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केंद्रीय विद्यालय संगठन

(जम्मू संभाग)

KENDRIYA VIDYALAYA SANGATHAN

(JAMMU REGION)

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SAMPLE PAPER

FOR CLASS XII

INFORMATICS PRACTICES (065)

क्षेत्रीय कार्यालय, जम्मू, नज़दीक राजकीय चिकित्सालय, गाँधी नगर
जम्मू-180004

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KENDRIYA VIDYALAYA SANGATHAN JAMMU REGION

SAMPLE PAPER SET-1

CLASS XII **SUB:-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.

	SECTION A	
1	Internet is an example of: (a) LAN (b) MAN (c) WAN (d) PAN	1
2	Which of the following is violation of IPR? (a) Licensing (b) Digital footprint (c) Phishing (d) Plagiarism	1
3	E-waste management in India is done as per guidelines of (a) NITI Aayog (b) Ministry of Commerce (c) Central Pollution Control Board(CPCB) (d) National Green Tribunal(NGT)	1
4	Which aggregation function does not give useful information when applied on non numeric attribute? (a) Count (b) Min (c) Avg (d) Max	1
5	If column “Name ” contains data set(“arun”,”varun”,”tarun”). What will be output after execution of given query. Select sum(name) from students; (a) 0 (b) Error (c) arun varun tarun (d) None of above.	1
6	“P” in GPL stands for:- (a) Product (b) Public (c) Private (d) Proprietry.	1
7	Which SQL statement count the unique cities from ‘city’ attribute of table ‘bank’. (a) SELECT DISTINCT COUNT(CITY) FROM BANK; (b) SELECT COUNT(DISTINCT CITY) FROM BANK; (c) SELECT DISTINCT COUNT(*) FROM BANK; (d) SELECT COUNT(CITY) FROM BANK;	1

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8	Which one of the following functions is used to find sum of numeric values of attributes? (a) Sum() (b) Total() (c) Count() (d) Avg()	1
9	To display the first 10 rows of series 'S' we may write : (a) S.Head() (b) S.head(10) (c) S.Head(10) (d) S.tail()	1
10	Which of the following statement will import dataframe from pandas library? (a) import DataFrame from pandas (b) from pandas import DataFrame (c) import DataFrame from Pandas (d) from Pandas import DataFrame	1
11	Which of the following is an aggregation function? (a) ROUND() (b) UCASE() (c) NOW() (d) SUM()	1
12	Which of the following functions is used to import a dataframe from csv file ? (a) read_csv() (b) import_csv() (c) to_csv() (d) export_csv()	1
13	What can be done from browser settings? (a) Change home page (b) Set default browser. (c) Clear cookies (d) All of the above	1
14	Which SQL function is used to display length of string values from attributes? (a) Len() (b) Length() (c) Sum() (d) None of the above	1
15	What will be considered as violation of IPR? (a) Plagiarism (b) Copyright Infringement (c) Trademark Infringement (d) All of the above	1
16	_____ is the legal term to describe terms under which people are allowed to use the copyrighted material. (a) Licensing (b) Copyright (c) Patent (d) Trademark	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: Websites keep track of users with the help of cookies.	1

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	REASON: Cookies are small text files that stores user information and send it to server when browser makes request again.	
18	ASSERTION: Data can easily be interpreted/visualised in python in form of line graph, bar graph and histograms. REASON: To visualise data matlotlib.pyplot needs to be imported in python program	1
	SECTION B	
19	Write steps for hosting a website. OR Explain the types of network.	2
20	Madhu, a database administrator needs to display class wise maximum marks of all classes above 8th class. She is encountering an error in following query. SELECT CLASS,MAX(MARKS) FROM STUDENT GROUP BY CLASS WHERE CLASS>8; Help her in identifying error and write correct query by suggesting possible corrections.	2
21	What is purpose of GROUP BY clause in SQL. Explain with suitable example.	2
22	Write a program to create a series using numpy array that stores capitals of some countries. Give appropriate index while creating series.	2
23	Discuss e-waste management strategies. OR What is an IPR? Give examples of IPR.	2
24	What will be the output of following code: import pandas as pd s=pd.Series({1:1,2:4,3:9,4:16}) print(s[s%2==0])	2
25	Carefully observe the following code: import pandas as pd d1={'Eng':92,"Math":88,'Hindi':93} d2={'Eng':86,"Math":89,'Hindi':98} d3={'Eng':73,"Math":81,'Hindi':92} df = pd.DataFrame([d1,d2,d3],index=['Ayush','Piyush','Nitin']) print(df) (i) List the column names of dataframe df. (ii) List the index name of dataframe df.	2
	SECTION C	
26	Write outputs for SQL queries (i) to (iii) which are based on the given table BANK: (i) SELECT SUBSTR(ACCNO,3,2), CITY FROM BANK WHERE BALANCE>5000; (ii) SELECT ROUND(BALANCE,1),ANAME FROM BANK WHERE LENGTH(ANAME)>5; (iii) SELECT YEAR(LASTUPDATEDON), ACCNO FROM BANK WHERE BALANCE>1000;	3
27	Write python code to create a dataframe df (runs scored by batsman in last three years) with appropriate row labels from the dictionary given below:	3

	Eng	Math	Hindi
Ayush	92	88	93
Piyush	86	89	98
Nitin	73	81	92

ACCNO	ANAME	CITY	BALANCE	LASTUPDATEDON
101011	Ramesh	Jammu	1000.67	2022-11-06
101316	Suresh	Srinagar	9025.76	2022-11-01
101512	Mehak	Delhi	8053.43	2022-11-06
101011	Kashish	Jammu	7061.55	2022-10-10

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{ Virat :[1000,962,1055], Rohit :[655,580,602], Surya :[1200,1008,1258]}

28 Consider the given dataframe df: 3

	Year	State	Population
0	2017	Punjab	10.5
1	2018	HP	10.3
2	2019	Rajasthan	11.5
3	2020	Gujrat	10.8
4	2021	Haryana	10.9

(i) Add a column 'debt' with value 10 for each state(row).
(ii) Add new state MP with population 10.5
(iii) Remove the column debt.

29 Priya has received an SMS on mobile, asking her to provide the details of her old debit card in order to get new one. She clicked on the link in the message and entered the details of her debit card assuming that this message was from her bank. 3

(i) Which cyber crime happened with her?
(ii) What immediate action should she take to handle it?
(iii) Is there any law in India to handle such issues. Discuss briefly.

OR

What are cyber crimes? Name a few cyber crimes and is there any law in India which guards its citizens against cyber crimes?

30 Based on the table STUDENT given here, write suitable SQL queries for the following: 3

RollNo	Name	Class	Gender	Height	Weight
1	Amit	XI	M	168	72
2	Ashok	XII	M	169	71
3	Arun	X	M	163	70
4	Diksha	XII	F	159	61
5	Akanksha	XI	F	156	60
6	Sita	XI	F	162	63
7	Gita	XI	F	157	58
8	Ram	X	M	159	59

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(i) Display total number of male and female students.
(ii) Display gender wise minimum weight.
(iii) Display class wise tallest student

OR

What are aggregation functions? Name all the aggregation functions. Write examples for all the aggregation functions.

SECTION D

31 Write suitable SQL query for the following: 5

(i) Display 3 characters extracted from the 5th left character from string "INFORMATICS".
(ii) Display the position of occurrence of string 'WORLD' in string "HELLO WORLD".
(iii) Round off the value 23.52 to zero decimal place.
(iv) Display the remainder of 50 divided by 3.
(v) Remove all the expected leading spaces from the column 'NAME' of table 'STUDENT'.

OR

Explain the following SQL functions using suitable examples:

(i) LCASE()
(ii) TRIM()
(iii) INSTR()
(iv) MONTHNAME()
(v) MOD()

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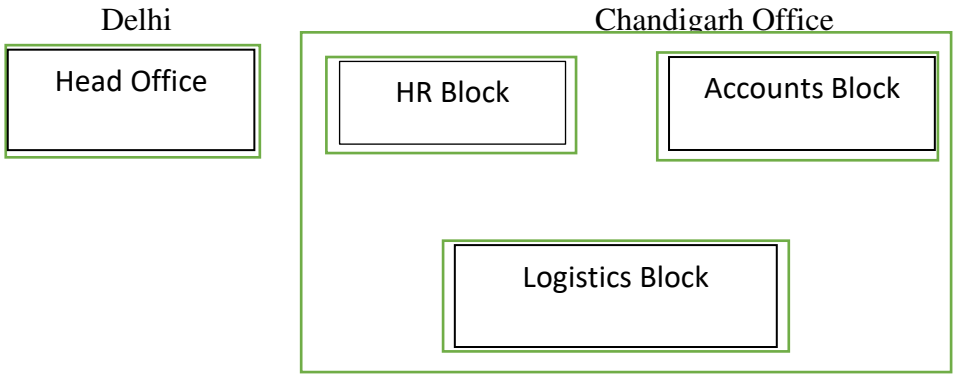
32	HP Speed Technologies Ltd. is a Delhi based organisation which is expanding its office setup to Chandigarh. At Chandigarh office they are planning to have 3 different blocks for HR, Accounts and Logistics related work. Each block has number of computers which are required to be connected in a network for communication, data and resource sharing.	5



As a network consultant, you have to suggest the best network related solutions for them for issues/problems raised in (i) to (v), keeping in mind the distances between various blocks/locations and other given parameters.

Shortest distances between various blocks/locations:

HR Block to Accounts Block	400m
Accounts Block to Logistics Block	200m
Logistics Block to HR Block	150m
Delhi Head Office to Chandigarh Office	270 km

Number of computers installed at various blocks are as follows:

HR Block	70
Accounts Block	50
Logistics Block	40

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(i) Suggest the most appropriate block/location to house the server in the Chandigarh office(out of the three blocks) to get the best and effective connectivity. Justify your answer.

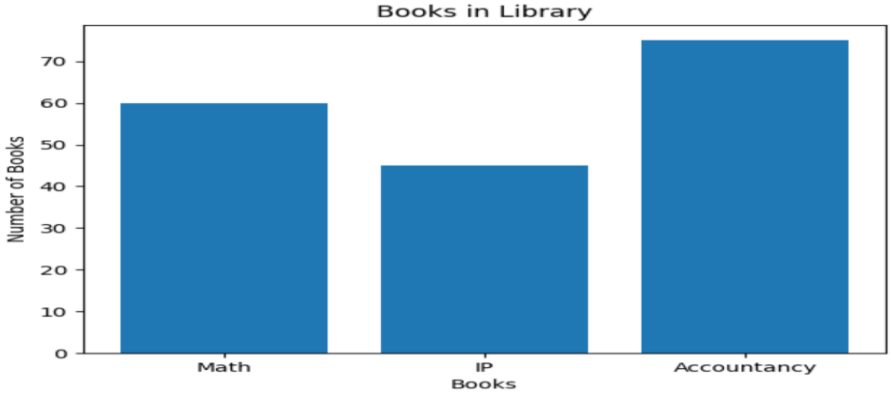
(ii) Suggest the cable layout to efficiently connect various blocks with in Chandigarh office.

(iii) Suggest the network device to use within various blocks to connect computers.

(iv) Suggest a device/software and its placement that would provide data security for the entire network of Chandigarh office.

(v) Which of the network type, would it be?

33	Write python code to plot a bar chart for Library Books as shown below:	5



Also give suitable python statement to save this chart.

OR

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Write a program to plot a line chart based on the given data to depict the runs scored by a batsman in 5 innings.
Innings = [1,2,3,4,5]
Runs = [102,88,98,146,52]

SECTION E

34 Pallavi, a database administrator has designed a database for cars showroom. Help her by writing answers to the following questions based on the given table: 1+1+2

SALE

InvoiceNo	CarId	CustId	SaleDate	PaymentMode	EmpId	SalePrice
101	D01	C01	2019-01-24	Credit Card	E04	613247.00
102	S01	C02	2018-12-12	Online	E01	590321.00
103	S02	C04	2019-01-25	Cheque	E10	604000.00
104	D01	C01	2018-10-15	Bank Finance	E07	659982.00
105	E01	C03	2018-12-20	Credit Card	E02	369310.00

(i) Write a query to display invoice number and name of month in which car is purchased.
(ii) Write a query to display highest price .
(iii) Write query to display all the information in descending order of sale price.
OR(for part iii only)
Write query to display the number of cars purchased through each payment method.

35 Mr. Ajay, a data analyst has designed a dataframe df that contain data about marks obtained by students in different subjects. Answer the following questions: 1+1+2

	Accountancy	Economics	IP
Ayush	92	82	72
Karan	87	89	87
Tarun	95	88	97

(a) Predict output of following python statement:
(i) df.shape
(ii) df[1:]
(b) Write python statement to display the marks of ayush and tarun.
OR(for part (b) only)
Write python statement to compute the sum of marks of all the subjects of given dataframe and add it as another column.

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SAMPLE PAPER SET-2

CLASS XII **SUB:-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.

	SECTION A	
1	_____is a set of rules which is used to retrieve linked web pages across the web. (A) FTP (B) HTTP (C) SMTP (D) None of the above	1
2	Which of the following is a type of cyber crime? i. Stealing a computer from a room ii. Installing antivirus for protection iii. Giving someone a false statement about something iv. Cyber bullying	1
3	Which of the following is an example of e-waste? i. A broken glass ii. Rapped jeans iii. Unused old computers iv. Empty cartons	1
4	Which of the following is not an example of DDL command ? i. CREATE TABLE ii. DROP TABLE iii. DELETE iv. ALTER TABLE	1
5	If column **"Price"** contains the data set (500,800,750,500,800), what will be the output after the execution of the given query? **SELECT min(Price) FROM Inventory;**	1

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	i) 500 **ii) 1000** **iii) 750** **iv) 800**	
6	Cookies are used to do which of the following? (A) Store your id and password for subsequent logins to the site (B) Store contents of electronic shopping cart (C) Track web activity (D) All of the above	1
7	Which SQL statement do we use to find out the total of values present in price column in the table ORDERS? i. SELECT SUM(Price)FROM ORDERS; ii. SELECT COUNT (*) FROM ORDERS; iii. SELECT TOTAL (*) FROM ORDERS; iv. SELECT SUM (*) FROM ORDERS;	1
8	Which one of the following functions will always return an integer value as output ? i. LOWER() ii. LENGTH() iii. SUBSTR() iv. LEFT()	1
9	Which one of the following functions is used to find the largest value from thegiven data in MySQL? i. MAX( ) ii. MAXIMUM( ) iii. BIG( ) iv. LARGE( )	1
10	To display first seven rows of a series object **'S'**, you may write: i. S.head() ii. S.tail() iii. S.head(7) iv. S.tail()	1
11	This is the type of chart for numeric data that group the data into bins. i) Histogram ii) Scatter chart iii) Box plot iv) Bar chart	1
12	Which of the following can be used to specify the data while creating a Series? i. List ii. Dictionary iii. Ndarray iv. All of these	1
13	Which amongst the following is an example of a browser? i. msword	1

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	ii. openoffice iii. Avast iv. Edge	
14	In SQL, which function is used to display the month from your date of birth? i. Date () ii. Time () iii. month() iv. Now ()	1
15	It refers to the proper manner and behaviour we need to exhibit while being online: i. Copyright ii. Net behaviour iii. Nettiquettes iv. Online etiquettes	1
16	_____the act of copying another person's ideas, words or work and pretending they are your own. i. Online copying ii. Plagiarism iii. Patent iv. Digital phishing	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 A is false but R is True	
17	**Assertion (A): - Repeater is device to regenerate a digital signal.** **Reasoning (R):- Freeware source code is usually hidden from user.**	1
18	**Assertion (A):- A DataFrame can be created by importing pandas library.** **Reasoning (R): - A DataFrame is a two-dimensional labelled data structure.**	1
	Section B	
19	Explain the terms Web server and web client. **OR** Write any four benefits of networking.	2
20	Sumit writes the following commands with respect to a table STUDENT having fields, STUNO, SNAME, SCLASS, SMARKS Command 1 : SELECT COUNT(*) from STUDENT; Command 2 : SELECT COUNT(marks) from STUDENT ; He gets the output as 6 and 5 respectively. Explain the output with justification.	2

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21	What is the purpose of Group By clause in SQL? Explain with the help of suitable example.	2
22	Write a program to create a series object using a dictionary that stores the numberof students in each class from 9 to 12 of your school. **Note: Assume 9, 10, 11 and 12 having 45, 50, 43, 35 students respectively and pandas library has been imported as pd.**	2
23	Mention any 4 ways for e-waste management. **OR** Mention any four precautions that we should follow while we are using social media.	2
24	What will be the output of the following code: **>>>import pandas as pd** **>>>Marks =pd.Series(data=[15,25,35,20])** **>>>print(Marks[Marks>20])**	2
25	Carefully observe the following code: **import pandas as pd** **Stu1={'Eng':50,'hindi':80,'Math':60,'Sci': 80}** **Stu2={'Eng':50,'hindi':80,'Math':60,'Sci': 80}** **totMarks={'A':Stu1,'B':Stu2}** **df=pd.DataFrame(tot'Marks** **print(df)** **Answer the following:** i. List the shape of the DataFrame df ii. List the column names of DataFrame df.	2
	SECTION C	
26	Write outputs for SQL queries (i) to (iii) which are based on the given table STUDENT:	3

Student_ID	Name	Marks	Grade	Subject
102121	Manpreet	412	B	Medical
102122	Saman	420	A	Non Medical
102123	Sanaya	395	C	Commerce
102124	Prashansa	396	C	Humanities
102125	Masood	400	C	Medical
102126	Ravi	412	C	Non Medical
102126	Ashish	395	C	Commerce

i. **SELECT LENGTH(Name) FROM STUDENT WHERE MARKS > 400;**
ii. **SELECT NAME FROM STUDENT WHERE GRADE = 'B';**
iii. **SELECT MIN(MARKS), MAX(MARKS) FROM STUDENT WHERE SUBJECT = 'Medical';**

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27	Write a Python code to create a DataFrame with appropriate column headingsfrom the list given below: **[['Shreya',20],['Rakshit',22],['Srijan',18], [‘Rahul’, 25]]**	3
28	Consider the given DataFrame ‘Store’: Name Price **0** Mobile 150 **1** Washing Machine 180 **2** Air conditioner 225 **3** Note books 500 Write suitable Python statements for the following: i. Add a column called Qty with the following data: [100,150,300,500]. ii. Add a new item namely Bat having price 550 iii. Remove the column Price	3
29	Nadar has recently shifted to a new city and school. She does not know many people in her new city and scho[illegible] But all [illegible] someone is posting negative, demeaning comments on her soci[illegible] two kin[illegible] pr[illegible] e e[illegible]. She is also getting repeated mails from unknown people. Every time she goes online, she finds someone chasing her online. i. What is this happening to Nadar? ii. What immediate action should she take to handle it? iii. Is there any law in India to handle such issues? Discuss briefly. **OR** What do you understand by plagiarism? Why is it a punishable offence? Mentionany two ways to avoid plagiarism.	3
30	A relation STUDENT is given below: RollNo | SName | Class | Marks 1000 | Kritika | 12 | 90 1001 | Malavika | 12 | 95 1002 | Mohan | 11 | 70 1003 | Vivek | 11 | 62 Write SQL Commands to: a. Display the total marks of students in each class. b. Count the number of students in each class who have secured marks > 90. c. Display the maximum and minimum marks of the students. **OR**	3

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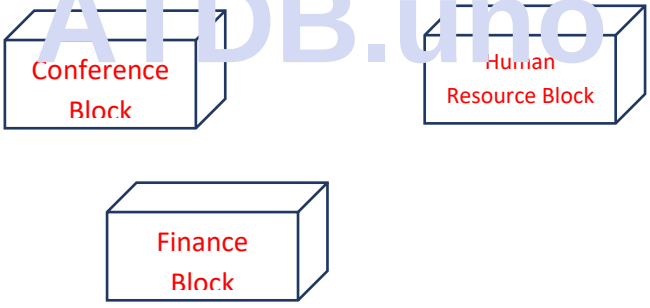
	Discuss the significance of ORDER BY clause in detail with the help of suitable example.	
	SECTION D	
31	Write the names of SQL functions which will perform the following operations: i) To display the current date ii) To convert the string in capital letters 'Kendriya' iii) To remove spaces from the end of string "Kvs RO Jammu " iv) To display the month from the current date v) To compute the power of a number n1 raised to the power n2 **OR** Explain the following SQL functions using suitable examples. i. LOWER() ii. RTRIM() iii. SUBSTR() iv. WEEKDAY() POWER()	5
32	Tech Up Corporation is a professional consultancy company. The company is planning to set up their offices in India with it's hub at Hyderabad. As a network advisor, you have to understand their requirement and suggest to them the best available solutions.  **Block to Block distance (in meters):** **Block (From) | Block | Distance (in meter)** Human Resource | Conference | 60 Human Resource | Finance | 60 Conference | Finance | 67 **Expected number of Computers to be installed in each block:** **Block | Computer** Human Resource | 125	5

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Finance	25	
Conference	60	

(a) What will be the most appropriate block where TUC should plan to install their server?

(b) What will be the best possible connectivity out of the following to connect its new office in Bengaluru with its London based office?

i) Infrared

ii) Satellite Link

iii) Ethernet Cable

(c) Which of the following devices will you suggest to connect each computer in each of the above blocks?

(i) Gateway

(ii) Switch/ Hub

(iii) Modem

(d) Suggest the placement of a Repeater in the network with justification.

(e) Suggest an ideal layout for connecting these blocks/centers for a wired connectivity.

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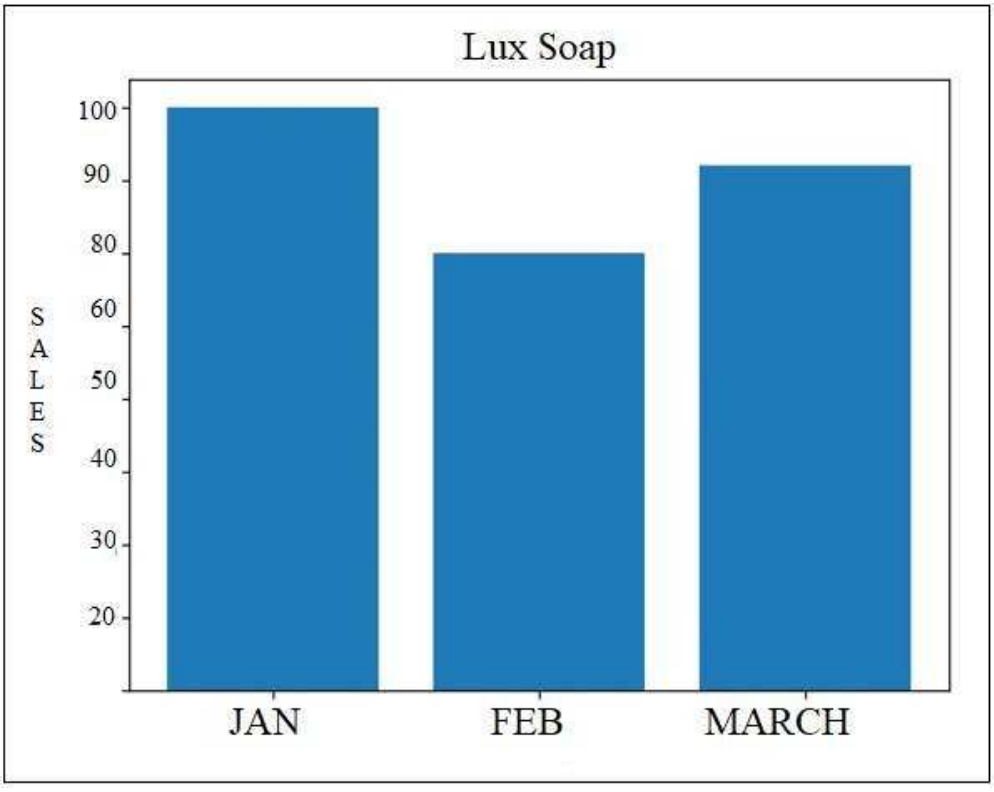
33 Write Python code to plot a bar chart for Lux soap sales for three months — 5



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	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 Monthly scoring rate of a batsman for four months. Month=[1,2,3,4] Scoring rate=[140,132,148,164]	
34	Consider a table Employee with the following data : **ENO ENAME SALARY BONUS DATE OF JOINING** E01 RamMehta 35000 NULL 02-11-2020 E02 ShyamSahay 55000 32.34 16-03-2008 E03 AlishaThakkar 32000 NULL 18-09-2020 E04 Neena Gupta 85000 28.54 31-11-1993 E05 GautamSingh 24000 NULL 30-09-2020 E06 Tez Singh 30000 22.47 25-07-1985 E07 ReemaSaxena 35000 NULL 30-10-2020 Write SQL queries using SQL functions to perform the following operations: a) Display employee name and bonus after rounding off to zero decimal places. b) Display the position of occurrence of the string “ee” in employee names. c) Display the four characters from employee name starting from second character. **OR (Option for part iii only)** Write a query to count the total no of employees who are not getting any bonus.	1+1+2
35	Sanya is the event incharge in a school. One of her students gave her a suggestion to use Python Pandas and Matplotlib for analysing and visualising the data, respectively. She has created a Data frame “SportsDay” to keep track of the number of First, Second and Third prizes won by different houses in various events.	1+1+2

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	House	First	Second	Third
0	Chenab	5	7	6
1	Ganges	10	5	4
2	Jamuna	8	13	15
3	Jhelum	12	9	12
4	Ravi	5	11	10
5	Satluj	10	5	3

Write Python commands to do the following:

I) Display the house names where the number of Second Prizes are in the range of 12 to 20.

a. df['House'][(df['Second']>=12) and (df['Second']<=20)]

b. df[House][(df['Second']>=12) & (df['Second']<=20)]

c. df[' House '][(df['Second']>=12) & (df['Second']<=20)]

d. df[(df[' House ']>=12) & (df['Second']<=20)]

II) Display all the records in the reverse order.

a. print(df[::1])

b. print(df.iloc[::-1])

c. print(df[-1:]+df[:-1])

d. print(df.reverse())

III) Which command will give the output 24:

a. print(df.size)

b. print(df.shape)

c. print(df.index)

d. print(df.axes)

OR (Option for part iii only)

III) Write Python statement to compute and display the difference of data of First column and Second column of the above given DataFrame.

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KENDRIYA VIDYALAYA SANGATHAN JAMMU REGION
SAMPLE PAPER SET-3

CLASS XII **SUB:-INFORMATICS PRACTICES(065)**
Time: 3 Hours **MM: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.

1.	Mr. Chandervardhanis not able to identify the Domain Name in the given URL. Identify and write it for him http://www.cbse.nic.in/aboutus.html i. cbse.nic.in/aboutus ii. cbse.nic.in iii. http://www.cbse.nic.in/aboutus iv. None of above	1
2.	Exploring appropriate and ethical behaviors related to online environments and digital media following is not a type of cyber crime? i. Cyber law ii. Cyber ethics iii. Cyber bullying iv. Cyber safety	1
3.	The garbage of electronic gadgets such as computers, peripherals ,laptop accessories ,mobile is known as _____ i. Electonics waste item ii. E-waste iii. Waste Electronics iv. Unused old computers	1
4.	Which type of values will not be considered by SQL while executing the following statement? **SELECT COUNT(column name) FROM student;** i. Date value ii. text value iii. Null value iv. Numeric value	1

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5.	If column **"Salary"** contains the data set (5000,8000,2000,5500,2000), what will be the output after the execution of the given query? **SELECT SUM (DISTINCT Salary) FROM Emp;** i. 22500 ii. 20500 iii. 25000 iv. 36000	1
6.	**'V'** in VoIP stands for: i. Volume ii. Voice iii. Virtual iv. Video	1
7.	Which SQL statement do we use to find out the total number of values present in the column 'price' of table **SALES**? i. SELECT * FROM SALES; ii. SELECT COUNT (price) FROM SALES; iii. SELECT FIND (*) FROM SALES; iv. SELECT COUNT(*) FROM SALES;	1
8.	Which one of the following is not an NUMERIC function? i. ROUND() ii. SQRT() iii. COUNT() iv. MOD()	1
9.	Which one of the following functions is used to find the minimum value from the given data in MySQL? i. MIN( ) ii. MINIMUM( ) iii. SMALL( ) iv. LESS( )	1
10.	To display First three rows of a series object **'M'**, you may write: i. M.Head() ii. M.Tail(3) iii. M.Head(3) iv. M.head(3)	1
11.	Which of the following statement will import pandas library? i. Import pandas as pd ii. import Pandas as py iii. import pandas as ps iv. import panda as pd	1

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12.	Consider the following series object Named 'Ser': 0 578 1 235 2 560 3 897 4 118 What will be the output of following statements?: print(ser.index) i. RangeIndex(start=0, stop=5, step=1) ii. [578 235 560 897 118] iii. 0,1,2,3,4 iv. None of Above	1
13.	If all devices are connected in a linear way , then topology is called_____ i. Ring ii. Bus iii. Star iv. Linear	1
14.	In SQL, which function is example of scalar function? i. count () ii. avg () iii. ucase() iv. max ()	1
15.	Linux,MySQL and Mozilla Firefox software come under which category- (a) Propriety (b) FOSS (c) Freeware (d) Shareware	1
16.	Nitish received an email warning him of closure of his bank accounts if he did not update his banking information as soon as possible. He clicked the link in the email and entered his banking information. Next he got to know that he was duped. This is an example of _____ . i. Phishing ii. Identity Theft iii. Digital footprint iv. All of Above	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): -** Cookies are plain text files. **Reasoning (R):-** Cookies store the Profile picture on Social Media.	1

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18.	**Assertion (A):-**To delete a column from Pandas DataFrame,drop() method is used. **Reasoning (R): -** Columns are deleted by dropping columns with index label.	1
	SECTION B	
19.	Differentiate between Internet and Intranet. **OR** Mention any four networking goals.	2
20.	Rakesh, a database administrator needs to display subject wise sum of marks of **'CS'** and **'IP' subject in student table** . He is encountering an error while executing the following query: **SELECT SUBJECT, SUM( ) FROM STUDENT GROUP BY SUBJECT WHERE SUBJECT='CS' OR SUBJECT= 'IP';** Help him in identifying the reason of the error and write the correct query by suggesting the possible correction (s).	2
21.	Preeti 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
22.	Write a program to create series by using a dictionary that stores the number of students in each house of class 12B of your school. **Note: Assume four house names are Shivaji, Tagore, Ashoka and Raman having 15, 5, 10, 12 students respectively and pandas library has been imported as pd.**	2
23.	Explain passive digital footprint with example. **OR** What do you mean by intellectual property ?	2
24.	What will be the output of the following code: **>>>import pandas as pd** **>>>A=pd.Series(data=[35,45,55,40])** **>>>print(A[-1:])**	2
25.	Carefully observe the following code: **import pandas as pd** **Q1={'X1':3000,'X2':4000,'X3':2000,'X4': 1600}** **Q2={'A' :23000,'B':24000,'C':22000}** **price={1:Q1,2:Q2}** **df=pd.DataFrame(price)** **print(df)** **Answer the following:** i. List the index of the DataFrame df ii. List the column names of DataFrame df.	2

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SECTION C

26. Write outputs for SQL queries (i) to (iii) which are based on the given table CUSTOMER: [3]

TABLE: CUSTOMER

CNO	CNAME	CITY	QUANTITY	DOP
C01	GURPREET	NEW DELHI	150	2022-06-11
C02	MALIKA	HYDERABAD	10	2022-02-19
C03	NADAR	DALHOUSIE	100	2021-12-04
C04	SAHIB	CHANDIGARH	50	2021-10-10
C05	MEHAK	CHANDIGARH	15	2021-10-20

i. **SELECT CONCAT(CNAME,CITY) FROM CUSTOMER WHERE QUANTITY>50;**
ii. **SELECT CITY FROM CUSTOMER WHERE DOP >2021-10-10;**
iii. **SELECT POWER (QUANTITY,2) FROM CUSTOMER WHERE CITY= 'HYDERABAD';**

27. Write a Python code to create a DataFrame with appropriate column headings from the Dictionary given below: [3]

{'A':['ALOK','MANOJ','RAM','RAVI'],'B':[20,30,40,50],'C':[1000,2000,3000,4000]}

28. Consider the given DataFrame **'Item':** [3]

	Name	Price
0	Note Book	100
1	Project File	120
2	Pen Drive	325
3	IP Book	500

Write suitable Python statements for the following:

i. Add a column called **Qty** with the following data: [15,20,30,40].
ii. Add a new Item named 'The Parker Pen' having price 200.
iii. Remove the column Qty.

29. Rani has recently shifted to a new city and school. She does not know many people in her new city and school. But all of a sudden, someone is posting negative, demeaning comments on her social networking profile etc. [3]

She is also getting repeated mails from unknown people. Every time she goes online, she finds someone chasing her online.

i. What is this happening to Rani?
ii. What immediate action should she take to handle it?
iii. Is there any law in India to handle such issues? Discuss briefly.

OR

What do you understand by Cyber Bullying? Write the three common places where cyberbullying occurs?.

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30.	Based on table **School** given here, write suitable SQL queries for the following:	3

Roll No	Name	Class	Gender	City	Marks
1	Abhishek	XI	M	Agra	430
2	Prateek	XII	M	Mumbai	440
3	Sneha	XI	F	Agra	470
4	Nancy	XII	F	Mumbai	492
5	Himnashu	XII	M	Delhi	360
6	Anchal	XI	F	Dubai	256
7	Mehar	X	F	Moscow	324
8	Nishant	X	M	Moscow	429

i. Display class wise lowest marks.
ii. Display city wise total marks.
iii. Display total number of male and female students.

OR

Discuss the significance of Order by clause in detail with the help of suitable example.

SECTION D

31. Write the SQL functions which will perform the following operations: 5

i. Display the string "chest" from the string " Manchester United"

ii. Display the word "hello" from the string "$$$$$$$hello$$$$$$$$".

iii. To display the name of the month eg, January or February from the current date.

Write the Output that will be generated by the SQL command :

iv. SELECT SYSDATE();

v. SELECT INSTR("HELLO WORLD", "he")

OR

Explain the following SQL functions using suitable examples.

i. LCASE()
ii. LTRIM()
iii. SUBSTR()
iv. DAYNAME()
v. SQRT()

32. Krishna University is setting up the academic blocks at Jalandhar and is planning to connect them through a network. The University has 4 blocks named BIZZ BLOCK, TECHY BLOCK, ADMIN BLOCK and HR BLOCK. The distance between these blocks and no. of computers in each block are as follows :- 5

DISTANCE	
ADMIN to BIZZ Block	50 m
ADMIN to TECHY Block	85 m
ADMIN to HR	110

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	Block	
	BIZZ to TECHY Block	45 m
	BIZZ to HR Block	40 m
	TECHY to HR Block	25 m

No. of Computers	
ADMIN	25
TECHY Block	60
HR Block	110
BIZZ Block	30

a) Suggest the most suitable place to install the server and justify the answer.
b) Suggest the placement of the Repeater in the network with justification
c) Suggest the device to be placed in each of these blocks to efficiently connect all the computers with justification.
d) The university is planning to connect the ADM Block to KOLKATA, which is more than 1500 Kms from University. Suggest an economic way to connect it with reasonably high speed with justification
e) Which of the following will you suggest to establish the online face to face communication between the people the ADMIN office to another office situated at Mumbai?
i) Cable TV ii) Email iii) Video conferencing iv) Text chat

33 Consider the following graph. Write a program in python to draw it. (Height of Bars are 10,1,0,33,6 8) — 5

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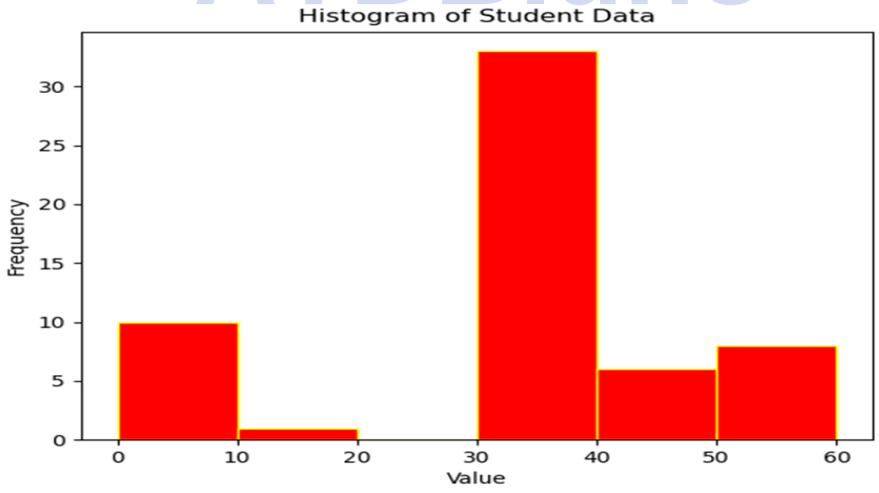

OR

Write a python program to plot a line chart based on the given data to depict the changing weekly average marks of Raman for four weeks test.

Week=[1,2,3,4]
Avg_Marks=[50,82,68,54]

SECTION E

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34	Saumya, a database administrator has designed a database for a Company. Help her by writing answers of the following questions based on the given table: **TABLE: EMP** ECODE ENAME SEX DESIG SALARY DOB E001 ROHAN M CLERK 9000 2001-01-21 E002 AMIT M MANGER 20000 2001-12-12 E003 ANITA F NURSE 10000 2001-11-10 E004 SUMIT M PEON 6000 2009-11-12 E005 KUKI F CASHIER 8000 2001-12-07 i. Write a query to display employee names in lower case. ii. Write a query to display the highest salary of the EMP iii. Write a query to count total number of Male Employee . **OR (Option for part iii only)** Write a query to count total number employee year wise.	1+1+2
35	Consider the following dataframes and write the command to perform following operations on the dataframes Cls1 and Cls2: Cls1 Cls2 **(i)** To subtract Cls2 from Cls1 (ii) To add Cls1 and Cls2. (iii) To rename column Hindi as Science in Cls1 **OR (Option for part iii only)** To change the index label of Cls1 from 2 to two and from 3 to three.	1+1+2

Cls1

	Eng	Maths	Hindi
0	43	42	40
1	23	41	53
2	65	57	62
3	12	11	17

Cls2

	Eng	Maths	Hindi
0	32	53	31
1	54	21	65
2	31	73	36
3	21	51	43

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KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION

SAMPLE PAPER SET : 4

CLASS : XII **SUBJECT: 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

	PART A	
1.	In computer network, the process of converting analog signal into digital signal is known as: i. Transmission ii. Modulation iii. Conversion iv. Demodulation	1
2.	A person who deliberately sows discord on the Internet bystarting quarrels or upsetting people is called as: i. Cyber Bullying ii. Cyber Trolling iii. Hacking iv. Doxing	1
3.	Which of the following are feasible methods of e-waste management: i. Reduce ii. Reuse iii. Recycle iv. Allof the above	1
4.	Which command must be written after order by command to display the detail in descending order in SQL.	1
5.	If column Quantity contains the data set (5,4,7,5,8,5,4), what will be the output after the execution of the given query? SELECT SUM(DISTINCT Quantity) FROM sales; i.38 ii. 24 iii.4 iv.None	1

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6.	FLOSS stands for _____ i. Free Liable Open Source Systems ii. Free Libre Open Source Software iii. Free License for Open Source Software iv. Final License for Open Systems Software	1
7.	Which SQL statement do we use to find out the total quantity of all the items in the table SALES? i. SELECT * FROM SALES; ii. SELECT COUNT (*) FROM SALES; iii. SELECT COUNT (QTY) FROM SALES; iv. SELECT SUM (QTY) FROM SALES;	1
8.	Which one of the following is a multi-row function? i. count() ii. round() iii. now() iv. length()	1
9.	Which one of the following functions is used to find the weekday name for a given date in MYSQL. i. WEEKDAY() ii. WEEK() iii. DAY() iv. DAYNAME()	1
10.	Given a Pandas series called s, the command which will display the last 5 rows is _____. i. print(s.Tail()) ii. print(s.tail(5)) iii. print(s.Tail(5)) iv. both a and c	1
11.	Which of the following statement will be used to install Pandas? i. pip install python-pandas ii. pip install pandas iii. python install python-pandas iv. python install pandas	1
12.	Which attribute is used to get total number of elements in a Series? i. values ii. shape iii. ndim iv. size	1
13.	Which amongst the following is not an example of a network device? i. Router ii. Repeater iii. Hub iv. None	1
14.	In SQL, which function is used to extract a substring from a string (starting at any position). i. MID() ii.SUBSTR()	1

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	iii. SUBSTRING() iv. All of the above	
15.	A document that provides legally binding guidelines for the use and distribution of software. i. Copyright ii. Patent iii.FOSS iv. License	1
16.	Soham uploaded one video in his youtube channel where he used one background music downloaded from somewhere on Internet without giving credit to the source. He is violating i.Intellectual property right ii. Patent iii. Copyright iv. None of the above	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) :** MAC Addresss is 06 bytes long address and represented in hexadecimal numbers. **Reason (R) :** IP and MAC both type of addresses are used while communicating over a network.	1
18.	Assertion (A) : Professionals and developers are using the pandas library in data science and machine learning. Reason (R) : pandas is an open source Python library which offers high performance, easy-to-use data structures and data analysis tools.	1
	PART B	
19.	Explain the term Website and Web Server. OR What is the difference Static webpage and Dynamic webpage	2
20.	Sam wrote the following query to display the details of parents whose age has not been assigned. SELECT * FROM PARENT WHERE AGE != NULL; But didn't get the desired output. Help him in identifying the reason of the error and write the correct query by suggesting the possible correction.	2
21.	What is the purpose of Having clause in SQL? Explain with the help of suitable example.	2
22.	Write a program to create a series object States using a list that stores the Capital of each states. Note: Assume four States as index are Bihar, Maharashtra, Assam and Rajasthan having values are Patna, Mumbai, Guwahati and Jaipur respectively and pandas library has been	

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	imported as pd.	
23.	List any two health hazards related to excessive use of Technology. OR Ms. Kanika, in charge of Computer Lab in Hills International school, recently discovered that the communication between her lab and the primary block of the school is extremely slow and signals drop quite frequently. The distance between these two blocks is 150 meters. a. What is the type of network used in the school. b. Which device which may be used for smooth communication. Justify your answer	2
24.	What will be the output of the following code: import pandas as pd x={'A':[50,10],'B':[80,20],'C':[12,30],'D':[18,40]} tot_Sales={"Sales":x} df=pd.DataFrame(tot_Sales) print(df)	2
25.	Carefully observe the following code: import pandas as pd x=[[100,200,300],[10,20]] df=pd.DataFrame(x) print(df) Answer the following: (i) Display the dataframe (ii) Write the syntax to display size and dimension of the above dataframe.	2
	SECTION C	
26.	Write outputs for SQL queries (i) to (iii) which are based on the given table Employee:	3

E_ID	FNAME	LNAME	SALARY	JOINING_DATE	DEPARTMENT
1	Mansa	Singh	100000	2014-02-20	HR
2	Nikita	Kapoor	80000	2014-07-11	Admin
3	Vaibhav	Singh	300000	2014-02-21	HR
4	Atul	Gupta	500000	2014-02-20	Admin
5	Jai	Kumar	200000	2014-02-11	Admin

(i) SELECT INSTR(LNAME, □a□) FROM EMPLOYEE WHERE DEPARTMENT != □HR□
(ii) SELECT POW(DAY(JOINING_DATE),MONTH(JOINING_DATE)) FROM EMPLOYEE WHERE SALARY >=200000;
(iii) SELECT * FROM EMPLOYEE WHERE MID(LNAME,4,2)= □gh□

27.	Write a Python code to create a DataFrame df using List of Lists from the data given below:	3

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	ENAME	DEPTID	SALARY
101	Alex	2	4500
102	Bob	1	3500
103	Clarke	1	2700

28. Consider the given DataFrame ITEM : 3

	Iname	Itype	Price	Quantity
100	Soap	Cosmetics	50	100
101	Notebook	Stationery	30	70
102	Pen	Stationery	20	200
103	School Bag	Stationery	300	50
104	Pencil	Stationery	10	200
105	Face Cream	Cosmetics	150	25

(i) Add a new row with values (index as 106, Iname- Pencil Box, Itype- Stationery, Price- 180, Quantity- 210)using appropriate function.
(ii) Delete the newly added row.
(iii) Add a new column TOTAL in dataframe where the TOTAL is addition of Price and Quantity.

29. You got the below shown email regarding your netflix account. Answer the following: 3

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Dear customer,

Sorry for the interruption, but we are having trouble authorising your credit card. Please visit www.netflix.com/youraccountpayment to enter your payment information again or to use a different payment method. When you have finished, we will try to verify your account again. If it still does not work, you will want to contact your bank.

If you have any questions, we are happy to help. Simply call us at any time on 539 241 5353 .

(i) What will happen if you click on the given URL?
(ii) Is the email an example of cyber-crime? If yes, then specify which type of cyber-crime is it.
(iii) Justify your answer.

OR

What do you understand by Phishing? How does it work? Give some examples of phishing attack.

30. A relation EMPLOYEE is given below: 3

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EMPID	ENAME	DEPTID	SALARY
101	Alex	2	4500
102	Bob	1	3500
103	Clarke	1	2700
104	John	2	5000
105	Harry	3	3000
106	Sam	3	3500

Write SQLcommands to:

a. Display the average salary of each Department

b. Display the total salary of each department where it s total is more than or equal to 6500

c. Display the details of Employees in descending order of Employee name

OR

Differentiate between Group By Clause and Order By Clause with suitable examples for each.

SECTION D

31. Write suitable SQL query for the following: 5

i. To display the name of the month for the current date.

ii. To display the weekday name for the current date.

iii. To display the position of the first occurrence of ka in karnataka

iv. To display the string in Upper case Python Program

v. To compute the remainder of numerator 17 and denominator 17.

OR

Explain the following SQL functions using suitable examples.

i. LEFT()

ii. INSTR()

iii. SUBSTR()

iv. MONTHNAME()

v. MOD()

32. Himalayan Medic Center has set up its new center in Dehradoon. It has four buildings with the names as Research Lab, Store, Accounts and Packaging Unit 5

Shortest Distances between various blocks in meters:

Accounts to Research Lab	55 m
Accounts to Store	150 m
Store to Packaging Unit	160 m
Packaging Unit to Research Lab	60 m
Accounts to Packaging Unit	125 m
Store to Research lab	180 m

Number of computers in each building:

Accounts	30
Research Lab	110
Store	20
Packaging Unit	65

i. Suggest a cable layout of connections between the buildings.

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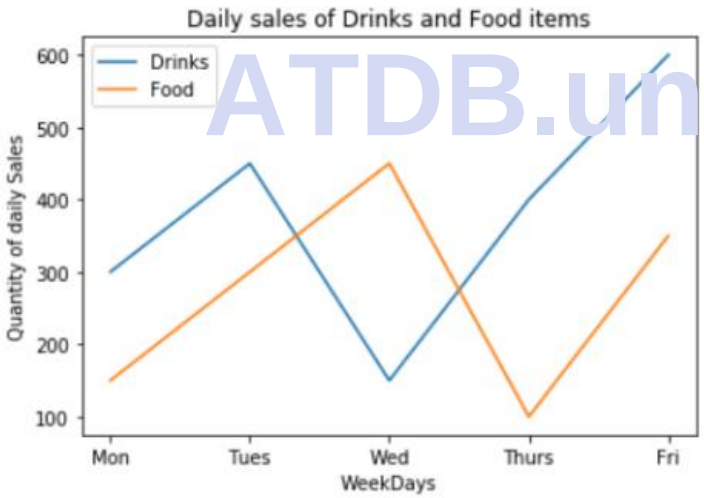
	ii. Suggest the most suitable place (i.e. building) to house the server of this organization. Justify your answer iii. Suggest the placement of Hub/Switch/Repeater in the network. iv. Mention an economic technology to provide internet accessibility to all the buildings. v. Suggest a system (hardware/software) to prevent unauthorized access to or from the network.	
33.	Write Python code to create a horizontal bar graph of the following data with tastiest fruit based on number of people who likes it. Give appropriate title and labels on X axis and Y axis. Fruits | No. of people Apple | 35 Orange | 30 Banana | 10 KiwiFruit | 30 BlueBerry | 40 Grapes | 5 **OR** Consider the following graph .Write the python program to plot line graphs showing daily sales of Drinks and Food items for five days  Also give suitable python statement to save this chart.	5
	SECTION E	

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34.	Consider a table MOVIE with the following data: | MovieID	MovieName	Category	ReleaseDate	ProductionCost	BusinessCost
---	---	---	---	---	---
001	Hindi_Movie	Musical	2018-04-23	124500	130000
002	English_Movie	Horror	2017-08-06	245000	118000
003	Bengali_Movie	Adventure	2017-01-04	720000	100000
004	Telugu_Movie	Action	2018-04-15	100000	80000
005	Punjabi_Movie	Comedy	2019-10-27	500000	120000 | i. Write a query to display the position of first occurrence of Movie in MovieName. ii. Write a query to display the details of movies where the category has 6 characters. iii. Write a query to display the total Production Cost of movies whose release month is in April. **OR (Option for part iii only)** Write a query to display the total number of movies released in each Year.	1 + 1 + 2
35.	Consider the following Data Frame **dfrm** |	Class	Marks	Name	Roll no	Section
---	---	---	---	---	---
0	XII	75	Alex	1	A
1	XII	60	Bob	2	B
2	XII	65	Clarke	3	C
3	XII	90	John	4	A
4	XII	71	Sam	5	B | A. Predict the output of the following Python statement: i. print(dfrm.columns) ii.dfrm.insert(1, "Age",[16,17,17,16,18]) print(dfrm) B. Write Python statement to add a new row(with values as "XII,80,Tarun,6, C) using appropriate Function. OR (Option for part iii only) Write Python statement to compute and display the details of those students who are not in section is A or D.	1 + 1 + 2

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KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION

SAMPLE PAPER SET : 5

CLASS : XII **SUBJECT: 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

	PART A	
1.	Collection of millions of interlinked web pages and resources on the internet forms the: i. Web Server ii. Website iii. World Wide Web iv. E-mail System	1
2.	The practice of sending fraudulent messages that appear to come from a reputable source is known as: i. Hacking ii. Plagiarism iii. Identity Theft iv. Phishing	1
3.	Which is not a measure to recycle your e- waste safely. i. Donate the old and used electronics. ii. Use certified e-waste recycler iii.Visit Civic institutions for recycling options. iv. Dump it in water or dig them in earth.	1
4.	The outputs of the given two commands are 12 and 10 respectively. Select COUNT(*) From Employee; Select COUNT(Designation) From Employee; How many NULL values are there in Designation column of the Employee table? a. 12 b. 10 c. 2 d. None of these	1

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5.	If column "Age" contains the data set (10,7,9,6,10,10), what will be the output after the execution of the given query? SELECT AVG (DISTINCT Age) FROM student; i. 8.67 ii. 8 iii. 9 iv. 5.33	1
6.	In which year the Indian IT Act, 2000 got updated? i) 2006 ii)2008 iii)2010 iv)2012	1
7.	Which SQL statement do we use to find out the total salary of all the employees in the table EMPLOYEE? i. SELECT * FROM EMPLOYEE; ii. SELECT COUNT (*) FROM EMPLOYEE; iii. SELECT COUNT (salary) FROM EMPLOYEE; iv. SELECT SUM (salary) FROM EMPLOYEE;	1
8.	Which one of the following is a single row function? i. max() ii. count() iii. avg() iv. length()	1
9.	Predict the output of the following query: select round(791.435,-2);	1
10.	Consider the following series S : 1 Red 2 Green 3 Orange 4 Yellow 5 Black Write the command that generates the output as: 1 Red 3 Orange 5 Black	1
11.	The following code create a dataframe named D1 with _____ columns. import pandas as pd D1 = pd.DataFrame([1,2,3]) a) 1 b) 2 c) 3 d) 4	1
12.	Pandas Series is: _____ i. 2-Dimensional	1

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	ii. 3-Dimensional iii. 1 Dimensional iv. Multidimensional	
13.	Which amongst the following is not an example of a website? i. Facebook ii. Edge iii. amazon iv. None	1
14.	In SQL, which function is used to display the total number of characters in a string? i. LEN() ii.LENGTH() iii. COUNT() iv. Both ii and iii	1
15.	Legal term to describe the rights of a creator of original works like sculptures, writings, computer software etc is: i. Copyright ii. Patent iii.FOSS iv. Trademark	1
16.	The one who tries to gain unauthorised access to computers or networks in order to steal sensitive data with the intent to damage or bring down systems is called i. Cracker ii. Plagiarism iii. Ethical Hacker iv. Phishing	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): - We should always prefer websites using secure HTTP connection. Reasoning (R):- The web pages are transferred over the web using Hyper Text Transfer Protocol.	1
18.	Assertion (A): - Boolean indexing is a type of indexing. Reasoning (R):- DataFrame.loc(True) function can be used to find the relative values where index value is True	1
	PART B	
19.	Explain the term Add-ons and Plug-in. OR Differentiate between router and gateway.	2
20	Sam wrote the following query to display the total number of employees in each	2

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.	department where the total employees are more than 5. SELECT DEPT, COUNT(*) FROM EMPLOYEE WHERE COUNT(*)>5 GROUP BY DEPT; But didn't get the desired output. Help him in identifying the reason of the error and write the correct query by suggesting the possible correction.	
21.	What is the purpose of Group By clause in SQL? Explain with the help of suitable example.	2
22.	Write the output of the given program: import pandas as pd S1=pd.Series([5,6,7,8,10],index=['v','w',' x','y','z']) S2=pd.Series([2,6,1,4,6],index=['z','y','a','w','v']) print(S1-S2)	
23.	Explain about the various communication etiquettes. OR In a class, the teacher has assigned projects to two top students. Student A has invented a new concept and applied for rights to the government while Student B has designed a new logo for his School. i.Which type of rights Student A will get for his new concept? a. Trademark b. Copyright c. Patent d. Ownership ii. What type of rights Student B will get for designing the logo? a. Trademark b. Copyright c. Patent d. Ownership	2
24.	What will be the output of the following code: import pandas as pd data= {'Name':['Sachin','Dhoni','Virat','Rohit','Shikhar'], 'Age':[26,27,25,24,22],'Score':[87,89,89,55,47]} df=pd.DataFrame(data,index=['a','b','c','d','e']) print(df['Score']>=87)	2
25.	Carefully observe the following code: import pandas as pd x={'a':100, 'b':200} y={'a':5,'c':20} z={'b':50,'d':40} df=pd.DataFrame({100:x,200:y}) print(df) Answer the following: (i) Display the dataframe (ii) what will be the output of df.shape	2
	SECTION C	

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26.	Write outputs for SQL queries (i) to (iii) which are based on the given table COURSE: (i) SELECT INSTR(CNAME, 'D') FROM COURSE WHERE FEES BETWEEN 12000 AND 18000; (ii) SELECT MOD(DAY(STARTDATE),MONTH(STARTDATE)) FROM COURSE; (iii) SELECT * FROM COURSE WHERE MONTHNAME(STARTDATE)= 'JULY';	3
27.	Write a Python code to create a DataFramedf using dictionary of dictionaries from the data given below:	3
28.	Consider the given DataFrame 'batsman': (i) Add a new column FinalScore where the finalscore is sum of score1 and score2. (ii) Add a new row with values (index as 4, Bno- 5, name- Sachin Tendulkar, score1- 99, score2- 85) using appropriate function (iii) Delete the columns Bno and score2.	3
29.	Ms.Suhana who is a well-known celebrity in entertainment industry by profession faced following situations. Identify the type of crime for each situation/incident happened to her? (i) Someone deliberately starts argument and posted derogatory messages on her online. (ii) She received an email which looked like from her manager where a link was provided to fill some sensitive information. She provided the information which then resulted in breach of confidentiality. (iii) Her official social media account was controlled by somebody in an unauthorised way. OR What do you understand by e-waste? What are the different methods of e-waste management? Discuss each method briefly.	3
30.	Based on table Salesman given here, write suitable SQL queries for the following:	3

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

	Name	CLASS	marks
A	Anamay	XI	95
B	Aditi	XI	82
C	Mehak	XI	65
D	Kriti	XI	45

	Bno	name	score1	score2
0	1	Sunil Grover	90	80
1	2	sourav ganguli	65	4
2	3	virat ohli	70	9
3	4	Rahul dravid	80	70

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SNO	SNAME	SALARY	BONUS	DOJ
A01	AKASH	25000	106.25	2019-10-14
A02	ANKITA	15000	67.33	2012-08-23
B02	BINAYA	12500	52.41	2015-02-03
B03	NEESHA	35000	NULL	2012-10-08
C07	LALITA	10600	45.78	2021-03-17

(i) Display the bonus after rounding off to 1 decimal places.
(ii) Display the total number of character of all SNAME where the bonus is assigned.
(iii) Display the total salary of each YEAR of JOINING.

OR

Consider the table WORKER below and answer the following questions:-

Ecode	Name	Gender	Desig	Doj
11	RADHE	M	SUPERVISOR	1998-12-20
12	FIZZA	F	CLERK	1997-08-07
13	RADHIKA	F	SUPERVISOR	2000-09-06
14	SHYAM	M	OPERATOR	1999-07-16
15	SANYA	F	OPERATOR	1999-07-13

i. What will the output of following command:
SELECT NAME FROM WORKER WHERE DOJ>"1998-12-20";

ii. Raghav wants to know number of male and female employee in table worker. Suggest him the SQL command to do so.

iii. Write SQL statement to display the Name and month name in the field DOJ.

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SECTION D

31. Write suitable SQL query for the following: 5

i To display the name of the month for the current date.

ii To display the leftmost 5 characters from the string“INFORMATICS PRACTICES”.

iii To display the position of first occurrence of “iya”in the string “Kendriya Vidyalaya”

iv To display the column NAME in uppercase from table STUDENT.

v To compute the remainder of 120 and 7 using sql function.

OR

Explain the following SQL functions using suitable examples.

i. DAYNAME()

ii. MID()

iii. TRIM()

iv. LENGTH()

v. POWER()

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<table>
<tr>
<td>32.</td>
<td>A Software Development Company has set up its new centre at HYDERABAD for its officeand web-based activities. It has 4 blocks of buildings named Block A, Block B, BlockC, Block D.

Number of Computers:
<table>
<tr><td>Block A</td><td>25</td></tr>
<tr><td>Block B</td><td>50</td></tr>
<tr><td>Block C</td><td>125</td></tr>
<tr><td>Block D</td><td>10</td></tr>
</table>

Shortest Distances between various blocks in meters:
<table>
<tr><td>Block A to Block B</td><td>60 m</td></tr>
<tr><td>Block B to Block C</td><td>40 m</td></tr>
<tr><td>Block C to Block A</td><td>30 m</td></tr>
<tr><td>Block D to Block C</td><td>50 m</td></tr>
</table>
(i) Suggest the most suitable place (i.e. block) to house the server of this company with a suitable reason.
(ii) Suggest the type of network to connect all the blocks with suitable reason.
(iii) Suggest the placement of following devices with justification:
1. Switch/Hub
2. Repeater
(iv) Suggest a system (hardware/software) to prevent unauthorized access to or from the network
(v) Which of the following will you suggest to establish the online face to face communication between the people in the BLOCK A of Hyderabad head office and Delhi campus?
a) Cable TV
b) Email
c) Text chat
d) Video conferencing</td>
<td>5</td>
</tr>
<tr>
<td>33.</td>
<td>Write Python code to plot a bar chart for Result Analysis as shown below:</td>
<td>5</td>
</tr>
</table>

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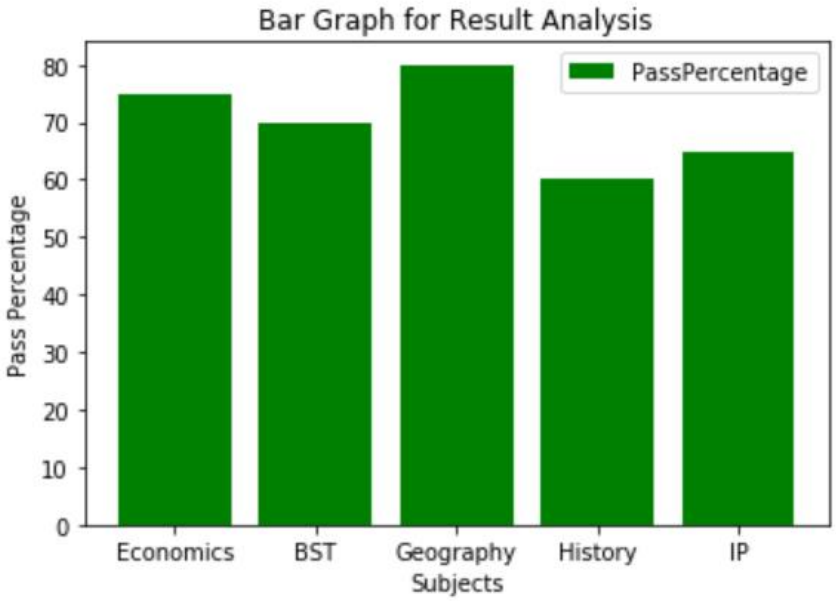

Also give suitable python statement to save this chart in pdf format.

OR

Write a python program to plot a line chart based on the given data to depict the runs scored by India. Create a list "OVER" with the data 10, 20, 30, 40, 50. Create another list "RUNS" to store the runs scored as 45, 25, 50, 75, 100

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SECTION E

34. A relation ITEM is given below : (1 + 1 + 2)

I_ID	ItemName	Manufacturer	Price
PC01	Personal Computer	AB Corp	35000
LC05	Laptop	AB Corp	55000
PC03	Personal Computer	AZee	32000
PC06	Personal Computer	COMPAQ	37000
LC03	Laptop	Pacific	57000
PT04	Tablet	AZee	28000

i. Write a query to display the IteMName in uppercase and Manufacturer in lowercase.
ii. Write a query to display the total price of each manufacturer.
iii. Write a query to displayItemName wise total number of items.

OR (Option for part iii only)

Write a query to displaytotal number of items of each manufacturer where total items is more than 1.

35. Consider the following Data Frame **df** (1 + 1 + 2)

	Pcd	title	Price	qty
0	P01	Notebook	85	500
1	P02	Pencilbox	76	200
2	P03	WaterBottle	129	50
3	P04	SchoolBag	730	70

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	A. Predict the output of the following python statement: i. df.columns ii. df.iloc[1:3,1:] B. Write Python statement to add a new column ACC_NO (with values as – [135,153,225,442]) before qty column OR (Option for part iii only) Write Python statement to compute and display the details of those items whose Price is in between 80 and 150 (both inclusive)	

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KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION

SAMPLE PAPER SET : 6

CLASS : XII **SUBJECT: INFORMATICS PRACTICES (065)**

TIME:3 HOURS **M.M.70**

General Instructions:

1. This question paper contains five sections, Section A toE.
2. All questions arecompulsory.
3. Section A have 18 questions carrying 01 markeach.
4. Section B has 07 Very Short Answer type questions carrying 02 markseach.
5. Section C has 05 Short Answer type questions carrying 03 markseach.
6. Section D has 03 Long Answer type questions carrying 05 markseach.
7. Section E has 02 questions carrying 04 marks each. One internal choiceis given in Q35 against part c only.
8. All programming questions are to be answered using Python Languageonly.

	PART A	
1.	Computer LAB cable network is an example of: i. LAN ii. WAN iii. MAN iv. Internet	1
2.	Which of the following is a type of cyber crime? i. Datatheft ii. Installing antivirus forprotection iii. Laptop Theft iv. None of the above.	1
3.	What is an example of e-waste? i. Used notebooks ii. Unused oldclothes. iii. Unused oldcomputers iv. Empty cans	1
4.	What will be the output if inventory table has total 5 columns and 12 rows/records **SELECT COUNT(*) FROM inventory;** i. 70 ii. 17 iii. 12 iv. None of the above.	1

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5.	If column **"Salary"** contains the data set (6000,5000,7000,5000,8000), what will be the output after the execution of the given query? **SELECT SUM (DISTINCT Fees) FROM student;** i. 26000 ii. 10000 iii. 20000 iv. 33500	1
6.	**'F'** in FOSS stands for: i. Freedom ii. Free iii. Faulty iv. First	1
7.	Which SQL statement do we use to find out the total number of values present in the the column Fee. Table name is Student. i. SELECT * FROMSTUDENT; ii. SELECT COUNT (FEE) FROMSTUDENT; iii. SELECT FIND (FEE) FROMSTUDENT; iv. SELECT SUM (FEE) FROMSTUDENT;	1
8.	Which one of the following is not an aggregate function? i. ROUND() ii. SUM() iii. COUNT() iv. AVG()	1
9.	Which one of the following functions is used to find the smallest value from the given data in MySQL? i. MIN() ii. MAXIMUM() iii. BIG() iv. LARGE()	1
10.	To display last five rows of a series object **'S1'**, you may write: i. S1.Head() ii. S1.Tail(5) iii. S1.Head(5) iv. S1.tail()	1
11.	Consider the following DataFrame: student_df, having columns Name, Class and Marks. Select the correct statement from the followings to get the sorted value of the column marks. (A) student_df.sort_values(by=["marks"]) (B) student.sort([“Marks”]) (C) sort(student_df[“Marks”]) (D) sort_values(student_df[“Marks”])	1

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12.	Which of the following can be used to specify the data while creating a DataFrame? i. Series ii. List ofDictionaries iii. Structuredndarray iv. All ofthese	1
13.	Which amongst the following is not an example of a browser? i. Chrome ii. Firefox iii. Avast iv. Edge	1
14.	In SQL, which function is used to display dayname. i. Date() ii. Dayname() iii. Day() iv. Now()	1
15.	Legal term to describe the rights of a creator/inventor of original invention is i. Copyright ii. Patent. iii. Trademark iv. FOSS	1
16.	_____Is the trail of data we leave behind when we visit any website(or use any online application or portal) to fill-in data or perform anytransaction. i. Offlinephishing ii. Offlinefootprint iii. Digitalfootprint iv. Digitalphishing	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 forA ii. Both A and R are true and R is not the correct explanation forA iii. A is True but R isFalse iv. A is false but R isTrue		
17.	**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 to store certain information on the server's computer.	1
18.	**Assertion (A):-** DataFrame has both a row and column index. **Reasoning (R): -** A DataFrame is a two-dimensional labelled data structure like a table of MySQL.	1

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	PART B	
19.	Explain the terms Static and Dynamic Webpage . **OR** Mention any four networking goals.	2
20.	Mahesh, a database administrator needs to display house wise total number of records of **'Green'** and **'Orange'** house. She is encountering an error while executing the following query: **SELECT HOUSE, COUNT (*) FROM STUDENT GROUP BY HOUSE WHERE HOUSE='Green' OR HOUSE= 'Orange';** Help her in identifying the reason of the error and write the correct query by suggesting the possible correction (s).	2
21.	What is the purpose of Having clause in SQL?Explain with the help of suitable example.	2
22.	Write a program to create a series object usinga dictionary that stores the number of students in each house of class 12A of yourschool. **Note: Assume four house names are H1, H2, H3 and H4 having 10, 20, 30, 40 students respectively and pandas library has been imported as pd.**	2
23.	Explain IPR (Intellectual Property Right) **OR** Mention any four net etiquettes.	2
24.	What will be the output of the following code: **>>>import pandas as pd** **>>>A=pd.Series(data=[32,45,30,40])** **>>>print(A<35)**	2
25.	**Define the following terms :-** **(a)Digital Footprints** **(b)Phishing** OR Ms. Kanika, is studying in Hills International school. She frequently used Internet to surf the web, online shopping and watch you tube videos online. What precautions / measures should she take to curb online frauds?	2

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SECTION C

26 Considerthefollowing Teachertable: WriteSQLcommandsfor(i) to (iii) — 3

Tid	TName	Department	Salary	NoofPeriod
100	Joseph	Physics	45000	25
101	Lakshmi	Hindi	55000	25
102	Neelu	Chemistry	66000	
103	John	Physics	40000	25

i) Display Tname and Salary
ii) Calculate sum of Salary
iii) Count the total value of No. of Period Column

OR

Predict the output of the following SQL queries
i) SELECT TRIM(" ALL THE BEST ");
ii) SELECT LEFT('INFORMATICS',5);
iii) SELECT UPPER (MID("start up india",10));

27. Write a Python code to create a DataFrame with appropriate column headings from the list given below: — 3

[[110,'Gurman',98],[111,'Rajveer',95],[112,'Samar' ,96],[1113,'Yuvraj',88]]

28. Consider the given Da[illegible]ram **'St[illegible]ck'** — 3

	Name	Price
0	Item1	150
1	Item2	180
2	Item3	225
3	Item4	500

Write suitable Python statements for the following:
i. Add a column called Special_Price with the followingdata: [135,150,200,440].
ii. Add a new book named 'The Secret' having price800.
Remove the columnSpecial_Price.

29. Ruhi has recently shifted to a new city and school. She does not know many people in her new city and school. But all of a sudden, someone is posting negative, demeaning comments on her social networking profile etc. She is also getting repeated mails from unknown people. Every time she goes online, she finds someone chasing her online. — 3

i. What is this happening toRuhi?
ii. What immediate action should she take to handleit?
iii. Is there any law in India to handle such issues? Discussbriefly.

OR

What do you mean by FOSS. Explain in detail and Give Examples

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30

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
8369	SMITH	CLERK	8902	1990-12-18	800	NULL	20
8499	ANYA	SALESMAN	8698	1991-02-20	1600	300	30
8521	SETH	SALESMAN	8698	1991-02-22	1250	500	30
8566	MAHADEVAN	MANAGER	8839	1991-04-02	2985	NULL	20
8654	MOMIN	SALESMAN	8698	1991-09-28	1250	1400	30
8698	BINA	MANAGER	8839	1991-05-01	2850	NULL	30
8882	SHIAVNSH	MANAGER	8839	1991-06-09	2450	NULL	10
8888	SCOTT	ANALYST	8566	1992-12-09	3000	NULL	20
8839	AMIR	PRESIDENT	NULL	1991-11-18	5000	NULL	10
8844	KULDEEP	SALESMAN	8698	1991-09-08	1500	0	30
8886	ANOOP	CLERK	8888	1993-01-12	1100	NULL	20
8900	JATIN	CLERK	8698	1991-12-03	950	NULL	30
8902	FAKIR	ANALYST	8566	1991-12-03	3000	NULL	20
8934	MITA	CLERK	8882	1992-01-23	1300	NULL	10

3

Write Query for the following :

i)Display all the records from employee table.

ii)Display Ename, sal, deptno who are not getting commission from table EMP.

iii)Display employee number, name, salary and annual salary. Assuming that the salary provided is the monthly salary.

SECTION D

31. Write suitable SQL query for the following: 5

i. Display 7 characters extracted from 5th left character onwards from the string 'INDIASHINING'.

ii. Display the position of occurrence of string 'COME' in the string 'WELCOMEWORLD'.

iii. Round off the value 23.78 to one decimalplace.

iv. Display the remainder of 100 divided by9.

v. Removealltheexpectedleadingandtrailingspacesfromacolumnuserid of the table**'USERS'**.

OR

Explain the following SQL functions using suitable examples.

i. UCASE()

ii. TRIM()

iii. MID()

iv. DAYNAME()

v. POWER()

32. 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. 5

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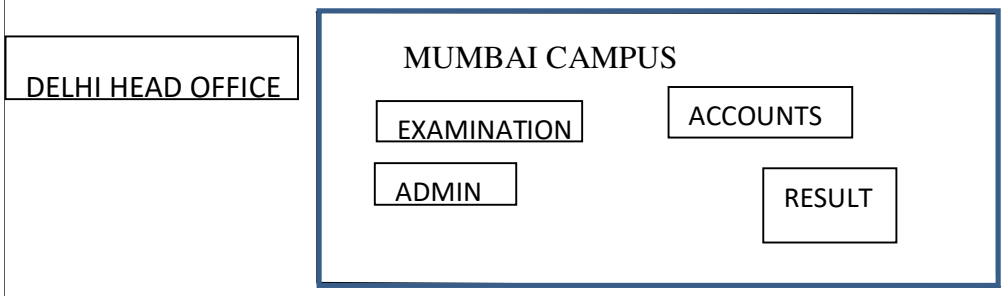
You as a network expert have to suggest the best network related solutions for their problems raised in (i) to (v), keeping in mind the distances between the buildings and other given parameters.



Shortest distances between various buildings:

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

Number of computers installed at various buildings are as follows:

ADMIN	110
ACCOUNTS	5
EXAMINATION	0
RESULT	12
DELHI HEAD OFFICE	20

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(i) Suggest the most appropriate location of the server inside the MUMBAI campus (out of the four buildings) to get the best connectivityformaximumnumberofcomputers.Justifyyouranswer.

(ii) Suggestanddrawcablelayouttoefficientlyconnectvariousbuildings within the MUMBAI campus for a wiredconnectivity.

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

(iv) Company is planning to get its website designed which will allow students to see their results after registering themselves on its server. Outofthestaticordynamic,whichtypeofwebsitewillyousuggest?

(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 headoffice?

a) CableTV
b) Email
c) Videoconferencing
d) Textchat

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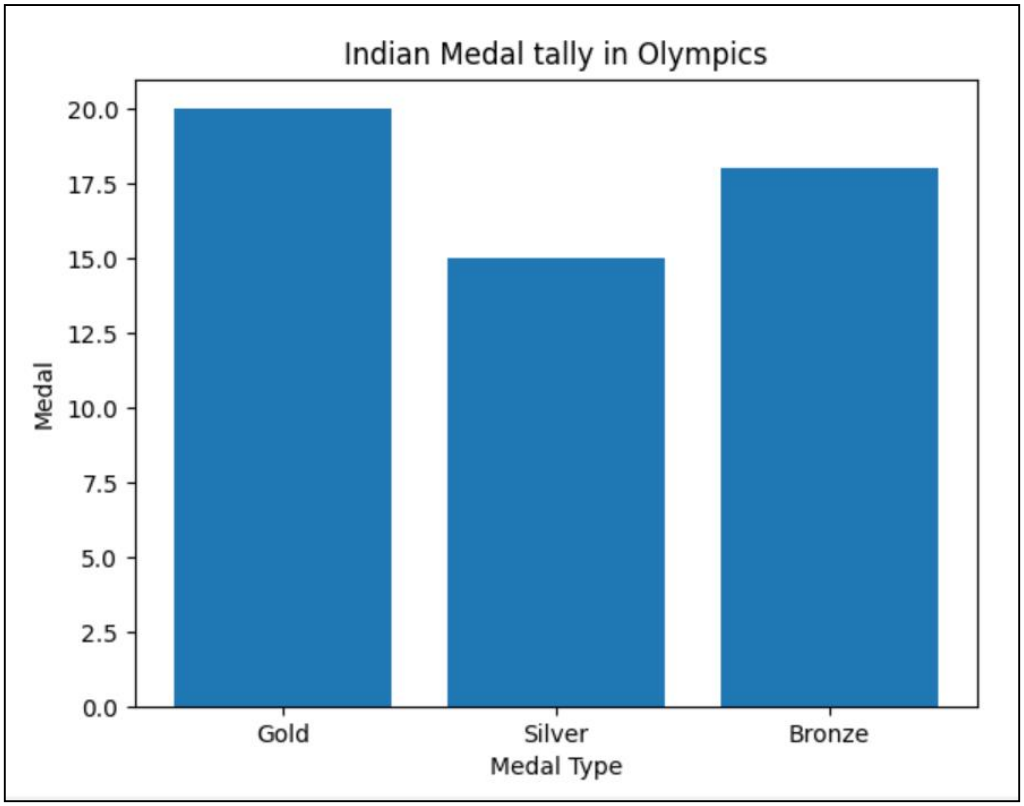
33.	Write Python code to plot a bar chart for India's medal tally as shown below:  Also give suitable python statement to save this chart. **OR** Write a python program to plot a line chart based on the given data to depict the changing weekly average temperature in Delhi for four weeks. Week=[1,2,3,4] Avg_week_temp=[40,42,38,44]	5
	SECTION E	
34.	Shreya, a database administrator has designed a database for a clothingshop. Help her by writing answers of the following questions based on the given table: **TABLE: CLOTH** CCODE | CNAME | SIZE | COLOR | PRICE | DOP C001 | JEANS | XL | BLUE | 990 | 2022-01-21 C002 | TSHIRT | M | RED | 599 | 2021-12-12 C003 | TROUSER | M | GREY | 399 | 2021-11-10 C004 | SAREE | FREE | GREEN | 1299 | 2019-11-12 C005 | KURTI | L | WHITE | 399 | 2021-12-07 i. Write a query to display cloth names in lowercase. ii. Write a query to display the lowest price of thecloths. iii. Write a query to count total number of cloths purchased of medium size.	1+1+2

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OR (Option for part iii only)

Write a query to count year wise total number of cloths purchased.

35. Mr. Som, a data analyst has designed the DataFrame **df** that contains data about ComputerOlympiadwith'CO1','CO2','CO3','CO4','CO5'asindexesshown below. Answer the followingquestions: 1+1+2

	Scholl	Tot_students	Topper	First_Runnerup
CO1	PPS	40	32	8
CO2	JPS	30	18	12
CO3	GPS	20	18	2
CO4	MPS	18	10	8
CO5	BPS	28	20	8

A. Predict the output of the following pythonstatement:
   i. df.shape
   ii. df[2:4]

B. Write Python statement to display the data of Topper column ofindexes CO2 to CO4.

OR (Option for part iii only)

Write Python statement to compute and display the difference of data of Tot_students column and First_Runnerup column of the above given DataFrame.

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KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION
SAMPLE QUESTION PAPER SET-1(2022-23)
Class XII -INFORMATICS PRACTICES (065)

TIME:3 HOURS **M.M.70**

General Instructions:

1. This question paper contains five sections, Section A toE.
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.

	SECTION A	
1	What is the term used when the main server sends mail to another mail server? (a) VoIP (b) SMTP (c) PCB (d) MIME	1
2	What is the difference between copyright and licensing?	1
3	A person who starts quarrels or upsets people on the internet to distract and sow discord by posting inflammatory and digressive, extraneous or off-topic messages to an online community. This person will be referred as in cyber world . i.cyber troll ii. cyber stalker iii. Spyware iv. Hacker	1
4	Write the output of the following command? select ROUND(753.589,-2); (a) 753.58(b) 800 (c) 754 (d) 700	1
5	If on '2019-05-26', it was Sunday, what will be the output of following SQL command? select nameofday('2019-05-27'); (a) Error (b) 5 (c) Monday (d) Sunday	1
6	Expand the term IPR	1
7	**Which of the SQL statements is correct?** (a) SELECT Username AND Password FROM Users; (b) SELECT Username, Password FROM Users; (c) SELECT Username, Password WHERE Username = 'user1'; (d) None of these	1

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8	Which of the following function returns the date value in 'YYYY-MM-DD' from system date? (a) date() (b) now() (c) sysdate() (d) curdate()	1
9	Which of the following function returns the value of a number raised to the power of another number? (a) ROUND( ) (b) POWER( ) (c) POW( ) (d) Both (b) and (c)	1

10	How many elements will be there in the series named "S1"?
	>>> S1 = pd.Series(range(5))
	>>> print(S1)
	a. 5
	b. 4
	c. 6
	d. None of the above
		1

11	The command to display last 3 rows from series named "week" is_____. a. print(week.tail(3)) b. print(week.Tail(3)) c. print(week.Tails(3)) d. print(week.tails(3))	1
12	To display the 3rd, 4th and 5th columns from the 6th to 9th row of a dataframe you can write (a) DF.loc[6:9, 3:5] (b) DF.loc[6:10, 3:6] (c) DF.iloc[6:10, 3:6] (d) DF.iloc[6:9, 3:5]	1
13	Which document view given an appearance as in web browser? **(a)** Draft view **(b)**Outline view **(c)**Web layout view **(d)** Full screen reading	1
14	**Which of the following function is used to FIND the largest value from the given data in MYSQL?** (a) MAX () (b) MAXIMUM () (c) LARGEST () (d) BIG ()	1

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15	Which type of right is related to logowork? (a). Copyright. (b). Trademark. (c). Trade secret. (d). Patent.	1
16	Which of the following is a type of cyber security? (a) Cloud Security (b) Network Security (c) Application Security (d) All of the above	1
	Q17and 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 forA ii. Both A and R are true and R is not the correct explanation forA iii. A is True but R isFalse iv. A is false but R isTrue	
17	Assertion (A) : Social media are websites or applications that enable their users to participate in social networking but they cannot create and share content with others in the community. Reason (R) : We should not waste precious time in responding to unnecessary emails or comments unless they have some relevance for us.	1
18	Assertion (A) : Data visualization refers to the graphical representation of information and data using visual elements like charts, graphs and maps etc. Reason (R) : To install matplotlib library we can use the command pip install matplotlib.	1

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	SECTION B	
19	Expand the following terms related to Computer Networks: a. EDGE b. URL c. TCP/IP d. VoIP OR Define Computer Network. What do you mean by autonomous computers?	2
20	Sangeetha is a database administrator needs to display Block wise total number of records of 2 and 3 Block Apartments. She is encountering an error while executing the following query: SELECT BLOCK, COUNT (*) FROM APARTMENTS GROUP BY BLOCK WHERE BLOCK=2 OR 3; Help her in identifying the reason of the error and write the correct query by suggesting the possible correction (s).	2
21	What is ALIAS in MYSQL? Give an example with MYSQL command.	2
22	Write a program to create a series from a given Tuple data data=(100,'Aavya Verma',96.3,'A').	2
23	What do you understand by Net Etiquettes? Explain any two such etiquettes. OR According to a survey, one of the major Asian countries generate approximately about 2 million tonnes of electronic waste per year. Only 1.5 % of the total e-waste gets recycled. Suggest a method to manage e-waste.	2

24	Give the output of following program:
	import pandas as pd
	s=pd.Series([10,20,30,40,50],index=['a','b','c','d','e'])
	print(s[0]) #or print(s.iloc[0])
	print(s['a':'c']) #or print(s.loc['a':'c'])
	print(s[2]) #or print(s.iloc[s[2])
	print(s['a']) #or print(s.loc['a'])
		2

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25	Carefully observe the following code: import pandas as pd Year1={'P1':5000,'P2':800,'P3':1200,'P4': 1800} Year2={'P' :1300,'Q':1400,'R':1200} totSales={1:Year1,2:Year2} DF=pd.DataFrame(totSales) print(DF) Answer the following: i. List the index of the DataFrameDF ii. List the column names of DataFrame DF.	2
	SECTION C	
26	Constder the table SALE and Write SQL queries (i) to (iii) : TABLE: SALE (i) To display number of cars purchased by each customer from the SALE Table. (ii) To display customer id and number of cars purchased if the customer purchased more than one car from the sale table. (iii) To display number of people in each category of payment mode from the table SALE.	3
27	Write a Python code to create a DataFrame with appropriate column headings from the list given below: [[E001,'Govind',PHY],[E002,'Raju',CS],[E003,'Kiran' ,CHEM],[E004,'Dinesh',ENG]]	3

InvoiceNo	CarId	CustId	SaleDate	PaymentMode	EmpID	SalePrice	Commission
I00001	D001	C0001	2019-01-24	Credit Card	E004	613247.00	73589.64
I00002	S001	C0002	2018-12-12	Online	E001	590321.00	70838.52
I00003	S002	C0004	2019-01-25	Cheque	E010	604000.00	72480.00
I00004	D002	C0001	[illegible]	[illegible]ance	E007	659982.00	79197.84
I00005	E001	C0003	[illegible]	[illegible]ard	E[illegible]2	[illegible]0.00	44317.20
I00006	S002	C0002	[illegible]	[illegible]	E007	[illegible]14.00	74425.68

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28	A dataframe fdf stores data about passengers, Flights and Years. First few of the dataframe are shown below: S_NO Year Months MalePassengers FemalePassengers 1 2019 January 900 300 2 2019 February 1000 180 3 2019 March 980 220 4 2019 April 1100 300 Perform the following operations on the Data Frame : 1.Add both the male and female passengers and assign to column"Total_ passengers" 2. Display the maximum passengers in male passengers and maximum passengers in female passengers of theData Frame. 3. Display the Data Frame.	3
29	i. Posting negative, demeaning comments on her social networking profileis called _____ ii. Chasing and keep track of activities of a person online is called _____ iii. IT act was introduce in year _____ OR What are the different ways in which cyber addiction of a person can be performed?	3
30	**Consider a table ITEMS with the following data:** ItemCode | Item | DatePurchase | UnitPrice | Discount 101 | Frock | 2016-01-23 | 700 | 10 102 | Cot | 2015-09-23 | 5000 | 25 103 | Soft Toy | 2016-06-17 | 800 | 10 104 | Baby Socks | 2014-10-16 | 100 | 7 105 | Baby Suit | 2015-09-20 | 500 | 5 NOTE: Discount column stores discount %. Write SQL commands to: a. To display the number of items that have more than 10% as discount. b. To display the highest unit price of items. c. To display the names of items that has 'Baby' anywhere in their item names. OR What do you mean by Aggregate Functions?. Explain any two aggregate functions with example.	3
	SECTION D	

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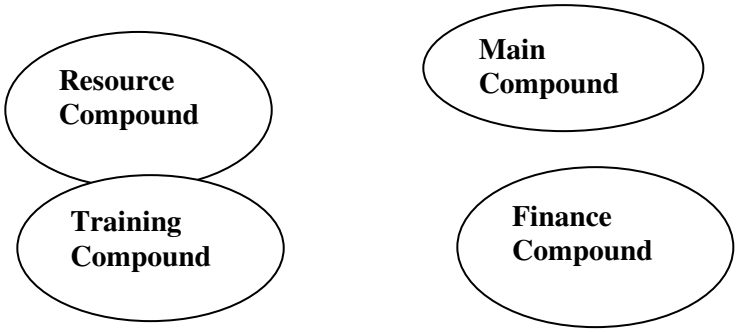
31	Write the names of SQL functions which will perform the following operations: i. To display the current date ii. To convert the string in capital letters 'Thiruvananthpuram' iii. To remove spaces from the end of string "KVS Regional Office Jammu " iv. To display the month from the current date v. To compute the power of a number n1 raised to the power n2 . OR Consider the following tables STATIONERY and answer the questions: Table: STATIONERY S_ID StationeryName Company Price DP01 Dot Pen ABC 10.50 PL02 Pencil XYZ 6.00 ER05 Eraser XYZ 7.50 PL01 Pencil CAM 5.75 GP02 Gel Pen ABC 15.00 Write SQL commands using SQL functions to perform the following operations: i) Display the stationary name and price after rounding off to zero decimal places. ii) Display the occurrence of 'en' in stationary name. iii) Display the first four characters of the stationary name. iv) Display the names of company after converting to lower case. v) Display the length of stationery names.	5
32	"Learn Together" is an educational NGO. It is setting up its new campus at Jaipur for its web based activities. The campus has 4 compounds as shown in the diagram below:  Center to center distances between various Compounds as per architectural drawings (in Metre) is as follows :	5

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	Main Compound to Resource Compound	110 m
	Main Compound to Training Compound	115 m
	Main Compound to Finance Compound	35 m
	Resource Compound to Training Compound	25 m
	Resource Compound to Finance Compound	135 m
	Training Compound to Finance Compound	100 m

Expected Number of Computers in each Compound is as follows:

	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 the server for this NGO. Also, provide a suitable reason for your suggestion.

(4) Suggest the placement of the following devices with justification :

(i) Repeater

(ii) Hub/Switch

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(5) The NGO is planning to connect its International office situated in Mumbai, which out of the following wired communication link, you will suggest for a very high speed connectivity?

(i) Telephone Analog Line

(ii) Optical Fiber

(iii) Ethernet Cable

33	**WAP to display the name of 8 countries with COVID-19 active cases using bar chart with red color.**	5

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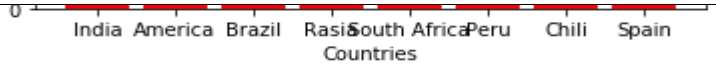
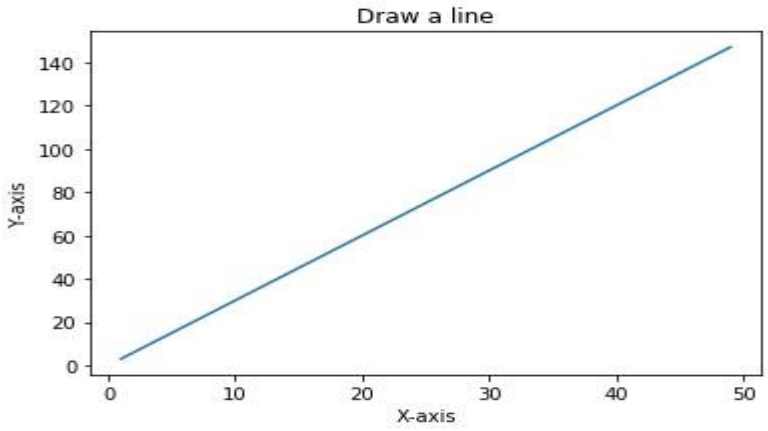


OR

Consider the following graph. Write the Python code to plot line graph:

```
Value of x :
range(1, 50)
```



SECTION E

34 Write SQL queries for (i) to (iii), which are based on the table: STUDENT

RollNo	Name	Class	DOB	Gender	City	Marks
1	Nanda	X	06-06-1995	M	Agra	551
2	Saurabh	XII	07-05-1993	M	Mumbai	462
3	Sanal	XI	06-05-1994	F	Delhi	400
4	Trisla	XII	08-08-1995	F	Mumbai	450
5	Store	XII	08-10-1995	M	Delhi	369
6	Marisla	XI	12-12-1994	F	Dubai	250
7	Neha	X	08-12-1995	F	Moscow	377
8	Nishant	X	12-06-1995	M	Moscow	489

(i) To display the records from table student in alphabetical order as per the name of the student.
(ii) To display Class, DOB and City whose marks is between 450 and 551.
(iii)To display highest marks scored from each city along with the city name.

OR

To display class and total number of student in each class.

1+1+2

35 Consider the following Data Frame **stddf:**

	Marks	Age	Percentage	Stream
Mahendra	99	16	67	Science
Sanju	96	17	64	Science
Sohan Lal	97	16	75	Science
Seema	99	16	82	Humanities

1+1+2

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	a. Predict the output of the following Python statement: (i) stddf.index (ii) print(stddf.size) b.Write Python statement to add a new column City (with values Jhansi,Gwalior,Jabalpur,Lalitpur) at the 2nd position. OR Write Python statement to compute and display the details of those students who are in Science stream or percentage is greater than 70.	

****

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KENDRIYA VIDYALAYA SANGATHAN
CLASS XII
INFORMATICS PRACTICES (065)
SET 8

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.

	PART A	
1.	A network having span of a city is called: i. LAN ii. WAN iii. MAN iv. Internet	1
2.	Which of the following is a type of cyber crime? i. Data theft ii. CyberStalking iii. Cyber bullying iv. All of these	1
3.	What is an example of e-waste? i. A ripened banana ii. Unused old clothes iii. Unused old computers iv. Empty cola cans	1
4.	Which type of values will not be considered by SQL while executing the following statement? **SELECT COUNT(column name) FROM deptt;** i. Numeric value ii. text value iii. Null value iv. Date value	1

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5.	If column **"salary"** contains the data set (5000,8000,7500,5000,8000), what will be the output after the execution of the given query? **SELECT SUM (DISTINCT Salary) FROM details;** i. 20500 ii. 10000 iii. 20000 iv. 33500	1
6.	The term FOSS stands for :	1
7.	Which SQL statement do we use to find out the total number of records present in the table EMP? i. SELECT * FROM EMP; ii. SELECT COUNT (*) FROM EMP; iii. SELECT FIND (*) FROM EMP; iv. SELECT SUM () FROM EMP;	1
8.	Which one of the following is an aggregate function? i. ROUND() ii. MOD() iii. COUNT() iv. DISTINCT()	1
9.	Which one of the following functions is used to find the minimum value from the given data in MySQL? i. MIN( ) ii. MINIMUM( ) iii. SMALL( ) iv. LOWER( )	1
10.	To display last five rows of a series object **'M'**, you may write: i. M.Head() ii. M.Tail(5) iii. M.Head(5) iv. M.tail()	1
11.	Which of the following statement will import pandas library? i. Import pandas as pd ii. import Pandas as py iii. import pandas as pd iv. import panda as pd	1

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12.	Which of the following can be used to specify the data while creating a DataFrame? i. Series ii. List of Dictionaries iii. Structured ndarray iv. All of these	1
13.	Which amongst the following is not an example of a browser? i. Chrome ii. Firefox iii. Avast iv. Edge	1
14.	In SQL, which function is used to display current date and time? i. Date () ii. Time () iii. Current () iv. Now ()	1
15.	Legal term to describe the rights of a creator of original creative or artistic work is: i. Copyright ii. Copyleft iii. GPL iv. FOSS	1
16.	_____is the tra[illegible] of da[illegible] w[illegible] lea[illegible] [illegible]nd w[illegible] [illegible] is[illegible] a[illegible] y website (or use any online application or portal) to fill-in data or perform any transaction. i. Offline phishing ii. Offline footprint iii. Digital footprint iv. Digital phishing	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): -** 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 to store certain information on the server's computer.	1
18.	**Assertion (A):-** DataFrame has both a row and column index. **Reasoning (R): -** A DataFrame is a two-dimensional labelled data structure like a table of MySQL.	1

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	PART B	
19.	Explain the terms Web page and Website. **OR** Mention any four networking ettiquettes.	2
20.	Sneha, a database administrator needs to display Region wise total number of records of **'NORTH'** and **'EAST'** . She is encountering an error while executing the following query: **SELECT REGION , COUNT (*) FROM STUDENT GROUP BY REGION WHERE REGION='NORTH' OR REGION= 'EAST';** Help her in identifying the reason of the error and write the correct query by suggesting the possible correction (s).	2
21.	What is the purpose of Order By clause in SQL? Explain with the help of suitable example.	2
22.	Write a program to create a series object using a dictionary that stores the number of students in each house of class 12B of your school. **Note: Assume four house names are Beas, Chenab, Ravi and Satluj having 18, 2, 20, 18 students respectively and pandas library has been imported as pd.**	2
23.	List any four benefits of e-waste management. **OR** Mention any four ways to manage e waste	2
24.	What will be the output of the following code: **>>>import pandas as pd** **>>>A=pd.Series(data=[35,45,55,40])** **>>>print(A>45)**	2
25.	Carefully observe the following code: **import pandas as pd** **Year1={'L1':5000,'L2':8000,'L3':12000,'L4': 18000}** **Year2={'X' :13000,'Y':14000,'Z':12000}** **totSales={1:Year1,2:Year2}** **df=pd.DataFrame(totSales)** **print(df)** **Answer the following:** i. List the index of the DataFrame df ii. List the column names of DataFrame df.	2

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	SECTION C	
26.	Write outputs for SQL queries (i) to (iii) which are based on the given table ORDER: **TABLE: ORDER** **CNO** | **CNAME** | **CITY** | **QUANTITY** | **DOP** C01 | GURPREET | NEW DELHI | 150 | 2022-06-11 C02 | MALIKA | HYDERABAD | 10 | 2022-02-19 C03 | NADAR | DALHOUSIE | 100 | 2021-12-04 C04 | SAHIB | CHANDIGARH | 50 | 2021-10-10 C05 | MEHAK | CHANDIGARH | 15 | 2021-10-20 **i. SELECT LENGTH(CNAME) FROM ORDER WHERE QUANTITY>100;** **ii. SELECT CNAME FROM ORDER WHERE MONTH(DOP)=3;** **iii. SELECT MOD (QUANTITY, DAY(DOP)) FROM ORDER WHERE CITY= 'CHANDIGARH';**	3
27.	Write a Python code to create a DataFrame with appropriate column headings from the list given below: **[[101,'AMIT',98],[102,'RAJVEER',95],[103,'SAMAR' ,96], [104,'YUVI',88]]**	3
28.	Consider the given Data Frame 'BOOK': **Name** **Price** **0 Nancy Drew 150** **1 Hardy boys 180** **2 Diary of a wimpy kid 225** **3 Harry Potter 500** Write suitable Python statements for the following: i. Add a column called Special_Price with the following data: [135,150,200,440]. ii. Add a new book named 'The Secret' having price 800. iii. Remove the column Special_Price.	3
29.	Anita has recently shifted to a new city and school. She does not know many people in her new city and school. But all of a sudden, someone is posting negative, demeaning comments on her social networking profile etc. She is also getting repeated mails from unknown people. Every time she goes online, she finds someone chasing her online. i. What is this happening to Anita? ii. What immediate action should she take to handle it? iii. Is there any law in India to handle such issues? Discuss briefly.	3

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OR

What do you understand by plagiarism? Why is it a punishable offence? Mention any two ways to avoid plagiarism.

30. Based on table **STUDENT** given here, write suitable SQL queries for the following: 3

Roll No	Name	Class	Gender	City	Marks
1	Abhishek	XI	M	Agra	430
2	Prateek	XII	M	Mumbai	440
3	Sneha	XI	F	Agra	470
4	Nancy	XII	F	Mumbai	492
5	Himnashu	XII	M	Delhi	360
6	Anchal	XI	F	Dubai	256
7	Mehar	X	F	Moscow	324
8	Nishant	X	M	Moscow	429

i. Display gender wise highest marks.
ii. Display city wise lowest marks.
iii. Display total number of male and female students.

OR

Discuss the significance of Group by clause in detail with the help of suitable example.

SECTION D

31. Write suitable SQL query for the following: 5

i. Display 7 characters extracted from 7th left character onwards from the string 'SHINING WORLD'.
ii. Display the position of occurrence of string 'COME' in the string 'WELCOME TO NEW ERA'
iii. Round off the value 53.78 to one decimal place.
iv. Display the remainder of 100 divided by 9.
v. Remove all the expected leading and trailing spaces from a column EMPID of the table **'EMP'**.

OR

Explain the following SQL functions using suitable examples.

i. LCASE()
ii. RTRIM()
iii. MID()
iv. YEAR()
v. POWER()

32. Alpha 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. 5

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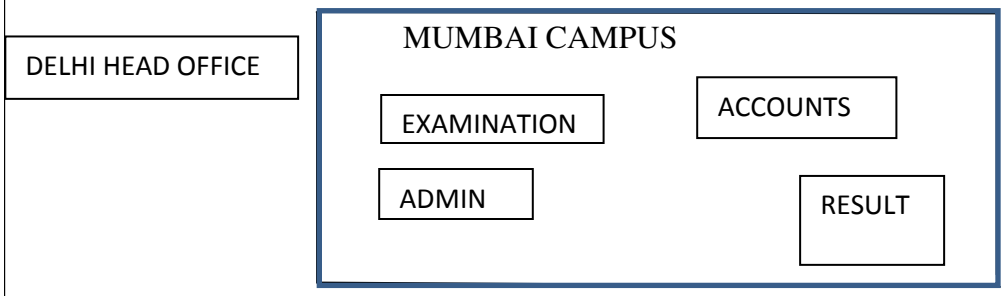
You as a network expert have to suggest the best network related solutions for their problems raised in (i) to (v), keeping in mind the distances between the buildings and other given parameters.



Shortest distances between various buildings:

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

Number of computers installed at various buildings are as follows:

ADMIN	110
ACCOUNTS	75
EXAMINATION	30
RESULT	12
DELHI HEAD OFFICE	20

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(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 buildings within 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

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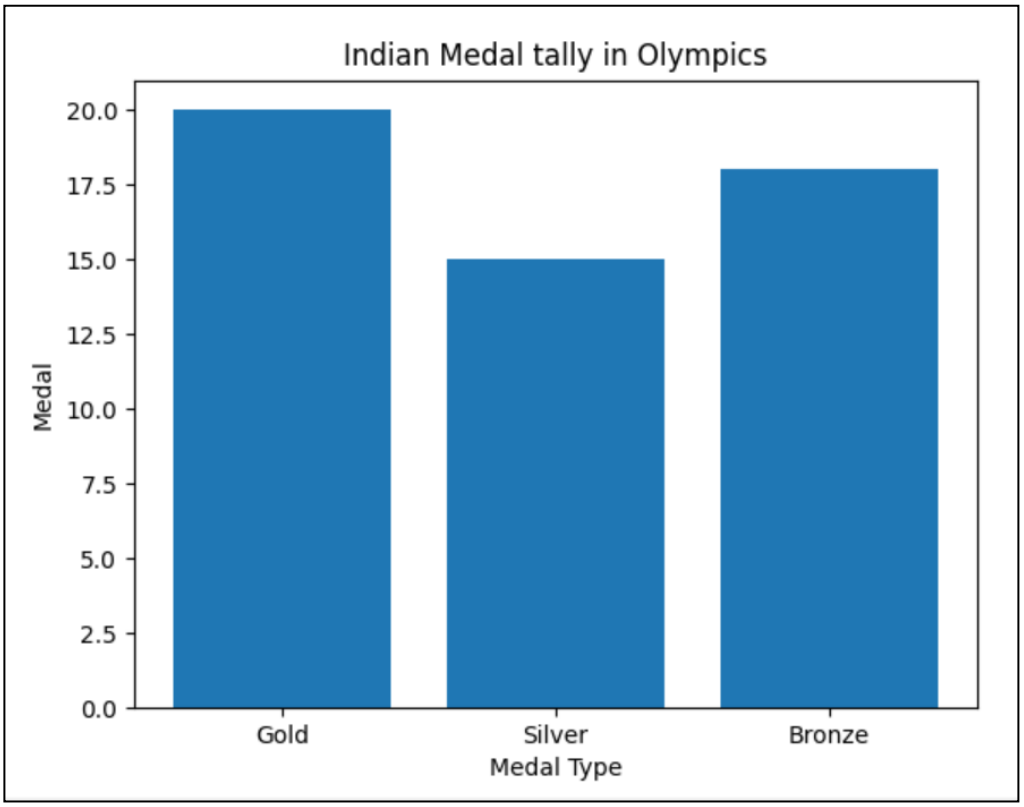
33.	Write Python code to plot a bar chart for India's medal tally as shown below:  Also give suitable python statement to save this chart. **OR** Write a python program to plot a line chart based on the given data to depict the changing weekly average temperature in Delhi for four weeks. Week=[1,2,3,4] Avg_week_temp=[40,42,38,44]	5

SECTION E

34.	Shravya, a database administrator has designed a database for a clothing shop. Help her by writing answers of the following questions based on the given table: **TABLE: CLOTH** | CCODE	CNAME	SIZE	COLOR	PRICE	DOP
---	---	---	---	---	---
C001	JEANS	XL	BLUE	990	2022-01-21
C002	T SHIRT	M	RED	599	2021-12-12
C003	TROUSER	M	GREY	399	2021-11-10
C004	SAREE	FREE	GREEN	1299	2019-11-12
C005	KURTI	L	WHITE	399	2021-12-07 | i. Write a query to display cloth names in lower case. ii. Write a query to display the lowest price of the cloths. iii. Write a query to count total number of cloths purchased of medium size.	1+1+2

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OR (Option for part iii only)

Write a query to count year wise total number of cloths purchased.

35. Mr. Lalit, a data analyst has designed the DataFrame **df** that contains data about Computer Olympiad with 'CO1', 'CO2', 'CO3', 'CO4', 'CO5' as indexes shown below. Answer the following questions: 1+1+2

	School	Tot_students	Topper	First_Runnerup
CO1	PPS	40	32	8
CO2	JPS	30	18	12
CO3	GPS	20	18	2
CO4	MPS	18	10	8
CO5	BPS	28	20	8

A. Predict the output of the following python statement:
   i. df.shape
   ii. df[2:4]

B. Write Python statement to display the data of Topper column of indexes CO2 to CO4.

OR (Option for part iii only)

Write Python statement to compute and display the difference of data Tot_students column and First_Runner up column of the above given DataFrame

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KENDRIYA VIDYALAYA SANGATHAN,JAMMU REGION
INFORMATICS PRACTICES (065)
SAMPLE PAPER–SET-09
PAPER 2022-23
CLASS-XII

Time:-3 Hours Max. Mark:70

General Instructions:

1. This question paper contains five sections, Section A toE.
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 1:

The following code create a dataframe named 'D1' with _____ columns.

```
import pandas as pd
D1 = pd.DataFrame([1,2,3] )
```

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a) 1
b) 2
c) 3
d) 4

Q2: Ravi, a student of class XII, wants to check whether a dataframe **MyDF** has any missing values. What python statement he should write to do so?

Q3: The _____ attribute of dataframe is used to get the number of axis in Dataframe.

Q 4 Pyplot's _____ function is used to create line charts.

Q5: The command used to give a heading to a graph is _____

a. plt.show()

b. plt.plot()

c. plt.xlabel()

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d. plt.title()

OR

_____ describe the number of data points that fall within a specified range of values.

Q6: Mohit is trying to create a histogram of "STEP" type with 10 bins. Help him to identify the correct statement from the following statements:-

i. Plt.hist(x,bins=10, histype="barstacked")
ii. Plt.hist(x,bins=11)
iii. Plt.hist(x, bins=10, histype="step")
iv. Plt.hist(x, bins=10, histytpe="Dashed")

Q7 : Write the name of the python package used for 2D graphics.
Q 8: Write the full form of the followings:-

(a) DDL
(b) DML

Q9 : Mr. Sharma is trying to write a query, but missing a keyword in the query given below. Which of the following keywords / operator will you suggest him to complete the following query :-

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SELECT _____ dept_name FROM Office.

(a) ALL (b) From (c) DISTINCT (d) *

OR

Which data type would you like to prefer for a column which have alpha-numeric values and have a fixed length.

Q 10 .What will be the output of the following query :-

SELECT TRUNCATE(153.664,2) ;

Q11. What are the constraints ?
Q12 . Write any two examples of DDL statement.
Q13. Write an SQL statement to extract 4 characters from the 4th left character from the string "SANGATHAN".
Q 14 . Which of these is not a communication channel ?

(a) Satellite (b) Microwave (c) Radio wave (d) Wi-Fi

Q15: Expand the following terms :-

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(i) Wi-Fi

(II) NIU

Q 16 : KVS has four schools spread across the JAMMU City. All the computers of computer labs of all the 04 KVs have been connected through a Computer Network. Which type of network is this ?

OR

Which device is used to regenerate a digital signal?

Q17: Expand the following terms :-

OSS, W3C

Q18: Define the term IPR ?

OR

What is the use of HTTPS ?

SECTION - B

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Q 19: Given a series that stores the number of students in each class of a KV. Write python statement to find out the maximum and minimum number of students in any of the class. The given series has been created with the help of following statement:-

Strength = pd.Series([47,39,52, 40, 42, 37, 50, 45, 47, 50, 43, 42])

Q 20: Write the output of the following Code :-

```
Import pandas as pd
temperature=pd.Series({'Jammu':44, 'Srinagar':37, 'Delhi':46, 'Agra':48, Bangalore:'32})
print(temperature[temperature<40])
```

Q 21: What are the differences between a Series and a DataFrame?

Q22: What is the use of matplotlib and pyplot ?

Q 23: Define the following terms :-

(a) Open Source Software (b) Freeware

OR

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

Q 24: Mr. Honey wants to plot a bar chart for the given set of values of Class on X axis and number of students in the class on Y axis. Write the appropriate python statement in order to complete the code to perform the following operations:-

i. To plot the bar graph in statement 1.
ii. To display the graph in statement 2.

```
import  matplotlib.pyplot as plt

Clas=['IX', 'X', 'XI', 'XII']

Std=[38, 42, 47, 40]

_____ Statement 1

_____ Statement 2
```

OR

Mr. Sahni wants to draw a histogram using a list of element. He is trying to convert the list into an array and writing a piece of code but getting confused about the name of some functions and statements. Help him to complete the code to perform the following operations for the missing statements, given below.

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i. To set the title as "Histogram"
ii. To provide the Y-axis label as "Students"

```
Import matplotlib.pyplot as plt

import numpy as np

fig.ax = plt. subplots (1, 1)

a=np.array ( [ 26, 59, 44, 39, 80, 66, 24, 31, 22, 30, 85 ])

ax.hist ( a. bins = [0, 10, 20, 30, 40,50 ] )

_____ Statement 1

ax.set_xticks ( [ 0, 10, 20, 30, 40, 50 ])

ax.set_xlabel("Percentage")

_____ Statement 2

plt.show( )
```

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Q 25: Define the following terms :-

(a) PRIMARY KEY (b) FOREIGN KEY

OR

Observe the following tables PRODUCTS and CUSTOMERS and answer the following questions :-

PRODUCTS

PID	PNAME	PRICE	CID
P001	SOAP	45.00	C01
P002	PERFUME	285.00	C03
P003	SHAMPOO	139.00	C05

CUSTOMERS

CID	CNAME
C01	ABHINAV
C05	MANYA
C02	AMAN
C03	RIYA

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i. What is degree of the table PRODUCTS ? What is the Cardinality of the table CUSTOMERS ?

ii. What will be the Degree and Cardinality of the CARTESIAN PRODUCT of these two relations?

SECTION C

Q 26 : Consider the variable var having value 5649.7438

Write the SQL statement to:

a. round it off to 02 decimal places.

b. Round it to 02 places before the decimal.

c. Limit the value upto two decimal places without rounding off it.

OR

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What will be the output of the following SQL Statements:

a. Select instr("This is my wrist watch","is");
b. Select right("Informatics Practices",5);

Select concatenate(left("Informatics",5), right("It is a wrist watch",6));

Q27 : What is the difference between the ORDER BY and GROUP BY clause? Explain with suitable examples.

Q 28: Consider the table SALESMAN with the following data :

SALESMAN

SID	SNAME	SALARY	DOJ
A012	KAVYA SHARMA	30000	29-10-2019
F035	MANAV GUPTA	42000	18-03-2017
S020	GOVIND RAM	32500	29-03-2020
A054	VINOD RA IA	5 00	16-04-2016

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

i) Display the Salesman name and month name of the Date of Joining.
ii) Display the name of the weekday for the date of joining of Salesman.
iii) Display the position of occurrence of letter 'O' in Salesman name.

Q 29 .Given a list that stores the registered BPL persons in some states :

BPL=[1247, 5498, 2387, 4139, 2496, 8921, 3749, 4458]

Write python code to perform the following operations :

i. Create a Series object namely MySeries using the above list BPL.
ii. Print the largest number of registered BPL holders.
iii. Print the states having more than 4000 registered BPL holders.

OR

Write the output of the following code :

import numpy as np

array1=np.array([25,32,140,60,85,113,65])

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```
print(array1[1:4:2])

print(array1[-1:-4:-1])

print(array1[:5:2])
```

Q 30 : Given a dataframe SALES stroing sale of fruits in Kilograms as shown below:

	Apple	Grapes	Banana	Guava
Jammu	240	25	123	94
Reasi	76	68	98	57
Udhampur	164	114	95	125
Srinagar	375	180	95	115

Assuming that the dataframe SALES is available, write code to do the following :-

i. Total Sale for each city.
ii. Print details of the city with maximum sale of Guava.
iii. Total sale for each Fruit type.

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OR

Consider the dataframeMyDF given as under :

	Emp_id	Name	Designation	City	Salary
0	E001	Ritvi	Clerk	Gurugram	32000
1	E025	Riya	Programmer	Delhi	65000
2	E034	Gaurav	Data Analyst	Bangalore	95000
3	E016	Kanishka	Manager	Mumbai	87000

Write a program in python to create the above dataframe using dictionary and print only the Name, Designation and Salary for all rows.

SECTION D

Q 31 : Consider the following table “STUDENT”. Write SQL commands for the following statements :-

STUDENT

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Adm_No	Class	Name	VOC_SUBJ	DOB
21035	11	Abhinandan	Marketing	21-10-2007
32149	12	Urvi	Info. Tech.	25-04-2006
30587	10	Shalini	Info. Tech.	21-09-2008
31543	11	Sneha	Salesmanship	19-11-2007
12345	12	Ritu	Banking	08-08-2006

i) Display the details of the students is the ascending order the class in which they are studied.
ii) Display the different Vocational Subjects offered by the School.
iii) To display the class and no. of students in each class.
iv) Display the details of students whose date of birth is > 15-05-2007.

OR

Based on the above mentioned table write the output of the following SQL statements :-

i) SELECT * From STUDENT where Name LIKE "% i %";
ii) SELECT NAME, monthname(DOB) from STUDENT;
iii) SELECT VOC_SUB, count(VOC_SUBJ) from STUDENT Group By VOC_SUBJ;
iv) SELECT Name, Adm_No, DOB from STUDENT Order By Adm_No;

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Q 32 : Krishna University is setting up the academic blocks at Jalandhar and is planning to connect them through a network. The University has 4 blocks named BIZZ BLOCK, TECHY BLOCK, ADMIN BLOCK and HR BLOCK. The distance between these blocks and no. of computers in each block are as follows :-

DISTANCE	
ADMIN to BIZZ Block	50 m
ADMIN to TECHY Block	85 m
ADMIN to HR Block	110
BIZZ to TECHY Block	45 m
BIZZ to HR Block	40 m
TECHY to HR Block	25 m

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No. of Computers	
ADMIN	25
TECHY Block	60
HR Block	110
BIZZ Block	30

i) Suggest the most suitable place to install the server and justify the answer.
ii) Suggest the placement of the Repeater in the network with justification

OR

a) Suggest the device to be placed in each of these blocks to efficiently connect all the computers with justification
The university is planning to connect the ADM Block to KOLKATA, which is more than 1500 Kms from University. Suggest an economic way to connect it with reasonably high speed with justification

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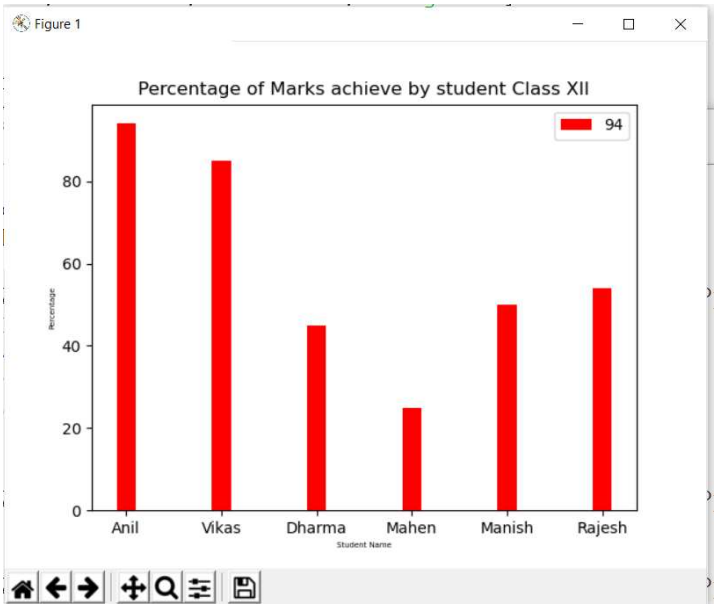
Q 33 : Consider the following graph . Write the code in python to draw bar graph to show percentage of following students.



OR

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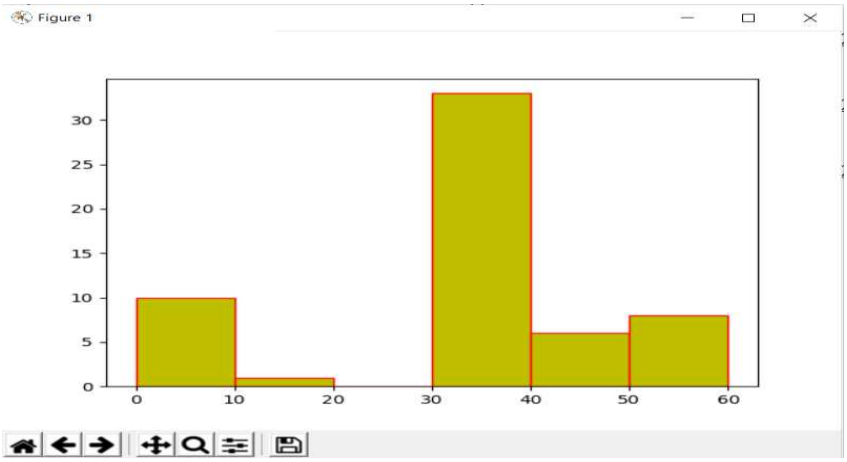

Write code in python to show the data using histogram.

SECTION E

Q 34: Write the SQL functions which will perform the following operations:

i To display the day of the month of the current date .

ii To display the length of string "Hello".

iii To display the name of the day (Friday or Sunday) from your date of birth, dob.

iv To display the string in upper case 'I love india'

.

Q 35: Consider the following Data Frame**df** and answer **any four out of five from** (i) to (v)

	Name	Rollno	English	Hindi	Maths	Ssc	Science
0	Anita	1	55	45	87	67	70
1	Sunita	2	67	65	90	87	56
2	Radha	3	78	76	98	90	78
3	Anis	4	98	87	78	45	87
4	Kaushal	5	45	58	90	69	98

i) Write statement to display name and rollno only.

ii) The teacher needs to know the marks scored by the student with roll number 4. Help her to identify the correct set of statement/s from the given options :

a. df1=df[df['rollno']==4]
print(df1)

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b. df1=df[rollno==4]
print(df1)

c. df1=df[df.rollno=4]
print(df1)

d) df1=df[df.rollno==4]
print(df1)

iii) Which of the following statement/s will delete column 'Total' from the dataframe?

i.df.pop('Total')
ii. del df['Total']
iii.del (df.Total)
iv. df.del('Total')

Choose the correct option:
a. both (i) and (ii)
b. only (ii)
c. (i), (ii) and (iii)
d. (i), (ii) and (iv)

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iv) Write command to add total column to dataframe named total which stores the total of all the subjects mentioned in the df.

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SAMPLE QUESTION PAPER 10
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.

	PART A	
1.	Data Communication systems spanning states, countries or the whole world is _____ . a. PAN b. LAN c. MAN d. WAN	1
2.	Which of these is not a cyber crime: a. Cyber stalking b. Cyber trolling c. Copyright d. Cyber bullying	1
3.	Which amongst the following is not an example of browser ? a. Chrome b. Firefox c. Avast d. Edge	1
4.	Write the output of the following SQL command. SELECT round(435.6789,1); a. 435.7 b. 435.678 c. 435 d. 435.68	1

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5.	The rtrim() function in MySql is an example of . a. Math function b. Text function c. Date Function d. Aggregate Function	1
6.	Which of the following software can be associated with a trial period? a. Shareware b. Freeware c. Open Source d. None of the above	1

7.	Write the SQL command that will display the current date and time
	a. SELECT DATE( );
	b. SELECT CURRENT( );
	c. SELECT DATETIME( );
	d. SELECT NOW( );
		1

8.	The_____clause of SELECT query allows us to select only those rows in the result that satisfy a specified condition. a. FROM b. WHERE c. ORDER BY d. GROUP BY	1
9.	What will be the order of sorting in the given query? SELECT customer_id, customer_name FROM customers ORDER BY customer_id, customer_name a. Firstly on customer_id and then on customer_name b. Firstly on customer_name and then on customer_id c. Firstly on customer_id but not on customer_name d. None of the mentioned	1
10.	Given a Pandas series called Orders, the command which will display the first 3 rows is _____. a. print(Orders.HEAD(3)) b. print(Orders.Head(3)) c. print(Orders.heads(3) d. print(Orders.head(3))	1
11.	Which of the following is not a valid plotting function of pyplot? a. bar( ) b. hist( ) c. histh( ) d. barh( )	1

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12.	_____ method in Pandas can be used to change the index of rows and columns of a Series or Dataframe : a. rename() b. reindex() c. reframe() d. none of the above	1
13.	Mr. Sham received an email warning him of closure of his bank accounts if he did not update his banking information immediately. He clicked the link in the email and entered his banking information. Next day, he got to know that he was cheated. This is an example of _____. a. Online Fraud b. Identity Theft c. Plagiarism d. Phishing	1
14.	Which of the following clause can be used with Group By? a. Having b. Where c. Order by d. None	1
15.	Stealing someone's intellectual work and representing it as your own is known as _____. a. Hacking b. Plagiarism c. Copyright d. Patent	1
16.	Which of the following appears harmless but actually performs malicious functions such as deleting or damaging files. a. WORM b. Virus c. Trojan Horse d. Malware	1
Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as a. Both A and R are true and R is the correct explanation for A b. Both A and R are true and R is not the correct explanation for A c. A is True but R is False d. A is false but R is True		
17.	**Assertion (A) :** Digital footprint is the trail of data we leave behind when we visit any website (or use any online application or portal) to fill-in data or perform any transaction. **Reason (R) :** While online, all of us need to be aware of how to conduct ourselves, how best to relate with others and what ethics, morals and values to maintain	1
18.	**Assertion (A)** : Professionals and developers are using the pandas library in data science and machine learning. **Reason (R) :** pandas is an open source Python library which offers high performance, easy-to-use data structures and data analysis tools.	1

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	PART B	
19.	What is a website? How is it different from a webpage? **OR** Differentiate between star and bus topology.	2
20.	Ravi, a database administrator needs to display house wise total number of activities of **'Ashoka'** and **'Tagore'** house. He is encountering an error while executing the following query: **SELECT HOUSE, COUNT (ACTIVITIES) FROM STUDENT ORDER BY DESC NAME;** Help him in identifying the reason of the error and write the correct query by suggesting the possible correction (s).	2
21.	What is the purpose of Group By clause in SQL? Explain with the help of suitable example.	2
22.	Write a program to create a series from dictionary that stores classes (6,7,8,9,10) as keys and number of students as values.	2
23.	Mention any four steps to recycling and recovery under e-waste management. **OR** Write any four steps towards awareness about health concerns related to the usage of technology.	2
24.	What will be the output of the following code: **import pandas ad pd** **import numpy as num** **arr=num.array([31,47,121])** **S1=pd.Series(arr, index=(1,11,111))** **print(S1[111])**	2
25.	Write code statements for a dataframe df for the following – (a) Delete an existing column from it. (b) Delete rows from 3 to 6 from it	2

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SECTION C

26. Write outputs for SQL queries (i) to (iii) which are based on the given table SCHOOL: **3**

TABLE: SCHOOL

ADN	CLASS	STREAM	PERCENT	DOA
A001	12	SCIENCE	90.32	2022-06-11
A002	11	COMMERCE	89.6	2022-02-19
A003	11	ARTS	78.12	2021-12-04
A004	12	SCIENCE	81.83	2021-10-10
A005	12	ARTS	95.13	2021-10-20

i. SELECT ROUND(PERCENT,1) FROM SCHOOL WHERE CLASS=11;
ii. SELECT MAX(CLASS) FROM SCHOOL WHERE PERCENT<90;
iii. SELECT LENGTH(SUBSTR(STREAM,3,4)) FROM SCHOOL WHERE STREAM= 'SCIENCE';

27. Write a Python code to create a DataFrame Result with appropriate column headings from the list given below: **3**

	Arnab	Ramit	Samridhi	Riya
Hindi	90	92	89	81
IP	91	81	91	71
Maths	97	96	88	67

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28. Consider the given DataFrame **'Forest':** **3**

	State	GArea	VDF
0	Assam	6789	423.70
1	Delhi	123	8.37
2	Kerala	33825	1225.00

Write suitable Python statements for the following:
i. Add a column called **TArea** with the following data: [5432,7896,4400].
ii. Delete the columns having labels 'VDF'
iii. Rename the index as state1,state2 and State3.

29. Write any three important points should be kept in mind to reduce the risk of cybercrime. **3**

OR

What do you mean by the Indian IT Act? Write any three points.

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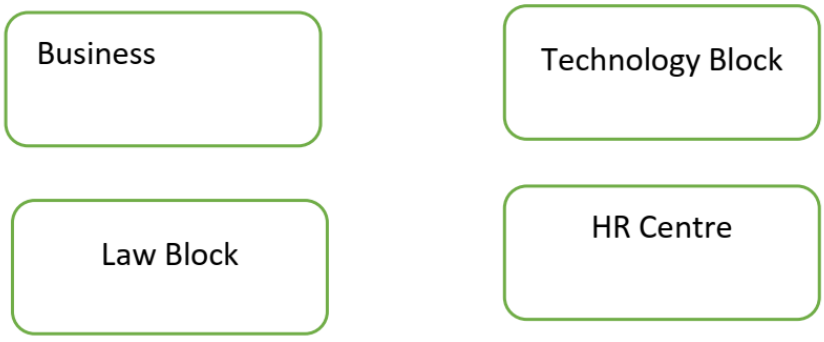
30	Based on table **EMPLOYEE** given here, write suitable SQL queries for the following: **Emp No** **Name** **Design** **Gen** **City** **Salary** 1. Anushka Manager M Raipur 89430 2. Vandana HR M Durg 76440 3. Vibha Sales F Agra 65470 4. Dhrishti HR F BBSR 75492 5. Bhoomi Manager M Delhi 87360 6. Aditi Sales F NULL 68256 7. Monika Engineer F Mysore 83324 8. Priyanshi Engineer M Mysore 84429 Display total of salary gender wise. Display number of city excluding NULL value ,gender wise. Display maximum salary of the employee Design wise. **OR** Discuss the significance of ORDER by clause in detail with the help of suitable example.	3
31	Write suitable SQL query for the following: i. Display 'VIDYA' from string 'KENDRIYA VIDYALAYA'. ii. Display the position of occurrence of string 'VANSH' in the string 'SURYAVANSH'. iii. Find reminder of 17 divided by 3 iv. Display the month name from '20-April-2022'. v. Remove all the expected trailing spaces from a column name of the table 'STUDENT'. OR Explain the following SQL functions using suitable examples. i. ROUND() ii. LCASE() iii. NOW() iv. COUNT() v. LEFT()	5
32	Jammu University is setting up its academic blocks at samba and planning to set up a network. The university has 3 academic blocks and one human resource Centre as shown in the diagram given below: 	(5)

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Law block to business block	40 m
Law block to technology block	80 m
Law block to HR block	105 m
Business block to technology block	30 m
Business block to HR block	35 m
Technology block to HR block	15 m

Number of computers in each of the buildings is as follows:

Law block	15
Technology block	40
HR Centre	115
Business block	25

(a) Suggest a cable layout of connection between the blocks.

(b) Suggest the most suitable place to house the server of the organization with suitable reason.

(c) Which device should be placed/installed in each of these blocks to efficiently connect all the computers within these blocks? (i)Switch/Hub (ii) Repeater

(d) The university is planning to link its sales counters situated in various parts of the other cities. Which type of network out of LAN, MAN or WAN will be formed?

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(e) Which network topology may be preferred in each of these blocks?

33 Write a python program to plot a line chart based on the given data to depict the runs scored by India. 5
Over=[10,20,30,40,50]
Runs=[0,25,50,75,100]

OR

ABC Enterprises is selling its products through three salesmen and keeping the records of sales done
quarterly of each salesman as shown below:

	Quarter 1	**Quarter 2**	**Quarter 3**	**Quarter 4**
Salesman 1	23000	18000	30000	35000
Salesman 2	11000	15000	20000	22000
Salesman 3	60000	40000	35000	55000

Company is storing the above information in a CSV file “Qtrly_Sales.csv”. Mr. Rahul is a programmer. Company has given him the responsibility to create the program to visualize the above data. He wrote Python code but he is facing some difficulties. Help him by giving the solutions of following situation:

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```
1  import pandas as pd
2  import _____ as plt
3  df=_____("Qtrly_Sales.csv")
4  df.plot(_____='bar', color=['red','blue','brown','green'])
5  plt._____('Quarterly Report')
6  plt.xlabel('Salesman')
7  plt.ylabel('Sales')
8  plt._____()
```

i. Choose the correct Python library out of following options in line 2

a. matplotlib b. matplotlib.plot
c. py.plot d. matplotlib.pyplot

ii. Choose the correct option to read the csv file in line 3

a. read_csv b. pd.read_csv
c. pd.get_csv d. get_csv

iii. Choose the correct option to select the type of graph in line 4

a. type b. kind
c. style d. graph

iv. Choose the correct word to give the heading in line 5

a. label b. heading
c. title d. caption

v. Choose the correct word to display the graph in line 8

a. plot() b. display()
c. showgraph() d. show()

34 Consider the following table Teacher. Write SQL commands for the following Statements. Table : emp — 4

No.	Name	Age	Department	Dateofjoin	Salary	Sex
1.	Jugal	34	Computer	10/01/97	12000	M
2.	Sharmila	31	History	24/03/98	20000	F
3.	Sandeep	32	Maths	12/12/96	30000	M
4.	Sangeeta	35	History	01/07/99	40000	F
5.	Rakesh	42	Maths	05/09/97	25000	M
6.	Shyam	50	History	27/06/98	30000	M

Write a query to count number of department.
Write a query to display maximum age.
Write a query to display average salary in which Date of join is before 12/07/96.

OR (Option for part iii only)

Write a query to display sum of all teachers' salary in which Date of join is before 12/07/96.

35 Mr. Ankit is working in an organisation as data analyst. He uses Python Pandas . He got a dataset of the passengers for the year 2010 to 2012 for January, March and December. His manager wants certain information from him, but he is facing some problems. Help him by answering few questions given below: — 4

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	import pandas as _____ #Statement 1
	data={"Year":[2010,2010,2012,2010,2012],"Month":["Jan","Mar","Jan","Dec","Dec"] ,"Passengers":[25,50,35,55,65]}
	df=pd._____(data) #Statement 2
	print(df)
	
	i. Help him to fill the blank of statement1.
	ii. Help him to fill the blank of statement2.
	iii. He wants to print the number of passengers in “jan”.
	OR
	Mr. Ankit wants to change the index of the Data Frame with [‘Air India’, ‘Indigo’, ‘Spicejet’, ‘Jet’, ‘Emirates’]. Write the correct statement to change the index.	

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SAMPLE QUESTION PAPER 11
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.

	PART A	
1	The main computer in any network is called as a. Client b. Server c. Hub d. Switch	1
2	Sending the email to any cc means a. Sending the mail with a carbon copy b. Sending the mail without a carbon copy c. Sending the email to all and hiding the address d. All of the above	1
3	Which of the following reduce e-waste? a. purchasing more and more gadgets b. using them for a short time and then discarded c. good maintenance d. all of these	1
4	Which of the following is not a violation of IPR? a. Plagiarism b. Copyright Infringement c. Patent d. Trademark Infringement	1
5	If column “Marks” contains the data set {25, 35, 25, 35, 38}, what will be the output after the execution of the given query? SELECT DISTINCT MARKS FROM STUDENTS; a) 25, 35, 25, 35, 38 b) 25, 25, 35, 35 c) 25, 35, 38 d) 25, 25, 35, 35	1
6	The term FLOSS is associated with	1

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	a) Non-open source software b) proprietary software c) Open Source software d) None of these	
7	Which of the following sublanguages of SQL is used to query information from the data base and to insert tuples into, delete tuples from, and modify tuples in the database? a) DML (Data Manipulation Language) b) DDL (Data Definition Language) c) Query d) Relational Schema	1
8	In SQL, which command is used to SELECT only one copy of each set of duplicable rows a) SELECT DISTINCT b) SELECT UNIQUE c) SELECT DIFFERENT d) All of the above	1
9	An attribute in a relation is foreign key if it is the _____key in any other relation. a) Candidate b) Primary c) Super d) Sub	1
10	Pandas mainly used for a) Data Recovery b) Data Backup c) Data Visualizations d) Data Analysis	1
11	_____is the practice of taking someone else's work or ideas and passing them off as one's own: a. Plagiarism b. Copyright c. Patent d. All of the above	1
12	You can create a Python pandas series using? a) sequence b) ndarray c) tuple d) all of the above	1
13	An application that can be accessed via a web browser, over a network connection is called a _____. a. Web-based application b. Server-based application c. Both a) and b) d. None of the above	1
14	Which of the following queries contains an error? a) Select * from emp where empid = 10003; b) Select empid from emp where empid=10006; c) Select empid from emp; d) Select empid where empid=1009 and lastname='GUPTA';	1
15	With SQL, how can you return the number of not null record in the Project field of "Students" table?	1

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	a) SELECT COUNT (Project) FROM Students b) SELECT COLUMNS (Project) FROM Students c) SELECT COLUMNS (*) FROM Students d) SELECT COUNT (*) FROM Students	
16	The legal and regulatory aspects of the internet refer to..... a. Cyber Space b. Cyber crime c. Criminal law d. IT act	1
Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as a. Both A and R are true and R is the correct explanation for A b. Both A and R are true and R is not the correct explanation for A c. A is True but R is False d. A is false but R is True		
17	Assertion (A) The fraudulent practice of sending emails purporting to be from reputable companies in order to induce individuals to reveal personal information, such as passwords and credit card numbers. Reason (R): While online, all of us need to be aware of how to conduct ourselves, how best to relate with others and what ethics, morals and values to maintain.	1
18	Assertion (A): pandas is an open source Python library which offers high performance, easy-to-use data structures and data analysis tools. Reason (R): Professionals and developers are using the pandas library in data science and machine learning.	1
	PART [illegible]	
19	What is the difference between STAR and BUS topologies? OR Why we use a domain name address in place of IP address of the Server to access any web site?	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 4 for the first command but get an output 3 for the second command. Explain the output with justification.	2
21	Write difference between DELETE and DROP command. Explain with suitable examples of each.	2
22	Write a python code to create a dataframe with appropriate headings from the list given below: ['S101', 'Amy', 70], ['S102', 'Bandhi', 69], ['S104', 'Cathy', 75], ['S105','Gundaho', 82]	2
23	What do you understand by e-waste management? Explain. OR Explain Digital Rights Management. How can we protect our content?	2
24	Predict the output of the following code fragments. x=np.array([1,2,3]) y=np.array([3,2,1]) z=x+y print(z)	2
25	Write python code to do the following based on the given dataframe DF:	2

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	Rollno Name Age Marks 11 Aruna 18 68 12 Mohini 14 47 13 Kiya 13 78 14 Lakshmi 16 87 15 Ravisha 14 60 a) display students having marks more than 50 b) display name and marks column only	
	PART C	
26	A Gift Gallery has different stores in India. Database Administrator Abhay wants to maintain database of their Salesmen in SQL to store the data, He has decided that Name of the database: GiftGallery Name of the table: Salesman Attributes of the tables: Scode – Numeric, Sname – Character 25, Address - Character 25, Dojoin - Date, Sales – Numeric and Area – Character 10 Consider the following records in 'Salesman' table and answer the given questions: **Table : Salesman** (see table below) i. State the command that will give the output as: (see table below) ii. Which of the following commands will display the details of all sales record of North Area, regardless of case (whether North / NORTH / north): iii. Help Priya to display sname and sales of east and west areas	3
27	Write a Pandas program to create and display a DataFrame from a specified dictionary data which has the index labels. Sample DataFrame: exam_data = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'], 'score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19], 'attempts': [1, 3, 2, 3, 2, 3, 1, 1, 2, 1], 'qualify': ['yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes']} labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']	3
28	Write the code in pandas to create the following dataframes: (see df1 and df2 below) Write the commands to do the following operations on the dataframes	3

Scode	Sname	Address	Dojoin	Sales	Area
100	Amit	Delhi	2017/09/29	5000.90	East
101	Sushant	Gurgaon	2018/01/01	7000.75	East
102	Priya	Noida	2018/04/25	3450.45	West
103	Mohit	Delhi	2018/11/03	6000.50	North
104	Priyanshi	Delhi	2019/12/15	8000.62	North

Sname
Shushant
Priya

df1

	mark1	mark2
0	10	15
1	40	45
2	15	30
3	40	70

df2

	mark1	mark2
0	30	20
1	20	25
2	20	30
3	50	30

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	(i) To add dataframes df1 and df2. (ii) To rename column mark1 as marks1in both the dataframes df1 and df2.	
29	Rishi has to prepare a project on "Swachh Bharat Shreshth Bharat". He decides to get information from the Internet. He downloads three web pages (webpage1, webpage 2, webpage 3) containing information on the given topic. 1. He read a paragraph on from webpage 1 and rephrased it in his own words. He finally pasted the rephrased paragraph in his project. 2. He downloaded three images of from webpage 2. He made a collage for his project using these images. 3. He also downloaded an icon from web page 3 and pasted it on the front page of his project report. i. Step1 An Example of _____ a. Plagiarism b. Paraphrasing c. copyright infringement d. Intellectual Property right ii. Step 2 An act of _____ a. plagiarism b. copyright infringement c. Intellectual Property right d. Digital Footprints iii. Step 3 An act of _____ a. Plagiarism b. Paraphrasing c. copyright infringement d. Intellectual Property right OR Explain the role of online social media in our society. Negative & positive both.	3
30	Based on table CLUB given here, write suitable SQL queries for the following: COACH_ID | COACHNAME | AGE | SPORTS | DATOFAPP | PAY | SEX 1 | KUKREJA | 35 | KARATE | 27/03/1996 | 10000 | M 2 | RAVINA | 34 | KARATE | 20/01/1997 | 12000 | F 3 | KARAN | 34 | SQUASH | 19/02/1998 | 20000 | M 4 | TARUN | 33 | BASKETBALL | 01/01/1998 | 15000 | M 5 | ZUBIN | 36 | SWIMMING | 12/01/1998 | 7500 | M 6 | KETAKI | 36 | SWIMMING | 24/02/1998 | 8000 | F 7 | ANKITA | 39 | SQUASH | 20/02/1998 | 22000 | F 8 | ZAREEN | 37 | KARATE | 22/02/1998 | 11000 | F 9 | KUSH | 41 | SWIMMING | 13/01/1998 | 9000 | M 10 | SHAILYA | 37 | BASKETBALL | 19/02/1998 | 17000 | M a. To show all information about the swimming coaches in the club. b. To list names of all coaches with their date of appointment (DATOFAPP) in descending order. c. To display a report, showing coachname, pay, age and bonus (15% of pay) for all the coaches. OR	3

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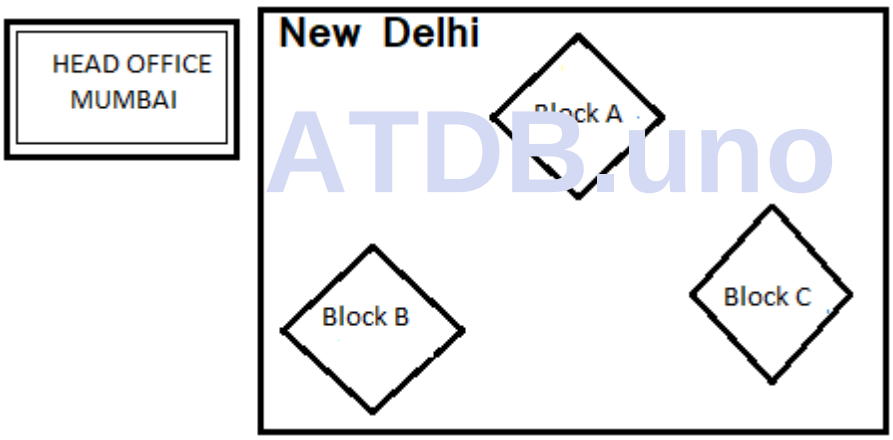
	(i) Candidate Key (ii) Primary Key (iii) Foreign Key	
	PART D	
31	Write suitable SQL query for the following: i. Display 7 characters extracted from 7th left character onwards from the string 'INDIA SHINING'. ii. Display the position of occurrence of string 'COME' in the string 'WELCOME WORLD'. iii. Round off the value 23.78 to one decimal place. iv. Display the remainder of 100 divided by 9. v. Remove all the expected leading and trailing spaces from a column userid of the table 'USERS'. OR Explain the following SQL functions using suitable examples. i. UCASE() ii. TRIM() iii. MID() iv. DAYNAME() v. POWER()	5
32	KVS consultants are setting up a secured network for their office campus at Gurgaon. They are planning to have connectivity between 3 blocks and the head office at Mumbai. Answer the questions (a) to (d) after going through the block positions in the campus and other details, which are given below:  Distances between various buildings: Block A to Block C 120m Block A to Block B 55m Block B to Block C 85m New Delhi Campus to Head office 2060 Km Number of computers: Block A 32 Block B 150 Block C 45 Head office 10 a. Suggest a layout of connections between the blocks b. Suggest the most suitable place to house the server with justification. c. Which out of LAN/MAN/WAN is established when head office in Mumbai is connected with Delhi office . d. Suggest the placement of the following devices with justification: i)Switch ii) Repeater e. Which Protocol is used if Head office Mumbai wants to have video conferencing with office in Delhi	5

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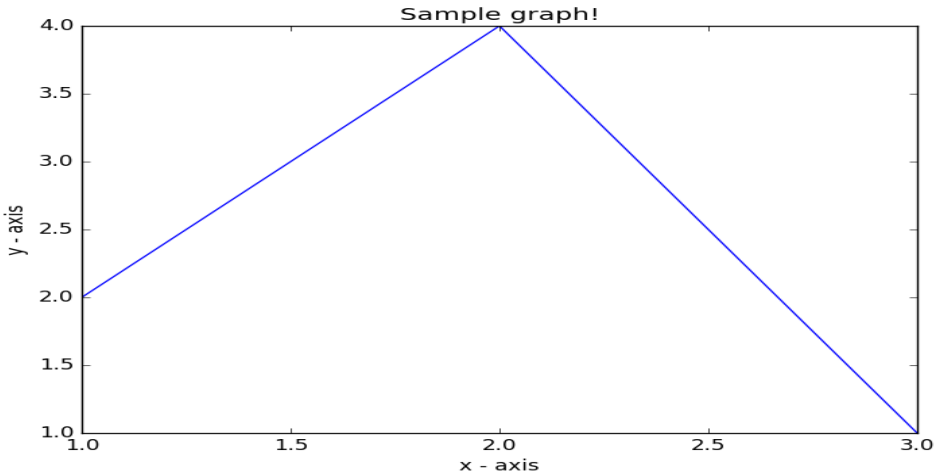
33	Write a Python program to draw a line as shown below using given axis values with suitable label in the x axis, y axis and a title.  OR What will be the output of the following code: import matplotlib.pyplot as plt plt.plot([1,2,3],[4,5,1]) plt.show()	5
	PART E	
34	Write SQL queries for (i) to (iii) which are based on the table. Table: TRANSACT ATDB.uno	1+1+2

TRNO	ANO	AMOUNT	TYPE	DOT
T001	101	2500	Withdraw	2017-12-21
T002	103	3000	Deposit	2017-06-01
T003	102	2000	Withdraw	2017-05-12
T004	103	1000	Deposit	2017-10-22
T005	101	12000	Deposit	2017-11-06

(i)To display details of all transactions of TYPE Deposit.
(ii)To display the ANO and AMOUNT of all Deposits and Withdrawals done in the month of October 2017
(iii)To display the last date of transaction (DOT) from the table TRANSACT for the Accounts having ANO as 103.

OR (OPTION FOR PART iii ONLY)

To display all ANO, DOT of those persons from table TRANSACT who have amount less than or equal to 3000 in ascending order of dot.

35	Suppose a data frame named df contains information about student having columns rollno, name, class and section. Write the code for the following: (i) Add one more column as fee (ii) Rename column 'fee' as 'qfee' (iii) Write python code to delete column fee of data frame and display the df OR (OPTION FOR PART iii ONLY) Write the Python code to display the fee for the complete year from dataframe but column 'fee' has fee for one month .	1+1+2

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Sample Paper 12
INFORMATICS PRACTICES (065)
Class XII

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.

	SECTION A	
1	Which of the following devices are used to connect dissimilar networks a. Hub b. Router c. Bridge d. Gateway	1
2	List two FOSS software?	1
3	Which of the following is not an example of e-waste? a. Damaged Mouse b. Unused Keyboard an c. Broken Toys d. Irreparable CPU	1
4	Write the output of the following SQL command. select round(4392.7866, 3); a. 4392.7860 b. 4392.7870 c. 4392.7880 d. 4392.7850	1
5	Predict the Output of below command: SELECT Length(Left("preparing for Class XII exam",5))	1
6	The data generated by a website, mobile app or any other activity on the internet is known as _____ digital footprint. a) Active Digital Footprint b) Passive Digital Footprint c) Direct Digital Footprint d) Indirect Digital Footprint	1
7	The INSTR() function in MySql is an example of _____. a. Math function b. Text function	1

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	d. Aggregate Function	
8	Which one of the following is an aggregate function? a. ROUND() b. MOD() c. SUM() d. Now()	1
9	What would be the output of the following command? Select Monthname('2019-09-10')	1
10	Which of the following is the right statement for creating dataframe from csv file. a. df = pd.Read_Csv("CardioGoodFitness.csv") b. df = pd.Read_csv("CardioGoodFitness") c. df = pd.read_Csv("CardioGoodFitness.csv") d. df = pd.read_csv("CardioGoodFitness.csv")	1
11	The command to display first 4 rows from series named "week" is _____. a. print(week.head (4)) b. print(week.Head(4)) c. print(week.heads(4)) d. print(week.Heads(4))	1
12	Series cannot be created using: a. ndarray b. dictionary c. scaler value d. Create_Series() method	1
13	What is the difference between static and dynamic website?	1
14	List the parameters of SUBSTR function.	1
15	Mr Ramesh has written a book "Computer Advancements". Another person Mr Vishal also wrote the "Computer Technologies" in which he used one of the paragraphs of Ramesh's Book but has not mentioned/referred his name in his book. This is an example of a. Identity theft b. Plagiarism c. Phasing d. Cyber stalking	1
16	Being rude or mean to someone in an online social networking site or game is an example of a. Identity theft b. Cyber Harassing c. Cyber Stalking d. Cyber Bullying	1
	Q17and 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): - Internet is a collection of networks Reasoning (R):- WWW is collection of Interconnected hypertext documents	1

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	Reasoning (R): in matplotlib there is pyplot which is used to create 2d charts.	
	SECTION B	
19	Expand the following terms related to Computer Networks: a. POP b. URL c. HTML d. DNS OR Give two examples of each add-ons and plugins	2
20	Shania, database administrator needs to display Team wise total number of match played by teams with 5 Bowlers and 6 Batsman. she is encountering an error while executing the following query: SELECT Team , COUNT (*) FROM Cricket GROUP BY Team Have Bowlers==5 OR Batsman= '6' Help her in identifying the reason of the error and write the correct query by suggesting the possible correction (s).	2
21	Write Sql Command Implementing Monthname() and lcase() function along with output	2
22	Write a program to create a series object using a dictionary that stores the number of boys in each from IX to XII your school. Note: Assume four class names are Ninth, Tenth, Eleventh and twelfth having 10, 20, 12, 16 boys respectively and pandas library has been imported as pd.	2
23	List two health hazards related to excessive use of Technology. Also list two precautions to be taken while using computers to avoid any health hazard. OR List any four net etiquettes.	2
24	What will be the output of the following code: import pandas as pd B=pd.Series(data=[45,50,55,45,78,54]) print(B>=55)	2
25	Carefully observe the following code: import pandas as pd D1={'R1':5000,'R2':8000,'R3':12000,'R4': 18000} D2={'A' :13000,'B':14000,'C':12000} D3={Y1:D1,Y2:D2} df=pd.DataFrame(D3) print(df) Answer the following: i. List index of the DataFrame df ii. List the column names of DataFrame df.	2

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26 Write outputs for SQL queries (i) to (iii) based on the given table Employee: **3**

TABLE: EMPLOYEE

EID	NAME	SALARY	Pcent	DEPT	DOJ
E01	GURPREET	20000	45	PHY	2022-06-11
E02	MALIKA	23000	56	CHEM	2022-02-19
E03	NADAR	15000	45	PHY	2021-12-04
E04	SAHIB	30000	67	CS	2021-11-10
E05	MEHAK	50000	78	CHEM	2021-06-20

i. SELECT LENGTH(NAME) FROM EMPLOYEE WHERE EPARTMENT='CHEM'
ii. SELECT NAME FROM EMPLOYEE WHERE MONTH(DOJ)=06;
iii. SELECT MOD (Pcent, DAY(DOJ)) FROM EMPLOYEE WHERE DEPARTMENT= 'PHY';

27 Write a Python code to create a DataFrame with appropriate column headings from the list given below: **3**

[['INDIA','Gurman',101],["Sri Lanka",'Rajveer',102],['Japan', 'Samar' ,103], ['Iran','Yuvraj',104]]
Print data whose name is 'Yuvraj'

28 Consider the given DataFrame 'Store': **3**

	Name	Price
0	Campus Shoes	1500
1	Washing Machine	12000
2	HP laptop	50000
3	Dell Laptop	45000

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Write suitable Python statements for the following:
i. Add a column called Quantity with the following data: [100,150,300,500].
ii. Add a new item namely Soap having price 50
iii. Rename the column Price with 'Amount'

29 **3**

i. Stealing of identity online for financial benefit is called _____

ii. Chasing and keep track of activities of a person online is called _____

iii. Fake Lottery email is an example of _____

OR

Define CC licences, Trademark Infringement. Give two example for which copy right is provided.

30 Based on table Players given below, write suitable SQL queries for the following Table: players **3**

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2022	Abhishek	56	M	Agra	Hockey
4012	Prateek	76	M	Mumbai	Cricket
3456	Sneha	88	F	Agra	Football
4534	Nancy	90	F	Mumbai	Hockey
6745	Himnashi	67	M	Delhi	Football
2134	Anchal	88	F	Dubai	Volley Ball
3245	Mehar	77	F	Moscow	Cricket
3786	Nishant	56	M	Moscow	Badminton

i. Display Gender wise highest points
ii. Display Sports wise lowest marks.
iii. Display City Wise Max and Avg of points

Or

Why do we use having clause? what will happen if both where and having clauses are used in single query

SECTION D

31 Write suitable SQL query for the following: 5

i. Display 8 characters extracted from 4th left character onwards from the string 'CBSE Board Exam Year 2022'
ii. Display the position of occurrence of string 'Exam' in the string 'CBSE Board Exam Year 2022'
iii. Find 7 to the power 3
iv. Display the remainder of 343 divided by 8.
v. Remove all the expected leading and trailing spaces from a column Name of the table employees

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OR

Explain the following SQL functions using suitable examples.

i. LCASE()
ii. RTRIM()
iii. MID()
iv. DAY()
v. POWER()

32 IT Care Ltd. an, international IT company is planning to set up its India campus at Delhi with its head office in Mumbai. The Delhi office campus has four main buildings- ADMIN, SALES, MANUFACTURE, and ACCOUNTS. 5

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

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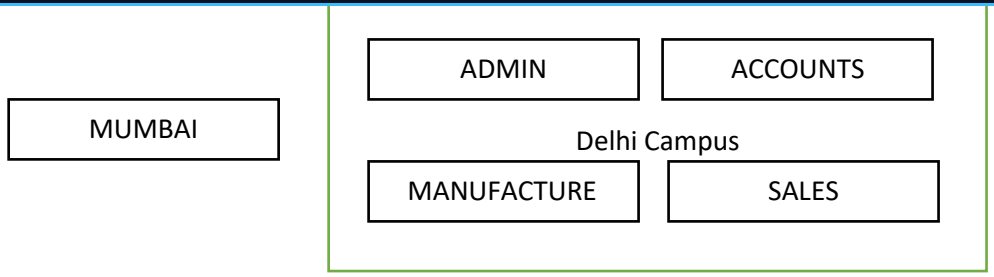

Shortest distances between various buildings:

ADMIN TO ACCOUNTS	80 m
ADMIN TO SALES	190 m
ADMIN TO MANUFACTURE	150 m
ACCOUNTS TO SALES	95 m
ACCOUNTS TO MANUFACTURE	50 m
SALES TO MANUFACTURE	85 m

MUMBAI Head Office to DELHI campus 2000 KM

Number of computers installed at various buildings are as follows:

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

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i) Where should be server place among four buildings at Delhi campus?
ii) Which topology would you suggest for these blocks and why?
iii) Which networking device will you suggest for interconnecting all the computers of various buildings? And why?
iv) Company is planning to get its website designed which will allow customers to see different types of IT Offers and Products, provide suggestion and can apply for featuring in advertisement. 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 delhi campus and Mumbai head office?
a) Cable TV b) Email c) Video conferencing d) Text chat

33	Write Python code to plot a bar chart for Mobiles sales for quarters	5

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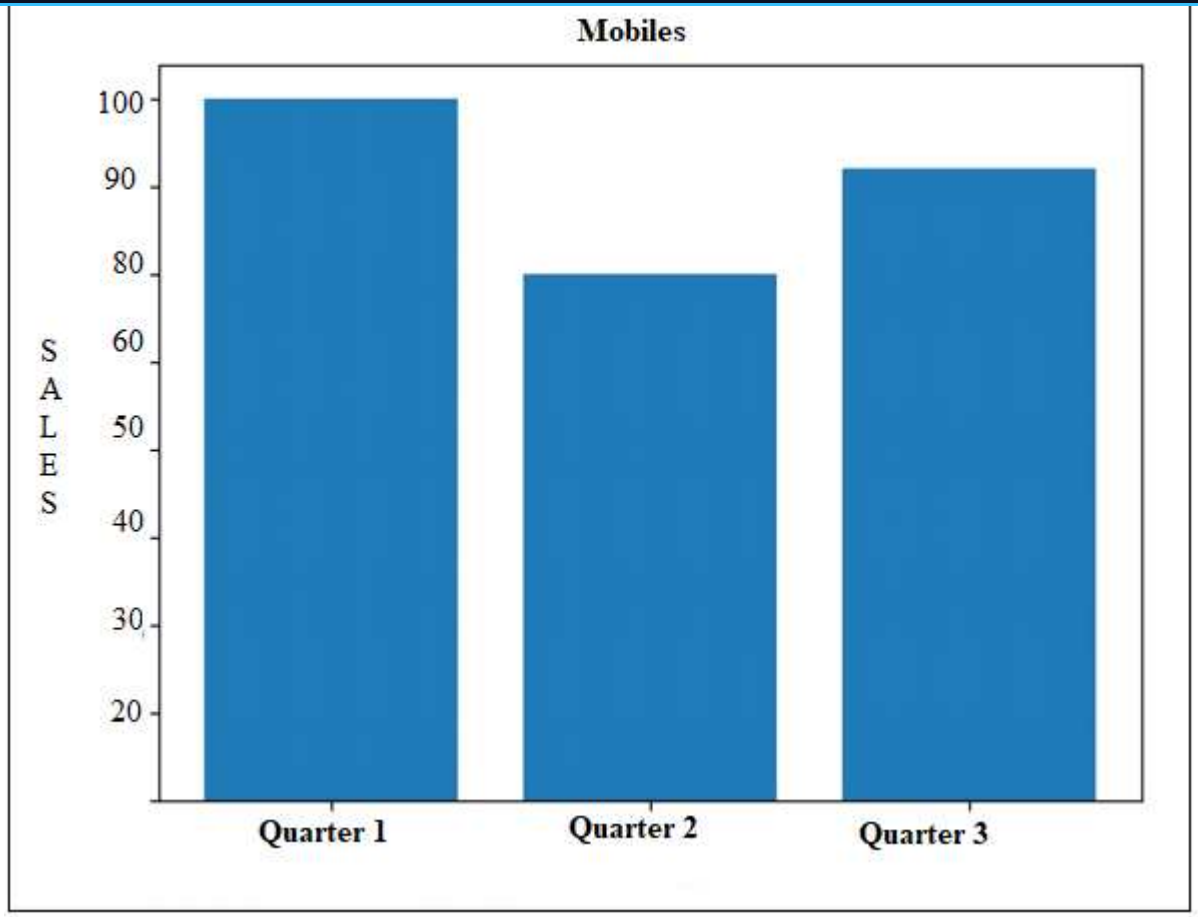

Also give suitable python statement to save this chart and assign file name 'Mybar'.

OR

Write a python program to plot a line chart based on the given data to depict the Monthly scoring rate of a batsman for four months and also assign suitable labels and title.

Month=[1,2,3,4]
Scoring rate=[140,132,148,164]

SECTION E

34 Ravi database administrator has designed a database for a Medical shop. Help him by writing queries of the following questions based on the given table: 1+1+2

TABLE: Med_Shop

MCODE	SNAME	COLOR	PRICE	DOE
M001	Capsule	BLUE	990	2022-01-26
M002	Tablet	RED	599	2021-12-25
M003	Syrup	GREY	399	2021-11-26
M004	Capsule	GREEN	1299	2019-11-25
M005	Syrup	WHITE	399	2021-12-28

i. Write a query to display Color names in lower case.
ii. Write a query to find the total number of medicine expire in year 25
iii. Write a query to find the average of Price for capsule

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Write a query to get the expire month name of medicine

35 Given Below is DataFrame df that contains data about results of Schools participated in national level sports and 'NO1', 'NO2', 'NO3', 'NO4', 'NO5' as indexes shown below. Answer the following questions: 1+1+2

	School	Tot_students	Topper	First_Runnerup
NO1	APS	40	32	8
NO2	DPS	30	18	12
NO3	KVS	20	18	2
NO4	JNV	18	10	8
NO5	SBS	28	20	8

Predict the output of the following python statement:

i. df.shape

ii. df[1:3]

iii. Write Python statement to display the data of Topper column of indexes NO2 to NO5.

OR (Option for part iii only)

Write Python statement to compute and display the difference of data of Top _students column and Topper column of the above given DataFrame.

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KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION

SAMPLE PAPER SET 13

CLASS XII **SUB: 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.

	PART A	
1.	_____ Topology is based on a central network which acts as hub i. STAR ii. MESS iii. TREE iv. BUS	1
2.	Online personal accounts like Paytm account, Phonepe account etc. are examples of i. Digital property ii. Digital Wallets iii. Digital Certificates iv. Digital Signature	1
3.	Discarded electrical or electronic devices are known as_? i. Digital Repository ii. E- Waste iii. E-wallets iv. E-Heap	1
4.	In SQL, which keyword is used in select clause of SQL query to select only one copy of each set of duplicate rows? i. Unique ii. Primary key iii. Check iv. Distinct	1

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5.	All aggregate functions except_____ignore null values in their input collection. i. a.count(sal) ii. count(*) iii. avg() iv. sum()	1
6.	Linux, MySQL and Mozilla Firefox software come under_____ category. i. Proprietary ii. FOSS iii. Freeware iv. Shareware	1
7.	Write the output of the following SQL commands Select round(458.45,-1): i. 450 ii. 460 iii. 458 iv. 500	1
8.	The string function that returns the index of first occurance of substring is i. insert() ii. instr() iii. instring() iv. infstr()	1
9.	Which one of the following functions is not a built in aggregate function in SQL? i. avg( ) ii. max( ) iii. sum( ) iv. largest( )	1
10.	Given a Pandas series called Sequences, the command which will display the first 4 rows is i. print(Sequences.head(4)) ii. print(Sequences.Head(4)) iii. print(Sequences.heads(4) iv. print(Sequences.Heads(4))	1

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11.	Select the correct statement (a) import panda as pd (b) import pandas as pd (c) import pd as pandas (d) import pd as panda	1

12.	DataFrame in pandas can be created from which of the following? i. Series ii. List of Dictionaries iii. Structured ndarray iv. All of these	1
13.	Which amongst the following is not an example of a browser? i. safari ii. opera iii. Kaspersky iv. Netscape	1
14.	The NOW() function in MySql is an example of a. Math function b. Text function c. Date Function d. Aggregate Function	1
15.	..... is a document that provides legally binding guidelines for the use and distribution of software.	1
16.	Using someone else's twitter handle to post something, will be termed as: a.fraud b.identity theft c.online stealing d.violation	1

Q17 and 18 are ASSERTION AND REASONING based questions.
Mark the correct

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

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17.	**Assertion (A): -** There is a centralized control in case of Star topology. **Reasoning (R):-** A hub can transfer data packets only to the intended node in a network.	1
18.	**Assertion (A):-** DataFrame is a two dimensional labelled array. Its column type can be heterogeneous i.e.,of varying types **Reasoning (R): -** We need a DataFrame with a Boolean index to use the Boolean indexing.	1

	PART B	
19.	Name four softwares used for video conferencing. **OR** Write the difference between Hub and Switch	2
20.	Write a query to display name, job, salary and hiredate of employees who are hired between may 20, 1990 and December 31,1991. Order the query in ascending order of hiredate. (table emp)	2
21.	What is the purpose of Order By clause in SQL? Explain with the help of suitable example.	2
22.	Write code to change the indexes of the given series object in any random order. s1=pd.Series(data=[100,200,300,400],index=['I','J','K','L'])	2
23.	Write about preventive measures about health concerns due to overuse of Digital technology. **OR** How can we prevent identity thefts ?	2
24.	What will be the output of the following code: >>>import pandas as pd >>>A=pd.Series(data=[25,45,70,40]) >>>print(A<=40)	2

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25.	Consider the following 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 : i. Add a new column 'Activity' to the Dataframe ii. Add a new row with values (5 , Mridula ,X,F, 9.8, Science)	2

	SECTION C	
26.	Sanjeev is executing the following queries: i) Select len(" OMICRON VARIENT "); ii) Select len(ltrim(" OMICRON VARIENT ")) iii) Select len(rtrim(" OMICRON VARIENT ")) (There are 3 spaces before and after the string) What is the output of the following queries. ATDB.uno	3
27.	Write a python code to create a dataframe with appropriate headings from the list given below ['S101', 'Amy', 70], ['S102', 'Bandhi', 69], ['S104', 'Cathy', 75], ['S105','Gundaho', 82]	3

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28.	Consider the dataframe SHOP given below: Item Qty City Price 101 Biscuit 100 Delhi 10 102 Jam 110 Kolkata 25 103 Coffee 200 Kolkata 55 104 Sauce 56 Mumbai 55 105 Chocolate 170 Delhi 25 Write commands to : (i) Write short code to show the information having city=”Delhi” (ii) Calculate Qty* Price and assign to column ‘Net_Price’ (iii) Display name of all rows	3
29.	Sumita has recently shifted to a new city and school. She does not know many people in her new city and school. But all of a sudden, someone is posting negative, demeaning comments on her social networking profile etc. She is also getting repeated mails from unknown people. Every time she goes online, she finds someone chasing her online. i. What is this happening to Sumita? ii. What immediate action should she take to handle it? Is there any law in India to handle such issues? Discuss briefly.	3

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	Or What is Intellectual property? What are the different types of Intellectual property? What things can not be copyrighted?	

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30.	Consider the table – Teacher : No Name Age Department Dateofadm Salary Gender 1 Jugal 34 Computer 1997/01/10 12000 M 2 Sharmila 31 History 1998/03/24 20000 F 3 Sandeep 32 Maths 1996/12/12 30000 M 4 Sangeeta 35 History 1999/07/01 40000 F 5 Rakesh 42 Maths 1997/09/05 25000 M 6 Shyam 50 History 1998/06/07 30000 M 7 Shivam 44 Computer 1997/02/25 21000 M 8 Shalakha 33 Maths 1997/07/31 20000 F Predict the output for given queries: a. select sum(salary) from teacher where gender='M' and department in ('Computer', 'Maths'); b. select max(age)+min(age) from teacher where gender='F'; c. select department, avg(sal) from teacher group by department; **OR** Discuss the significance of Group by clause in detail with the help of suitable example.	
	SECTION D	
31.	Heena has created a table ' student' with the attributes id varchar(20), name varchar(50), city varchar(50), contactno varchar(11) She wants to write the queries for the following. Help her write the queries for the same i. To extract the first four characters from the name ii. To display the names in the lower case iii. To display the characters from 4th position of column city iv. Display the remainder of 100 divided by 9. v. Remove all the expected leading and trailing spaces from a column Name of the table **'Student'**. **OR** Predict the output for the following queries (* represents space) i. select trim(' *To*Be*Continued***') ii. select left('preoccupied', 4) iii. select mid('informatics practices', 6,5) Explain the following SQL functions using suitable examples. iv. DAYNAME() vi. POWER()	5
32.	Be Happy Corporation has set up its new centre at Noida, Uttar Pradesh for its office and web-based activities. It has 4 blocks of buildings. The distance between the various blocks is as follows:	5

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A to B	40 m
B to C	120m
C to D	100m
A to D	170m
B to D	150m
A to C	70m

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Numbers of computers in each block

Block A	25
Block B	50
Block C	125
Block D	10

(a) Suggest and draw the cable layout to efficiently connect various blocks of buildings within the Noida centre for connecting the digital devices.

(b) Suggest the placement of the following device with justification

(i) Repeater

(ii)Hub/Switch

(c) Suggest the most suitable Block to house the server in the company at Noida.

(d)Which kind of network (PAN/LAN/WAN) will be formed if the Noida office is connected to its head office in Mumbai

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(e) Which fast and very effective wireless transmission medium should preferably be used to connect the head office at Mumbai with the centre at Noida?

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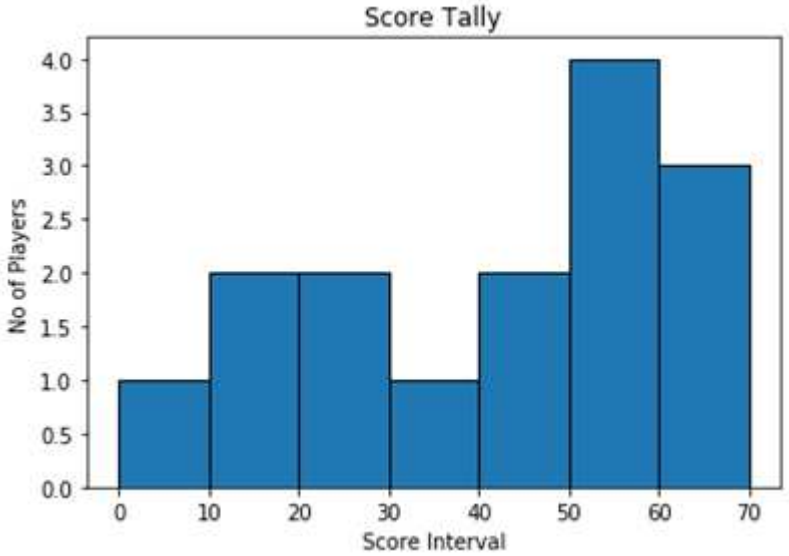
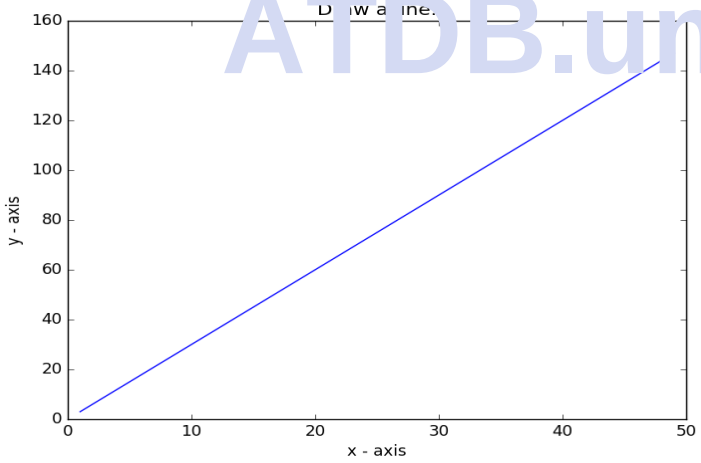
33.	Write the python code to plot the given histogram with the following data set: Score=[8,10,15,25,28,35,47,49,50,63,67,53,57,58,69]  Also give suitable python statement to save this chart. **OR** Write a python program to plot the below given line chart with suitable label in the x axis, y axis and a title.  Also give suitable python statement to save this chart.	5

SECTION E

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34.	Shreya, a student has designed a database for a student for her teacher. Help her by writing answers of the following questions based on the given table: student No Name Stipend Stream mark Grade 1 Karan 400 CS 78 B 2 Kiran 500 IP 88 A 3 Robert 450 BIO 89 A 4 Rubina 200 CS 92 A 5 Vikas 300 BIO 95 A 6 Rohan 500 CS 80 NULL Write the queries for the following table student: 1). Display the records in the ascending order of Name ii). Display the number of students in a particular Stream iii). Display the average marks of the students stream wise iv). Display the student who got the maximum marks	1+1+1+1
	OR (Option for part iii &iv only) iii.Write a query to display maximum marks in each Stream.	2
35.	System analyst of ABC corporation has designed the DataFrame **df** that contains data about various departments of the company as shown below. Answer the following questions: A. Predict the output of the following python statement: i. df.size ii. ii. df[1:3] B. Write Python statement to display the data of Salay column of indexes 2 to 4. **OR (Option for part iii only)** Write Python statement to change the value of salary column to 40000 of the above given DataFrame.	1+1+2

	Dept	To_Employee	Avg_age	Avg_salary
1	Actt	40	3[illegible]	[illegible]5000
2	Sales	30	28	35000
3	HR	20	28	32000
4	Mkt	18	30	40000
5	Prod	28	40	42000

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KENDRIYA VIDYALAYA SANGATHAN, JAMMU REGION

SAMPLE PAPER SET 14

CLASS XII **SUB: INFORMATICS PRACTICES**

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.

	PART A	
1.	Which of the following is not a network topology : i. Star ii. Mesh iii. Tree iv. Bug	1
2.	The following is automatically granted to the creator or owner of any invention (a) Patent (c) Trademark b) Copyright (d) License	1
3.	The primary law in India dealing with cybercrime and electronic commerce is (a) India's Technology (IT) Act, 2008 (b) Digital Information Technology (DIT) Act, 2000 (c) Information Technology (IT) Act, 2000 (d) The Technology Act, 2008	1
4.	Which one of the following would arrange the rows in ascending order in SQL ? (A) SORT BY (B) ALIGN BY (C) GROUP BY (D) ORDER BY	1

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5.	What SQL statement do we use to find the total number of records present in the table Report? (i) Select * from Report; (ii) Select Count(*) from Report; (iii) Select Sum() from Report; (iv) Select Total() from Report;	1
6.	GPL stands for (a) Guided Public License (b) Global Public License (c)General Public License (d) General Public Letter	1
7.	Write the output of the following SQL command: SELECT round(789.567, -2); a. 789.5 b. 780.567 c. 800 d. 789	1
8.	All aggregate functions except _____ ignore null values in their input collection. i. Count(column_name) ii. Count(*) iii. Avg() iv. Sum()	1
9.	The avg() function in MySql is an example of _____. a. Math function b. Text function c. Date Function d. Aggregate Function	1

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10.	Given a Pandas series called Sequences, the command which will display the first 6 rows is _____. a. print(Sequences.head(6)) b. print(Sequences.Head(6)) c. print(Sequences.heads(6) d. print(Sequences.Heads(6))	1
11.	Which python library is not used for data science? (a) Panda (b) Numpy (c) Matplotlib (d) Tkinter	1

12.	Which library is imported to draw charts in Python? (a) csv (b) matplotlib (c) numpy (d) pandas	1
13.	In the _____ field of the e-mail, enter the recipients whose address you want to hide from other recipients. 1 (A) Carbon Copy (B) To (C) Blind Carbon Copy (D) All of the above	1
14.	The trim()function in MySql is an example of_____. a. Math function b. String function c. Date Function d. Aggregate Function	1
15.	A contract between the creator and the user to allow the user use his/her work with some price is (a) Agreement (c) License (b) Copyright (d) Patent	1
16.	The rights of the owner of information to decide how much information is to be shared/exchanged/distributed, are collectively known as (a) Intelligent Portable Rights (b) Intellectual Property Rights (c) Interactive Property Rights (d) Instance Portability Rights	1
Q17 and 18 are	ASSERTION AND REASONING based questions. Mark the correct c	

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	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): -** Digital footprint is the trail of data we leave behind when we visit any website (or use any online application or portal) to fill-in data or perform any transaction. **Reasoning (R):-** While online, all of us need to be aware of how to conduct ourselves, how best to relate with others and what ethics, morals and values to maintain.	1
18.	Assertion (A): A cookie is a text file, containing a string of information, which is transferred by the website to the browser when we browse it to track the user's browsing activity. Reason (R) A cookie is a type of malware that harms the computer	1

	PART B	
19.	Explain the terms WWW and Internet. **OR** Discuss the functions of web server	2
20.	Raunak wanted to display the list of employees who did not get commission. Therefore, he wrote the following query in SQL : SELECT emp_name from emp where comm=NULL; He did not get the correct answer. Identify the error and write the correct SQL statement	2
21.	Can we use Where clause after Group By clause ? Name the clause which is used to restrict the number of records returned by the Group By clause.	2
22.	Write a program in Python to create the series of all the alphabets of "Happy" with default index. Print the first three alphabets	2
23.	Nowadays children are fond of playing computer games. What is the health hazard that can occur due to excessive use of computer/smart phone screens ? **OR** What is the difference between Creative Commons license and copyright?	2
24.	Write the output of the given command: import pandas as pd s=pd.Series([1,2,3,4,5,6],index=['A','B','C','D','E','F']) print(s[s%2==0])	2

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25. Consider the following DataFrame STUdf, — 2

	ROLLNO	NAME	CLASS	MARKS
Stu1	1	AMAN	IX	42
Stu2	2	RAMAN	X	37
Stu3	3	SURAJ	IX	40

Write commands to:

a. Add a new column STREAM to the DataFrame

b. Add a new row with values (4, Sheetal, X, 41)

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SECTION C

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26. Write outputs for SQL queries (i) to (iii) which are based on the given table PURCHASE: [3]

TABLE: Salesperson

SID	Name	Phone	DOB	Salary	Area
S101	Amit Kumar	98101789654	1967-01-23	67000.00	North
S102	Deepika Sharma	99104567834	1992-09-23	32000.00	South
S103	Vinay Srivastav	98101546789	1991-06-27	35000.00	North
S104	Kumar Mehta	88675345789	1967-10-16	40000.00	East
S105	Rashmi Kumar	98101567434	1972-09-20	50000.00	South

i.
```
SELECT Area, COUNT(*)FROM Salesperson
GROUP BY Area;
```

ii.
```
SELECT Area, COUNT(*)FROM Salesperson
GROUP BY Area HAVING COUNT(*) > 1;
```

iii.
```
SELECT mid(name,2,5)FROM Salesperson
```

27. Write a Python code to create the following Dataframe **df** from a Dictionary: [3]

	Name	Age
0	Alex	10
1	Bob	12
2	Clarke	13
3	John	11

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28. Consider the given DataFrame **'Stock':** [3]

	Rollno	Name	Class	Section	Marks	Stream
S1	1	Sheetal	XI	A	87	Science
S2	2	Preet	XI	B	89	Arts
S3	3	Kartik	XI	A	92	Science
S4	4	Laksh	XI	A	94	Commerce

Write suitable Python statements for the following:

i. Add a new column 'Percentage' to the Data frame.

ii. Add a new row with values (5 , Rohit ,XI, A ,98,Science)

iii. Remove the column Stream.

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29.	Sumit has to prepare a project on "Swachh Bharat Shreshth Bharat". He decides to get information from the Internet. He downloads three web pages (webpage1, webpage 2, webpage 3) containing information on the given topic. 1. He read a paragraph on from webpage 1 and rephrased it in his own words. He finally pasted the rephrased paragraph in his project. 2. He downloaded three images of from webpage 2. He made a collage for his project using these images. 3. He also downloaded an icon from web page 3 and pasted it on the front page of his project report i. Step1 An Example of _____ ii. Step 2 An act of _____ iii. Step 3 An act of _____	3

	OR What is Intellectual Property Right (IPR)? Mention any two types of IPRs.	
30.	Based on table **Electronics** given here, write suitable SQL queries for the following:	3

BRAND	APPLIANCE_NAME	DISCOUNT	PRICE	QUANTITY
LG	REFRIGERATOR	15	19800	63
SAMSUNG	SMART PHONE	20	22300	26
LLOYD	TELEVISION	22	12900	12
LG	AIR CONDITIONER	15	23000	32
GODREJ	WASHING MACHINE	13	18000	48
SONY	TELEVISION	12	35600	52
SAMSUNG	WASHING MACHINE	15	20110	35

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i. Display Brand wise highest price.
ii. Display Brand wise lowest discount.
iii. Display total quantity of brand "LG".

OR

How HAVING clause is different from WHERE clause in SQL. Explain with the help of suitable example.

	SECTION D	

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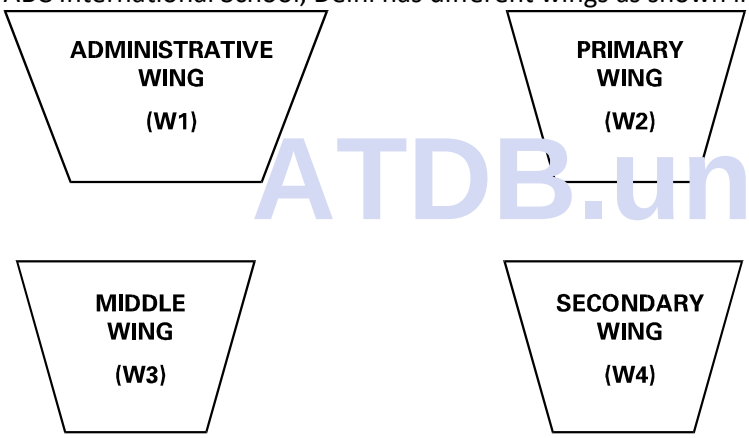
31.	Write suitable SQL query for the following: (i) To display total characters in a string field "FacultyName". (ii) To round the argument x that contains number 234.6789 to 3 decimal places. (iii) To return the last 5 characters from a string field "LastName". (iv) To display Day name of your date of birth field. (v) To display 2 characters starting from the 3rd position from the string field "Address" **OR** Explain the following SQL functions using suitable examples. i. LCASE() ii. LEFT() iii. INSTR() iv. NOW() v. ROUND()	5
32.	ABC International School, Delhi has different wings as shown in the diagram :  Distance between the wings are as follows: W3 to W1 — 70 m W1 to W2 — 40 m W2 to W4 — 15 m W4 to W3 — 100 m W3 to W2 — 120 m W1 to W4 — 80 m Number of computers in each of the wings : W1 — 125	5

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W2	40
W3	42
W4	60

Based on the above information, answer the following questions : 5

(a) Suggest the most suitable cable layout for the above connections.

(b) In which wing would you place the server? Explain the reason for your selection.

(c) Suggest the kind of network required (out of LAN, MAN, WAN) for connecting Administrative Wing and Middle Wing.

(d) Suggest the placement of the following devices with justification:

(i) Repeater

(ii) Switch/Hub

(e) There is one more branch of ABC International School in Mussoorie. The schools want to link ABC International School, Delhi with ABC International School, Mussoorie. Suggest the software(s) or app(s) to share the files and videos.

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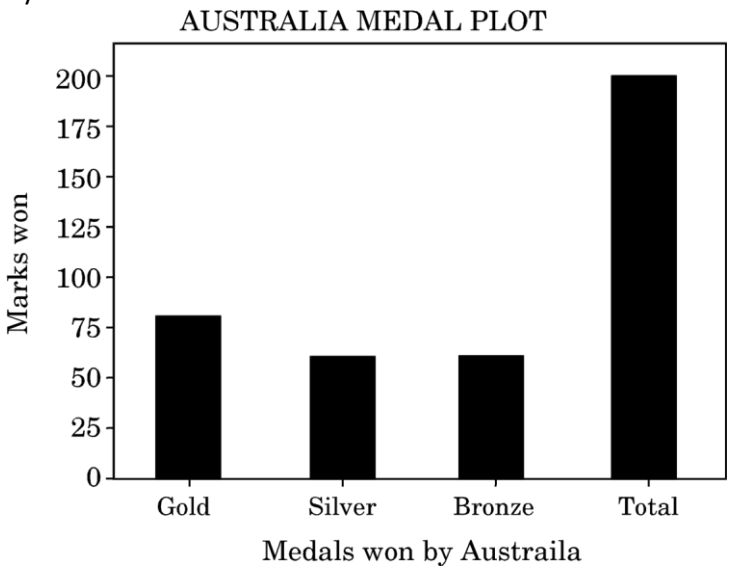
33.	Write code to draw the following bar graph representing the total number of medals won by Australia.  Medals won by Austraila Also give suitable python statement to save this chart. **OR** The table below shows the Marks of two students for the four unit tests for academic session 2019-2020. Write the code to draw a line graph with Test Names on the X axis and Marks on the Y axis. Tests Marks Rohit Suman Unit1 85 77 Unit2 88 99 Unit3 89 90 Unit4 87 92	5

SECTION E

34.	Shreya, a database administrator has designed a database for a clothing shop. Help her by writing answers of the following questions based on the given table: **TABLE: CLOTH** **Table : PARTICIPANTS** **PNO** | **EVENT** | **SNAME** | **CLASS** | **DOB** **P1** | **DEBATE** | **SANYAM** | **12** | **2001-12-25** **P2** | **DEBATE** | **SHRUTI** | **10** | **2003-11-10** **P3** | **DEBATE** | **MEHER** | **12** | **2001-11-10**	1+1+2

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P4	QUIZ	SAKSHI	11	2002-10-12
P5	QUIZ	RITESH	12	2001-10-12
P6	QUIZ	RAHUL	10	2003-10-12
P7	CROSSWORD	AMEER	11	2002-05-09
P8	CROSSWORD	MINAKSHI	12	2001-05-09

(i) To display details of all PARTICIPANTS of CLASS 10 and 12

(ii) To display the SNAME and CLASS of all PARTICIPANTS in ascending order of their SNAME.

(iii) To display the number of PARTICIPANTS along with their respective CLASS, of every CLASS.

OR (Option for part iii only)

Write a query to count class wise number of events from PARTICIPANT Table

35. Consider a dataframe **STOCK** created with the following information.

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	ITEMS	ID	QUANTITY
0	PEN	1001	500
1	PENCIL	1004	300
2	ERASER	1007	280

1+1+2

A. Predict the output of the following python statement:
   i. STOCK.shape
   ii. STOCK[1:2]

B. Write Python statement to display the data of ITEMS and ID.

OR (Option for part iii only)

(i) Write Python statement to display the total number of all **ITEMS** in the **STOCK**

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SAMPLE QUESTION PAPER
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.

	PART A	
1.	Which of the following topologies needs least cable length ? a. Star b. Tree c. Bus d. None of the above	1
2.	You were not able to create the IP project, therefore you downloaded a project from the internet and submitted it in your teacher by your name. This wrong/unethical act is considered as _____ . a. Copyright b. Hacking c. Plagiarism d. Trademark	1
3.	Out of the following, which crime(s) will come under cyber crime category ? a. Identity theft b. Invasion of privacy c. Online harassment d. All of the above	1
4.	An aggregate function performs a calculation on _____ and returns a single value. a. single value b. multiple values c. no value d. None of the above	1
5.	What SQL statement to print all the records present in the table Report? (i) Select * from Report; (ii) Select Count(*) from Report; (iii) Select Sum() from Report; (iv) Select Total() from Report;	1

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6.	Technology not protected by copyright and available to everyone, is categorized as: a. Proprietary b. Open Source c. Experimental d. Shareware	1
7.	Write the output of the following SQL command : select round(3456.885, 2); a. 3456.88 b. 3456.89 c. 3400 d. 3500	1
8.	Which of the following are correct aggregate functions in SQL : (i) **AVERAGE()** (ii) **MAX()** (iii) **COUNT()** (iv) **TOTAL()**	1
9.	Manish wants to select all the records from a table named "Students" where the value of the column "FirstName" ends with an 'a'. Which of the following SQL statement will do this? a. SELECT * FROM Students WHERE FirstName = 'a'; b. SELECT * FROM Students WHERE FirstName LIKE 'a%'; c. SELECT * FROM Students WHERE FirstName LIKE '%a'; d. SELECT * FROM Students WHERE FirstName = '%a%';	1
10	What will be the output of the following program ? import pandas as pd x=6 S1=pd.Series(x,index=[1,2,4,6,8,9]) print(S1) (A) 1 6 2 6 4 6 6 6 8 6 9 6 dtype: int64 (B) 0 6 dtype: int64	1

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	(C) 1 2 4 6 8 9 6 6 6 6 6 6 dtype: int64 (D) None of the above	
11	Using Python Matplotlib _____ can be used to display information as a series of data points. a. line chart b. bar graph c. histogram d. None of the above	1
12	Which one of the following is an attribute of the series in Pandas to set the index label for the given object ? a. label b. index c. loc d. All of the above	1
13	A _____ is a collection of interconnected _____ designed with a goal in mind. a. webpage, website b. web browser, webpage c. server, client d. website, webpage	1
14	The LEFT()function in MySql is an example of _____. a. Math function b. Text function c. Date Function d. Aggregate Function	1
15	E-waste is harmful to the environment and human health if not properly treated or disposed of, therefore they must be handled with care. What are the health hazards which can be caused by E-waste ? a. Lung cancer b. DNA damage c. Brain damage d. All of the above	1
16	A software company purchases new computers every year and discards the old ones into the local dumping yard. Write the name of the most appropriate category of waste that the organisation is creating every year, out of the following options : (i) Business Waste (ii) Commercial Waste (iii) Solid Waste (iv) E-Waste	1
	Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct option i. Both A and R are true and R is the correct explanation for A	

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	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):** - An Internet troll is a person who deliberately sows discord on the Internet by starting quarrels or upsetting people. **Reasoning (R):-** : We can download and use any material available on the Internet.	1
18	**Assertion (A):-** Data visualization refers to the graphical representation of information and data using visual elements like charts, graphs and maps etc. **Reasoning (R): : To install matplotlib library we can use the command pip install matplotlib.**	1
	PART B	
19	How do Computer networks reduce hardware costs of an organization? Explain with the help of example **OR** Compare BUS topology with STAR topology. Give example.	2
20	If there are 10 rows in 'Emp' table and 5 rows in 'Department' table, How many rows will be displayed by the following query? SELECT * FROM Emp, Department; Write the term used for the Join being used on the two tables mentioned above.	2
21	What do you understand by the Degree and Cardinality of a relation.	2
22	Consider the following two series 'A' and 'B' : A=pd.Series([2,4,6], index=[0,1,2]) B=pd.Series([1,3,5], index=[1,2,3]) (i) Write the statement to add both the series 'A' and 'B'. (ii) Write the statement to multiply two series 'A' and 'B'.	2
23	35 What do you mean by identity theft? Explain with the help of an example. **OR** What do you understand by Net Etiquettes? Explain any two such etiquettes.	2
24	A series S1 with the values (2,3,1). Find the output of the following two statements considering the above created series : a. print(S1**3) b. print(S1*3)	2
25	Consider the following 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)	2
	SECTION C	
26	Write outputs for SQL queries (i) to (iii) which are based on the given table LOAN **TABLE: LOAN**	3

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AccNo	Name	Loan_Amt	EMI	Int_Rate	Start_Date	Interest
1001	R.K. Gupta	300000	36	12.00	19-07-2009	1200
1002	S. P. Sharma	500000	48	10.00	22-03-2008	1800
1003	K.P. Jain	300000	36	NULL	08-03-2007	1600
1004	M.P. Yadav	800000	60	10.00	06-12-2008	2250
1005	S.P. Sinha	200000	36	12.50	03-01-2010	4500
1006	P. Sharma	700000	60	12.50	05-06-2008	3500
1007	K.S. Dhall	500000	48	NULL	05-03-2008	3800

a. Select count(*) from LOANS where name Like ‘Sharma%’;

b. Select Count(*) from LOANS where Int_Rate is NULL

c. Select min(Loan_Amount) , max(Loan_Amount) from LOANS

27 Write a program in Python Pandas to create the following DataFrame df1: 3

	S.No	City	Maxtemp	Mintemp	Rainfall
0	1	Delhi	40	32	24.1
1	2	Benglaru	31	25	36.2
2	3	Chennai	35	27	40.8
3	4	Mumbai	29	21	35.2
4	5	Kolkata	39	23	41.8

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28 Consider the following dataframe ndf as shown below : 3

	Col1	Col2	Col3	Res
T1	62.893165	100.0	60.00	True
T2	94.734483	100.0	59.22	True
T3	49.090140	100.0	46.04	False
T4	38.487265	85.4	58.60	False

What will be the output produced by following statements :-

i. print(ndf.loc [:, ’Column3’ :])

ii. print(ndf.iloc[2: , : 3])

iii. print(ndf.iloc [1:3 , 2:3])

29 XYZ Company developed software, related to face recognition with a team of 15 software developers. XYZ company Registered the software with a face symbol to easily recognize their software. Before approval of software by the registering firm, Rohit one of the team member of the software published the same software in internet under different name as it is his own development. XYZ firm recognized this activity and informed to the police. The police people arrested the Rohit and removed the software from the internet. Police advice the XYZ firm to apply for patent as the software is a new invention. 3

a. XYZ firm registered the software with face symbol to easily recognize their software .In this context face symbol is called?

b. The activities done by the Rohit is called as _____

c. Patents are valid for how many years ?

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OR

What do you mean by cyber security? How one can protect His/Her data.

30 A relation Vehicles is given below : 3

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 SQLcommands to:

a. Display the average price of each type of vehicle having quantity more than 20.

b. Count the type of vehicles manufactured by each company.

c. Display the total price of all the types of vehicles.

OR

State any two differences between single row functions and multiple row functions with examples.

SECTION D

31 Write the SQL functions which will perform the following operations: 5

i To display the day of the month of the current date .

ii To display the length of string , " hello ".

iii To display the name of the day eg, Friday or Sunday from your date of birth, dob.

iv. To display the string in upper case 'I love india'

v. To compute the 2^3 using sql function.

OR

Explain the following SQL functions using suitable examples.

i. LCASE()
ii. LEFT()
iii. INSTR()
iv. NOW()
v. ROUND()

32 Oberoi Industries has set up its new center at Mangalore for its office and web based activities. It has 4 blocks of buildings as shown in the diagram below : 5

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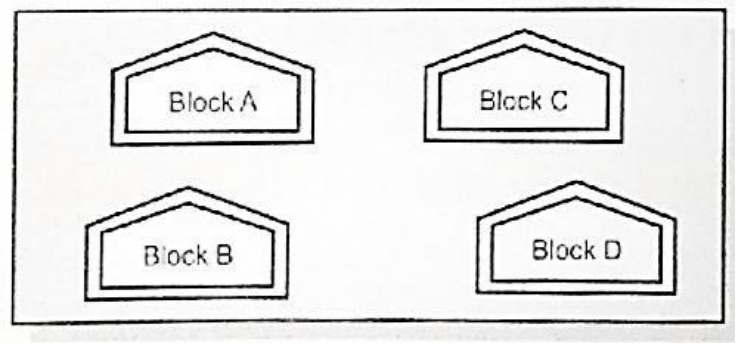

Center to center distances between various blocks :-

Block A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

Number of Computer :-

Block A	25
Block B	50
Block C	125
Block D	10

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i. What type of network will be formed if all blocks are connected?

ii. Suggest the most suitable place (i.e. Block) to house the server of this organization with a suitable reason.

iii. Suggest the placement of the following devices with justification.
(a) Repeater (b) Hub / Switch

iv. The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible, suggest an economic way to connect way to connect it with reasonably high speed.

v. Which type of network will it form.

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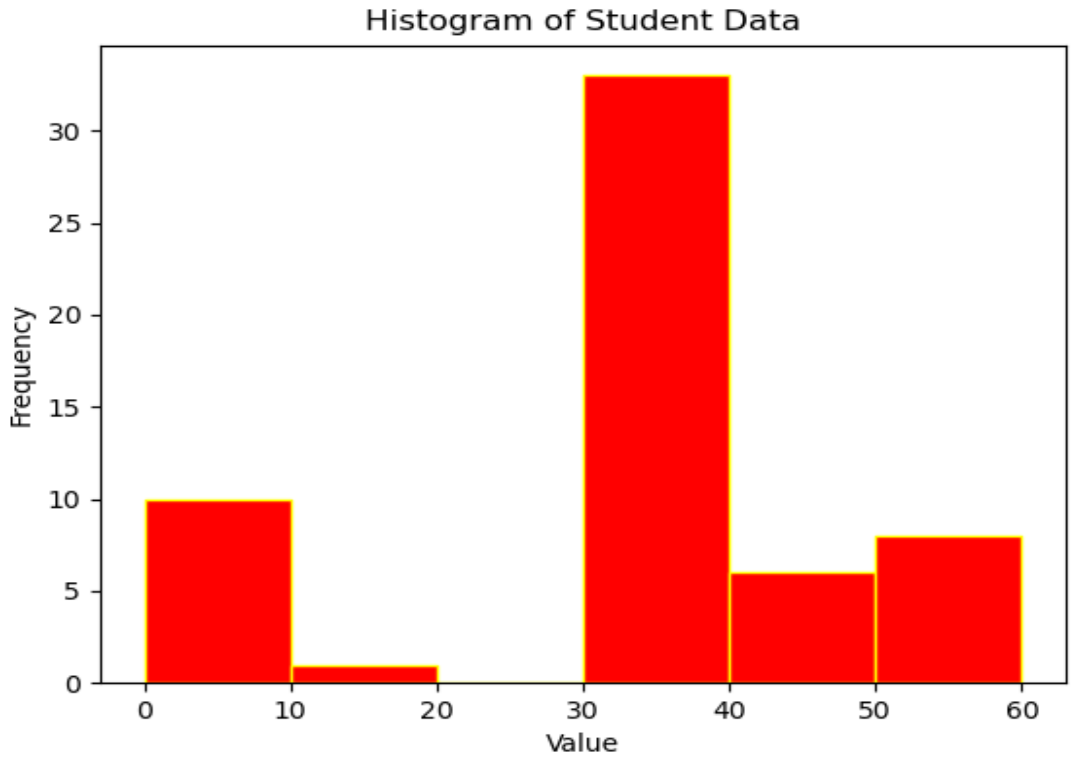
33	Consider the following graph. Write a program in python to draw it. (Height of Bars are 10,1,0,33,6,8)  Also give suitable python statement to save this chart. **OR** Write a Python program to display a bar chart of the number of students in a school. Sample data: Class: I,II,III,IV,V,VI,VII,VIII,Ix,X Strength: 38,30,45,49,37,53,48,44,36,46	5
	SECTION E	
34	Consider a table SALESMAN with the following data: SNO SNAME SALARY BONUS DATE OF JOIN A01 Beena Mehta 30000 45.23 29-10-2019 A02 K. L. Sahay 50000 25.34 13-03-2018 B03 Nisha Thakkar 30000 35.00 18-03-2017 B04 Leela Yadav 80000 NULL 31-12-2018 C05 Gautam Gola 20000 NULL 23-01-1989 C06 Trapti Garg 70000 12.37 15-06-1987 D07 Neena Sharma 50000 27.89 18-03-1999 Write SQL queries using SQL functions to perform the following operations: 1 Display salesman name and bonus after rounding off to zero decimal places. 2 Display the position of occurrence of the string “ta” in salesman names. 3 Display the four characters from salesman name starting from second character. **OR (Option for part iii only)** Display the month name for the date of join of salesman	1+1+2
35	Consider a set of information for an Exam conducted for students with following details : **Names** | **Marks** | **Trials** | **Passed** **Sanya** | **95** | **2** | **yes**	1+1+2

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Krish	**70**	**3**	**no**
Rishav	**96.5**	**1**	**yes**
Deepak	**75**	**2**	**no**
Kriti	**92**	**1**	**yes**

For the above Dataframe **df** ,write single line statements for each of the following parts (a) to (c), which use Pandas method :

a. To display the **'Names'** and **'Marks'** columns from the DataFrame.

b. To change the **'Marks'** in the 4th row (i.e. for index 3) to 91.5

c. To display the rows where number of **'Trials'** in the examination is less than 2

OR (Option for part iii only)

To display the maximum value of the column Marks

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