BRAIN INTERNATIONAL SCHOOL

SESSION 2024-25

CLASS: XII **REVISION SHEET** **SUBJECT: IP**

Q1. Consider the Dataframe Classframe.

	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

Write commands to :

1. Add a new column 'Activity' to the Dataframe
2. Add a new row with values (5 , Mridula ,X, F , 9.8,Science)

Q2. Consider the following Dataframe **df**.

Names	Bio	Chemistry	Physics
Pranav	70	80	90
Mansi	80	70	80
Pritam	90	60	70
Anita	60	50	60

Write a **Python program** using **Pandas** for the following :

1. To create and display the dataframe **'df'** with the above given details.
   And Insert the row indexes as I,II,III,IV.

2. To delete row with IV index
3. To insert a new column **Total** with values as [240,230,220,170]

Q3. Plot a Histogram for the dataframe df showing Student's names, marks in 3 subjects with following specifications:

1. x-axis label as 'Names'
2. y-axis label as 'Marks'
3. Title of the chart is 'Student's Marks Sheet'

Q4. Write the code in pandas to create the following dataframes :

	df1			df2	
	mark1	mark2		mark1	mark2
0	10	15	0	30	20
1	40	45	1	20	25
2	15	30	2	20	30
3	40	70	3	50	30

Write the commands to do the following operations on the dataframes given

(i) To add dataframes df1 and df2.

(ii) To subtract df2 from df1

(iii) To rename column mark1 as marks1in both the dataframes df1 and df2.

(iv) To change index label of df1 from 0 to zero and from 1 to one.

Q5. Write the code to read the data from the CSV file

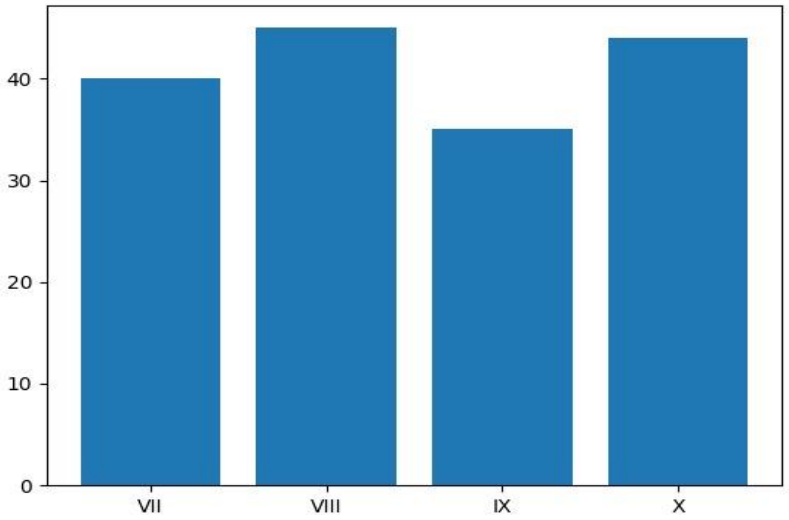
Q6. The command used to give a heading to a graph is _____

a. plt.show()
b. plt.plot()
c. plt.xlabel()
d. plt.title()

Q7. Using Python Matplotlib can be used to count how many values fall into each interval

a. line plot
b. bar graph
c. histogram

Q8. Write the code to draw the following bar graph representing the number of students in each class.



Q9. Ms. Sharma, the class teacher wants to add a new column, the scores of Gradewith the values, ‘ A’, ‘B’, ‘A’, ‘A’, ‘B’, ‘A’ ,to the DataFrame. Help her choose the command to do so:

a. `df.column=['A','B','A','A','B','A']`
b. `df ['Grade']=['A','B','A','A','B','A']`
c. `df.loc['Grade']= ['A','B','A','A','B','A']`
d. Both (b) and (c) are correct

Q10. To display last five rows of a series object ‘S’, you may write:
a) S.Head()
b) S.Tail(5)
c) S.Head(5)
d) S.tail()

Q11. What will be the output of the following code:

```
import pandas as pd
A=pd.Series(data=[35,45,55,40])
print(A>45)
```

Q12 and 13 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

Q12. Assertion (A): - Internet cookies are text files that contain small pieces of data, like a username, password and user’s preferences while surfing the internet.

Reasoning (R):- To make browsing the Internet faster & easier, its required tostore certain information on the server’s computer.

Q13. Assertion (A):- DataFrame has both a row and column index.

Reasoning (R): - A DataFrame is a two-dimensional labelled data structure likea table of MySQL.

Q14. I :

a) am a small text file
b) created on a user's computer
c) contain small pieces of data — like a username, password and user's browsing history as well as preferences
d) may help to improve user's web browsing experience.

i. Who am I?

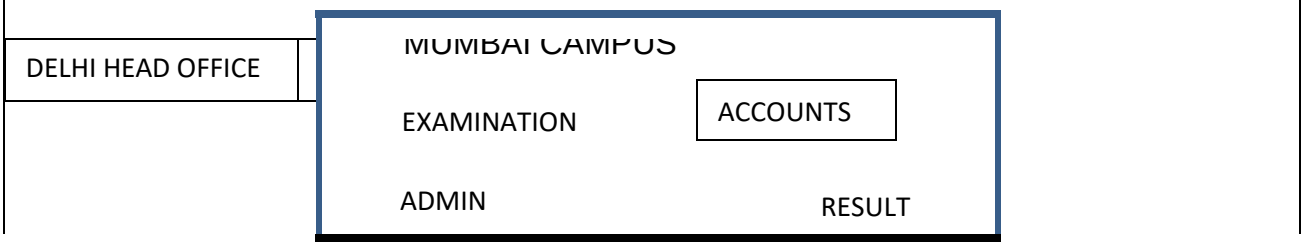
Q15. Name any two popular web browsers.

Q16. Expand the following terms related to Computer Networks:

i. SMTP
ii. POP
iii. FTP
iv. VoIP

Q17. Prime Computer services Ltd. is an international educational organization. It is planning to set up its India campus at Mumbai with its head office in Delhi. The Mumbai office campus has four main buildings-ADMIN, ACCOUNTS, EXAMINATION and RESULT.

You as a network expert have to suggest the best network related solutions for their problems raised in (i) to (v), keeping in mind the distances between the buildings and other given parameters.



Shortest distances between various buildings:

ADMIN TO ACCOUNTS	55 m
ADMIN TO EXAMINATION	90 m
ADMIN TO RESULT	50 m
ACCOUNTS TO EXAMINATION	55m
ACCOUNTS TO RESULT	50 m
EXAMINATION TO RESULT	45 m
DELHI Head Office to MUMBAI	2150 m

Number of computers installed at various buildings are as follows:

ADMIN	110
ACCOUNTS	75
EXAMINATION	40
RESULT	12
DELHI HEAD OFFICE	20

(i) Suggest the most appropriate location of the server inside the MUMBAI campus (out of the four buildings) to get the best connectivity for maximum number of computers. Justify your answer.

(ii) Suggest and draw cable layout to efficiently connect various buildingswithin the MUMBAI campus for a wired connectivity.

(iii) Which networking device will you suggest to be procured by the company to interconnect all the computers of various buildings of MUMBAI campus?

(iv) Company is planning to get its website designed which will allow students to see their results after registering themselves on its server. Out of the static or dynamic, which type of website will you suggest?

(v) Which of the following will you suggest to establish the online face to face communication between the people in the ADMIN office of Mumbai campus and Delhi head office?

a) Cable TV
b) Email
c) Video conferencing
d) Text chat

Q18. State whether True or False :

i. A copyright is automatically granted to authors or creators of content.

ii. In FOSS source code is usually hidden from the users.

Q19. _____ is the unauthorized use or distribution of software.

Q20. _____ is an unlawful activity where fake websites or emails that looks original or authentic are presented to the user.

Q21. IPR stands for _____

Q22. A mail or message sent to a large number of people indiscriminately without their consent is called _____

Q23. _____ network device is known as an intelligent hub .

Q24. Priyanka is using her internet connection to book a flight 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?

Q25. List any two health hazards related to excessive use of Technology.

Q26. Mention any four nettiquettes.

Q27. Consider the table TEACHER given below. Write commands in SQL for (i) to (iii)

TEACHER

ID	Name	Department	Hiredate	Category	Gender	Salary
1	Taniya	SocialStudies	03/17/1994	TGT	F	25000
2	Abhishek	Art	02/12/1990	PRT	M	20000
3	Sanjana	English	05/16/1980	PGT	F	30000
4	Vishnu	English	10/16/1989	TGT	M	25000
5	Aman	Hindi	08/1/1990	PRT	F	22000
6	Pritam	Math	03/17/1980	PRT	F	21000
7	RajKumar	Science	09/2/1994	TGT	M	27000
8	Sital	Maths	11/17/1980	TGT	F	24500

(a) To display all information about teachers of Female PGT Teachers.

(b) To list names, departments and date of hiring of all the teachers in descending order of date of joining.

(c) To count the number of teachers and sum of their salary department category wise.

(d) To list names,Departments with salary in ascending order.

(e) To list names, category with Hiredate in decending order.

Q28. Shewani has recently started working in MySQL. Help her in understanding the difference between the following :

Where and having clause

Count(column_name) and count(*)

Q29.

On the basis of following table answer the given questions:

Table: **CUSTOMER_DETAILS**

CUSTID	CUSTNAME	ACCT_TYPE	ACCUMLT_AMT	DOJ	GENDER
CNR_001	Manoj	Saving	101250	1992-02-19	M
CNR_002	Rahul	Current	132250	1998-01-11	M
CNR_004	Steve	Saving	18200	1998-02-21	M
CNR_005	Manpreet	Current	NULL	1994-02-19	M

(i) Write the sql query to delete the record of customer Manpreet.

(ii) What will be the output of the following query :
Select max(DOJ) From Customer_Details;

(iii) Write the sql query to delete the row from the table where customer has no accumulated amount.

Q30. Write commands in SQL for (i) to (iii) and output for (iv) and (v).

Table : Store

StoreId	Name	Location	City	NoOfEmp	DateOpen	SalesAmt
S101	Planet Fashion	Bandra	Mumbai	7	2015-10-16	40000
S102	Vogue	Karol Bagh	Delhi	8	2015-07-14	120000
S103	Trends	Powai	Mumbai	10	2015-06-24	30000
S104	Super Fashion	Thane	Mumbai	11	2015-02-06	45000
S105	Annabelle	South Extn.	Delhi	8	2015-04-09	60000
S106	Rage	Defence Colony	Delhi	5	2015-03-01	20000

(i) To display names of stores along with Sales Amount of those stores that arelocated in Mumbai.

(ii) To display the details of store in alphabetical order of name.

(iii) To display the City and the number of stores located in that City, only ifnumber of stores is more than 2.

(iv) SELECT MIN(DATEOPEN) FROM STORE;

(v) SELECT COUNT(STOREID), NOOFEMP FROM STORE GROUP BY NO OF EMP HAVING MAX(SALESAMT)<60000;

Q31. Find the result of the following :

1. select round (23.298,-1);
2. Select round(36567.78,-4);
3. select round(15.193,-1);
4. Select round(576567.78,-5);
5. Select round (1.298,0);
6. Select round (-5.898,0);
7. Select mid(“string function”,8,3);
8. Select instr(“informatics”,”mat”);
9. Select left(“information”,6)
10. Select Lcase(“COMPUTER”);