DAV PUBLIC SCHOOLS , CG ZONE
SAMPLE QUESTION PAPER
CLASS XII
INFORMATICS PRACTICES (065)

TIME: 03 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 has 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 02 questions carrying 04 marks each.*
7. *Section E has 03 questions carrying 05 marks each.*
8. *All programming questions are to be answered using Python Language only.*

	SECTION A	

1.	The _____ is a networking device that regenerates or recreates a week signal into its original strength and form.
	     a. Gateway
	     b. Hub
	     c. Repeater
	     d. Bridge
		1

2.	_____ are the attempts by individuals to obtain confidential information from you through an original looking site and URL.
	     a. Spoofing
	     b. Phishing
	     c. Plagiarism
	     d. Trojan
		1

3.	Functional expression of the idea/invention will be protected by ____
	     a. Copyright
	     b. Intellectual Property Right
	     c. Patent
	     d. Trademark
		1

4.	Consider following column of Department table **Salary** **10000** **20000** **Null** **25000** **15000** **30000** What would be the output of the following query? **Select Avg(Salary) from Department;** a. 25000 b. 20000 c. Null d. 16666	1

5.	Which of the following SQL function belongs to math function?
	   a. Sum()
	   b. Round()
	   c. Count()
	   d. Avg()
		1

6.	_____ operating system is an example of FOSS.
	   a. Unix
	   b. Mac
	   c. Windows
	   d. Ubuntu
		1

7.	To export data of a .csv file in a DataFrame ____ function is used.
	   a. to_csv
	   b. read_csv
	   c. csvread
	   d. tocsv
		1

8.	Madhav is a student. He is learning MYSQL.He wants to display the IName and Price of all the items in the ascending order of their Price. He is trying to execute below given query but unable to do so:
	     SELECT INAME FROM ITEM GROUP BY PRICE(ASC);
	Which of the following query is correct to perform the given task:
	   a. SELECT * FROM ITEM GROUP BY PRICE;
	   b. SELECT INAME, PRICE FROM ITEM HAVING PRICE ORDER BY ASC;
	   c. SELECT INAME, PRICE FROM ITEM ORDER BY PRICE;
	   d. SELECT INAME, PRICE FROM ITEM ORDER BY PRICE(ASC);
		1

9.	Predict the output of the following query:
	     SELECT UPPER(LEFT("Informatics Practices", 5));
	   a. TICES
	   b. INFOR
	   c. PRACT
	   d. MATIC
		1

10.	Identify the correct options to select first four rows and second to fourth columns from a DataFrame 'Data'.
	   a. display(Data.iloc[1:5,2:5])
	   b. print(Data.iloc[0:4,1:4])
	   c. print(Data.iloc[1:4,2:4])
	   d. display(Data.iloc[1:4,2:4])
		1

11.	Which SQL statement is used to manipulate data in a database?
	   a. UPDATE
	   b. SAVE
	   c. MODIFY
	   d. ALTER
		1

12.	To get the transpose of a DataFrame DF1, you can write _____.
	   a. DF1.Transpose
	   b. DF1.T
	   c. DF1.Swap
	   d. DF1.Change
		1

13.	Himanshi sets up her own company to sell her own range of clothes on instagram. What type of intellectual property can she use to show that the clothes are made by her company?
	    a. Patent
	    b. Design
	    c. Copyright
	    d. Trademark
		1

14.	The string function that returns the index of the first occurrence of substring is _____ . a. INSERT() b. INSTR() c. INSTRING() d. INFSTR()	1

15.	What is a router?
	    a. A device that connects to a network and direct traffic between devices.
	    b. A device that amplifies and extends a signal over long distances.
	    c. A device that expands the number of ports on a network.
	    d. A device that connects two different types of networks.
		1

16.	What is Intellectual Property Right(IPR)?
	    a. The right to protect one's personal information
	    b. The right to protect one's physical property
	    c. The right to protect one's creative work
	    d. The right to protect one's reputation
		1

17.	**Assertion (A):** A switch is a network device used to connect multiple devices on a network.
	Reason (R): Switches are used to control the flow of data within a network.
	    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
		1

18.	**Assertion(A):** A DataFrame in Pandas can be created from a list of dictionaries.
	Reason(R): A DataFrame in Pandas can only be created from a dictionary of Series.
	    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
		1

	SECTION B	
19.	Explain what is URL and its types with example. OR What is the purpose of a server in a network?	2

20.	Consider the following python code, underline the errors and rewrite the correct code:
	    import Pandas as pd
	    L1={"Name:["Amit", "Ankit", " Sunita"], "Marks": [45, 56, 67]}
	    DF= pd.Dataframe(L1, columns=[" Marks", "Name"], index=[1,2,3])
	    print(D)
		2

21.	Assuming the given text "Informatics Practices Class-XII", write the SQL statements for the following:
	    i) To check whether "ces" is available in the above string or not.
	    ii) To print extract "XII" and print it in lower case.
		2

22.	Predict the output of the given Python code:
	    import pandas as pd
	    S1=pd.Series([2,7,10])
	    print(S1*2)
	    print(S1>2)
		2

23.	What is e-waste? Write any 2 adverse effects of e-waste.	2

24.	Complete the code to get the required output: **28**
	
	      import _____as pd
	      ____ = ____.Series([31,28,31], index=["Jan","Feb","Mar"])
	      print(S1["_____"])
		2

25.	Write the difference between WHERE and HAVING clause.	2
	SECTION C	

26	Given the following relation STUDENT

No	Name	Age	Dept	Dateofadm	Fee	GENDER
1	Pankaj	24	Computer	10/01/97	120	M
2	Shalini	21	History	24/03/98	200	F
3	Sanjay	22	Hindi	12/12/96	300	M
4	Sudha	25	History	01/07/99	400	F
5	Rakesh	22	Hindi	05/09/97	250	M
6	Shakeel	30	History	27/06/98	300	M
7	Surya	34	Computer	25/02/97	210	M
8	Shikha	23	Hindi	31/07/97	200	F

Write SQL commands for the following:

    a.   To show all the information about the students of the History department.

    b.   To count the number of students whose name starts with "S".

    c.   To display the records of department with the maximum fee.

          OR

Predict the output of the following queries based on the relation "STUDENT":

    i)   SELECT RIGHT(NAME,3) FROM STUDENT WHERE DEPT="COMPUTER";

    ii) SELECT SUM(FEE) AS "TOTALFEE" FROM STUDENT WHERE GENDER="M";

    iii) SELECT COUNT(*) FROM STUDENT WHERE AGE>23;

27.	Aman stored his data in the form of a dictionary : {"ROLLNO": [10, 102, 103, 104], "NAME": [" ASHA", "CHARU", " MADHU", " RAHUL"], "MARKS": [75, 78,48,68] } Write the code to create a DataFrame from the above given 2D dictionary.	3

28.	"IT Tech" Company conducts workshops for employees of organizations. The company requires data of workshops that are organised As a database administrator you have decided that:
	
	    Name of the Database: IT Name of the Table: WORKSHOP
	    Attributes of Table 'Workshop' are as follows.
		3

Attributes	Datatypes	Constraints
WSID	Integer	Primary Key
Title	Varchar(50)	Not Null
DayeWS	Date	
Speakers	Integer	

29.	Mohita has been recently transferred in new school in new city but after some time someone started posting demeaning, negative comments on her social media account, she has been receiving many mails frequently from unknown persons , often when she work online she find herself that someone is chasing her . Based upon above incident answer the following questions: a. Mohita is the victim of which type of cyber crime. b. What is identity theft? c. What is the name of the cyber crime in which users are tricked to give login ids and passwords by authentic looking site address? OR What is cyber crime? Differentiate between Phishing and Hacking	3

30.	Consider the following DataFrame "Marks" given below:	3

	Arnab	Ramit	Sam	Riya	Mallika
Maths	90	92	89	81	94
Science	91	81	91	71	95
English	85	86	83	80	90
IP	97	96	88	67	99

Write suitable python statement for the following:
    a. Insert a column "Amit" with values (90,92,95,89).
    b. Delete the column "Riya".
    c. Add marks of Subject " Hindi" having marks as (83, 78,98,86,83).

SECTION D

31.	A school is maintaining a student's record in a database. The table "Club" stores data of students in different clubs:	4

Admno	Name	Grade	Club	Marks	Gender
20150001	Sargam Singh	12	STEM	86	MALE
20110212	Alok Kumar	10	SPACE	75	MALE
20090234	Mohit Gaur	11	SPACE	84	MALE
20130216	Ramil Malik	10	READER	91	MALE
20190227	Tanvi Batra	11	STEM	70	FEMALE
20120200	Nomita Ranjan	12	STEM	64	FEMALE

Write SQL queries for the following:
    a. Display the average Marks secured by each Gender.
    b. Display the minimum Marks secured by the students of Grade 10.
    c. Display the total number of students in each Club where the number of students is more than 10.
    d. Display the maximum and minimum marks secured by each gender.

32.	Sukesh has created a DataFrame "Sales" , which contains the sales of four zones in different months. The DataFrame is shown below:					4

	Jan	Feb	Mar	Apr	May
Zone1	9000	4200	8300	7100	8600
Zone2	9100	4300	8400	7500	8200
Zone3	8900	4400	8200	7200	8300
Zone4	9000	4700	8500	7300	8400

Answer the following questions:
    i) Add a new column TSales which is the sum of all the 05 months.
    ii) Rename the Row Zone4 as "NewZone"
    iii) What will be output of the code:
       a) print(Sales.T)
       b) print(Sales.size)
<div align="center">OR</div>

Write a program to export a csv file "Mydata.csv" stored in D: drive to DataFrame.

33	Write SQL queries for the following:

  a. To round the number 4567.1056 up to 2 decimal placed.
  b. To print the month name from date" 2019-10-10".
  c. To print Square of 8.
  d. To print modulus of 4 to 5.
  e. To find the length of the string "INFORMATICS PRACTICES CLASS-XII".
<div align="center">**OR**</div>

A company " GenX Software" has created the following table "Customer" to store data of his customer.

CNO	CNAME	ADDRESS	AMOUNT
101	RICHA JAIN	DELHI	15000
102	SURBHI SINHA	CHENNAI	20000
103	LISA THOMAS	BANGLORE	30000
104	IMRAN ALI	DELHI	12000
105	ROSHAN SINGH	CHENNAI	17000

Write queries for to perform following task:
    a. To insert a record with following values [106, "Tara Sen", " Banglore", 10000].
    b. To delete the record of CNO - 103.
    c. To add a new column "Transaction no" of suitable datatype.
    d. To display records of all customer names.To diplay records of those customers whose
       address is "Delhi"

34. Quick Learn University is setting up its academic blocks at Prayag Nagar and is planning to set up a network. The University has 3 academic blocks and one Human Resource Center as shown in the diagram below:

Center to Center distance between various blocks/ center is as follows:

Law Block to Business Block	40m
Law Block to technology Block	80m
Law Block to HR center	105m
Business Block to Technology Block	30m
Business Block to HR center	35m
Technology Block to HR center	15m

Number of computers in each of the blocks/center is as follows:

Law Block	15
Technology Block	40
HR center	115
Business Block	25

a. Suggest the most suitable place (i.e. Block/ Center) to install the server of this University with a suitable reason.

b. Suggest an ideal Layout for connecting these blocks/centers for a wired connectivity.

c. Which device will you suggest to be placed/ installed in each of these blocks/centers to efficiently connect all the computers within these blocks/centers.

d. The University is planning to connect its admission office in the closest big city, which is more than 250 Km from university. Which type of network out of LAN, MAN, WAN will be formed ? Justify your answer.

e. Which of the following will you suggest to establish the online face to face communication between the people in the Law Block and HR Center: **E-mail, Chat or VoIP**. Define the suitable option.

5

35 The sales percentage of 12 months are given below:
sales(in %)=[98, 88, 75, 89, 86, 93, 79, 76, 83, 96, 94, 88]
Write a suitable python code to generate a histogram based on the given data along with an appropriate chart title and both axis labels. Also give a suitable python statement to save this chart.

OR

Write Python code to draw the following bar graph representing the total sales each quarter. Add suitable Title, Label for x-axis and y-axis. Use following data for plotting the graph:
sales=["QTR1", "QTR2", "QTR3", "QTR4"]