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.	Television cable network is an example of: 　i.　LAN 　ii.　WAN 　iii.　MAN 　iv.　Internet	1
2.	Which of the following is not a type of cyber crime? 　i.　Data theft 　ii.　Installing antivirus for protection 　iii.　Forgery 　iv.　Cyber bullying	1
3.	What is an example of e-waste? 　i.　A ripened mango 　ii.　Unused old shoes 　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 inventory;** 　i.　Numeric value 　ii.　text value 　iii.　Null value 　iv.　Date value	1

5.	If column **"Fees"** contains the data set (5000,8000,7500,5000,8000), what will be the output after the execution of the given query? **SELECT SUM (DISTINCT Fees) FROM student;**
	
	   i. 20500
	   ii. 10000
	   iii. 20000
	   iv. 33500
		1

6.	**'O'** in FOSS stands for:
	   i. Outsource
	   ii. Open
	   iii. Original
	   iv. Outstanding
		1

7.	Which SQL statement do we use to find out the total number of records present in the table ORDERS?
	
	   i. SELECT * FROM ORDERS;
	   ii. SELECT COUNT (*) FROM ORDERS;
	   iii. SELECT FIND (*) FROM ORDERS;
	   iv. SELECT SUM () FROM ORDERS;
		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 largest value from the given data in MySQL?
	   i. MAX( )
	   ii. MAXIMUM( )
	   iii. BIG( )
	   iv. LARGE( )
		1

10.	To display last five rows of a series object **'S'**, you may write:
	   i. S.Head()
	   ii. S.Tail(5)
	   iii. S.Head(5)
	   iv. S.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

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 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.
	  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

	PART B	
19.	Explain the terms Web page and Home Page. **OR** Mention any four networking goals.	2
20.	Rashmi, a database administrator needs to display house wise total number of records of **'Red'** and **'Yellow'** house. She is encountering an error while executing the following query: **SELECT HOUSE, COUNT (*) FROM STUDENT GROUP BY HOUSE WHERE HOUSE='RED' OR HOUSE= 'YELLOW';** 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 12D 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 net etiquettes.	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={'Q1':5000,'Q2':8000,'Q3':12000,'Q4': 18000}
	Year2={'A' :13000,'B':14000,'C':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

	SECTION C	
26.	Write outputs for SQL queries (i) to (iii) which are based on the given table PURCHASE: **TABLE: PURCHASE** | 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 PURCHASE WHERE QUANTITY>100;** ii. **SELECT CNAME FROM PURCHASE WHERE MONTH(DOP)=3;** iii. **SELECT MOD (QUANTITY, DAY(DOP)) FROM PURCHASE WHERE CITY= 'CHANDIGARH';**	3
27.	Write a Python code to create a DataFrame with appropriate column headings from the list given below: **[[101,'Gurman',98],[102,'Rajveer',95],[103,'Samar' ,96],[104,'Yuvraj',88]]**	3
28.	Consider the given DataFrame **'Stock'**: 		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.	Nadar 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 Nadar? ii. What immediate action should she take to handle it? iii. Is there any law in India to handle such issues? Discuss briefly.	3

	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: | 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.	3
	SECTION 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.	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

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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                        ┌─────────────────────────────────────────┐
                        │           MUMBAI CAMPUS                  │
┌──────────────────┐    │                                         │
│ DELHI HEAD OFFICE│    │  ┌─────────────┐    ┌──────────────┐    │
└──────────────────┘    │  │ EXAMINATION │    │   ACCOUNTS   │    │
                        │  └─────────────┘    └──────────────┘    │
                        │  ┌─────────────┐                        │
                        │  │    ADMIN    │         ┌──────────┐   │
                        │  └─────────────┘         │  RESULT  │   │
                        │                          └──────────┘   │
                        └─────────────────────────────────────────┘
```

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	40
RESULT	12
DELHI HEAD OFFICE	20

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

(ii) Suggest and draw cable layout to efficiently connect various 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

33.	Write Python code to plot a bar chart for India's medal tally as shown below:	5
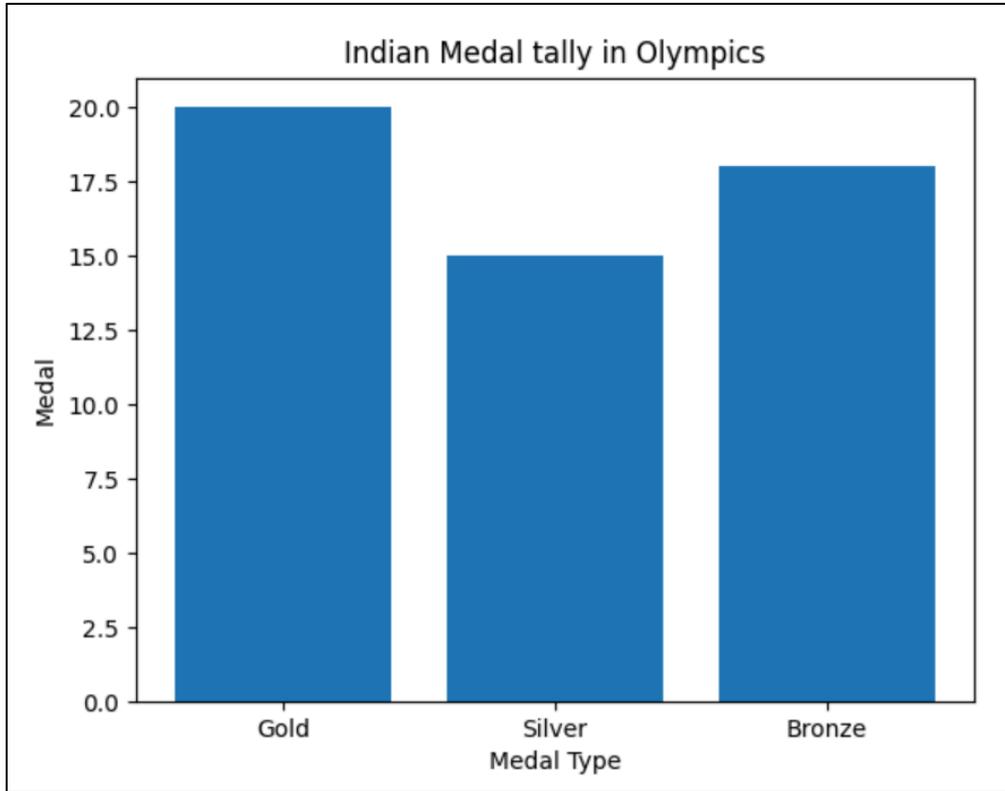
Also give suitable python statement to save this chart.

OR

Write a python program to plot a line chart based on the given data to depict the changing weekly average temperature in Delhi for four weeks.

Week=[1,2,3,4]
Avg_week_temp=[40,42,38,44]

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**	1+1+2

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.

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

		School	Tot_students	Topper	First_Runnerup

35. Mr. Som, 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:

	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

1+1+2

    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 of Tot_students column and First_Runnerup column of the above given DataFrame.