to packaging unit	125m
Store to research lab	180m

As a network expert, provide the best possible answer for the following queries:

- Suggest a cable layout of connections between the buildings.
- Suggest the most suitable place (i.e. buildings) to house the server of this organization.
- Suggest the placement of the following device with justification:
 - Repeater
 - Hub/Switch
- Suggest a system (hardware/software) to prevent unauthorized access to or from the network.
- The company is planning to link its head office situated in Delhi with the offices in hilly areas. Suggest a way to connect it economically.

33 Observe the following figure. Identify the coding for obtaining this as output.

5



Also give suitable python statement to save this chart

OR

Write a Python program to display a bar chart of the popularity of programming Languages

Data:

Programming languages: Java, Python, PHP, JavaScript, C#, C++

Popularity: 22.2, 17.6, 8.8, 8, 7.7, 6.7

Also give suitable python statement to save this chart

SECTION -E

34 Consider the Table CLUB given below:

1+1+
2

COACH_ID	COACHNAME	AGE	SPORTS	DATOFAPP	PAY	SEX
1	KUKREJA	35	KARATE	1996-03-27	10000	M
2	RAVINA	34	KARATE	1997-01-20	12000	F
3	KARAN	34	SQUASH	1998-02-19	20000	M
4	TARUN	33	BASKETBALL	1998-01-01	15000	M
5	ZUBIN	36	SWIMMING	1998-01-12	7500	M

Answer the followings based on the above mysql table 'CLUB'

- i. Write sql query to display the average pay for karate coach
- ii. Write sql query to display month for date of appointment'DATEOFAPP
- iii. Write sql query to display the details of male coach in ascending order of their ageOR
- iv. Write SQL query to display game wise maximum pay of all caoches.

35	Consider the following DataFrame, ClassDF with row index St1,St2,St3,St4
----	--

	Rollno	Name	Class	Section	CGPA	Stream
St1	1	Aman	IX	E	8.7	Science
St2	2	Preeti	X	F	8.9	Arts
St3	3	Kartikey	IX	D	9.2	Science
St4	4	Lakshay	X	A	9.4	Commerce

Based on the above dataframe answer the followings:

- A. Predict the output
- ClassDF.T
 - ClassDF [: : -2]
- B. Write python statement to print Name,class and CGPA for Student St2 and St3
- OR
- write python Statement to print the name and class of students having CGPA more than 9.0

$$\begin{array}{|c|} \hline 1+1+ \\ \hline 2 \\ \hline \end{array}$$