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.

Section A

1. A web-site is a collection of-   1
     (a) HTML documents   (b) Graphic files
     (c) audio and video files   (d) all the above

2. . Which of the following is not a cyber crime ?   1
   (a) Scam   (b) Phishing
   (c) Child pornography   (d) Down vote a social media post

3. What is an example of e-waste   1
   (a) An old computer   (b) A ripened banana
   (c) Old clothes   (d) Empty soda cans

4. The count() function in MySql is an example of _____.   1
     a. Math function   b. Text function
     c. Date Function   d. Aggregate Function

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?   1
SELECT SUM (Salary) FROM employee;
(a) 20500   (b) 5   (c) 25500   (d) 33500

6. **'F'** in FLOSS stands for:
i.   First   ii. Free   iii. Firm   iv. Freedom

7. Which SQL statement do we use to find out the total number of not null values   present in a row-
"NAME" in a table "EMP"?   1
i. SELECT SUM(*) FROM EMP;
ii. SELECT COUNT (NAME) FROM EMP;
iii. SELECT SUM (NAME) FROM EMP;
iv. SELECT SUM (COUNT(*)) FROM EMP;

8. Which one of the following is not a single row function?   1
i. ROUND()   ii. TRIM()   iii. LEFT()   iv. AVG()

9.Write the output of the following SQL command.   1
     select round(49.88,1);
      a. 49.88   b. 49.8   c. 49.9   d. 50

10. The name "Pandas" is derived from the term: 1

a. Panel Data   b. Panel Series   c. Python Document   d. Panel Data Frame

11. Pandas Series is: 1

a. 2 Dimensional   b. 3 Dimensional   c. 1 Dimensional   d. Multidimensional

12. We can analyse the data in pandas with   1

a. Series   b. Data Frame   c. Both of the above   d. None of the above

13.When you visit a website ,it will open the page set as _____of the website-

a. front page   b. master page   c. home page   d. first page

14. In SQL, which function is used to display serial number of month?   1

a Month ()   b. MonthNumber ()   c. CurrentMonth ()   d.MonthName()

15. A _____ is a unique data trace of a user's activities, actions, communications or transactions in digital media.   1

a. Digital Handprint   b. Digital Footprint

c. Offline Footprint   d. Offline Handprint

16. IPR stands for: 1

a. Intelligent Property Rights   b. Intellectual Property Reserve

c. Intellectual Property Rights   d. Intellectual Product Rights

17.The device that can operate in place of a hub is-   1

a. Switch   b. Bridge   c. Router   d. Gateway

18.Which function will be used to read data from a CSV file into pandas data frame?   1

a. readcsv()   b. to_csv()   c. read_csv()   d. csv_read()

Section B

19. Explain the terms Website and Web address .   2

OR

Mention any four advantages networking.

20. Rashmi, a database administrator needs to display class wise total number of records present in other than class- **'XII'**. She is encountering an error while executing the following query:

SELECT CLASS, COUNT (*) FROM STUDENT GROUP BY CLASS WHERE CLASS!= 'XII';

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 using a dictionary that stores the number of students in each section of class12.

Note: Assume six sections are 12A, 12B,12C1,12C2,12D1 and 12D2 having 40,37,41,39,43,41 students respectively and pandas library has been imported as pd.   **2**

23. As a citizen of India,what advise you should give to others for e-waste disposal   2

OR

Define- Plagiarism, Net etiquettes.

24. What will be the output of the following code: 2

>>>import pandas as pd

>>>A=pd.Series([81,89,34,27,90,45])

>>>print(A.sort_values())

25. What will be the output of the given code?   2

import pandas as pd

s = pd.Series([1,2,3,4,5],

index=['akram','brijesh','charu','deepika','era'])

print(s['charu'])
a. 1
b. 2
c. 3
d. 4

Section C

26. Predict the output of the following queries: 3
i. select left(substr('ICC World Cup 2022',10),4);
ii. select upper(left(''ICC World Cup 2022'',3));
iii. select right(mid('ICC World Cup 2022',-8),4);

27. Write a Python code to create a DataFrame-dfNew with the data given below also write the output of print(dfNew) statement : 3
{'One:[1001,'Barun',1200,'North'],
'Two':[1002,'Bimal',1300,'East'],
'Three':[1003,'Rituriva' ,1100],
'Four':[1004,'Munmi',1400,'West'] }

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

	Name	Marks
0	**Deepjyoti**	**89**
1	**Dishant**	**92**
2	**Rahul**	**96**
3	**Alhina**	**93**
4	**Ankita**	**82**

Write suitable Python statements for the following:
i. Add a column called Result with the following data: ['A','A+','A++','B+'].
ii. Add a new student named 'Aditi' having marks 21 and result-'B+'.
iii. Remove the column Result.

29. Write about- 3
i. Cyber trolls   ii. Copyright   iii. Digital Footprint
                                            oR
What are intellectual property rights? Why should they be protected?

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

Student

Admn	Name	Stream	Optional	Average
1001	Shrishti	Science	CS	90
1002	Ashi	Humanities	Maths	80
1003	Aditya	Commerce	IP	60
1004	Ritu Raj	Science	IP	65
1005	Sonali	Commerce	Maths	60
1006	Saumya	Science	IP	65

i. Display stream wise highest average marks.
ii. Display lowest average marks of each optional subject.

iii. Display total number of students in each stream

OR

Define single row functions. Write the differences between single row function and aggregate function with example.

SECTION D

31.Write suitable SQL query for the following: 5

i. Display 5 characters extracted from 5th left character onwards from the string 'Milkybar 10 prices '.

ii. Display the position of occurrence of string '10' in the string 'Milkybar 10 prices'.

iii. Round off the value 76.8967 to before one decimal place.

iv. Display the remainder of 987 divided by 6.

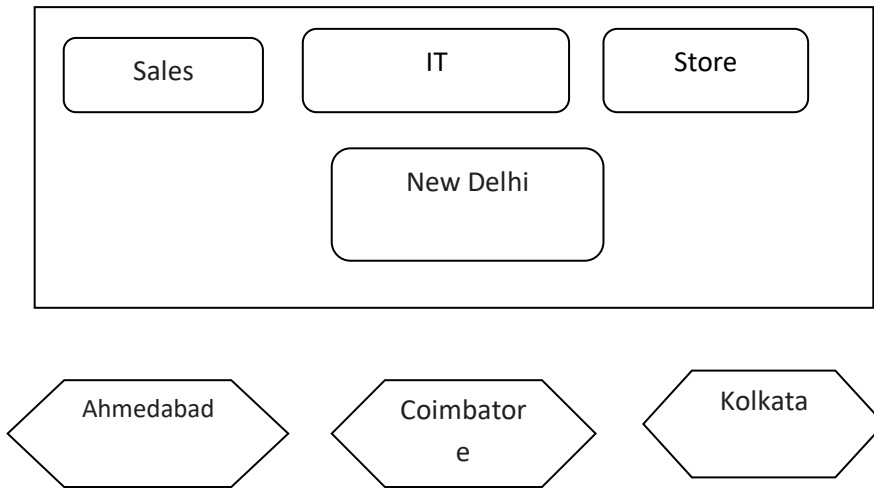v. Remove all the expected leading trailing spaces from a column -Name of the table **'Student'**.

OR

Explain the following SQL functions using suitable examples.

i. MONTH()   ii. RTRIM()   iii.LEFT()   iv. LENGTH()   v.DATE()

32. Superfast Courier Company is planning to start their regional offices in four major cities in India—

"Coimbatore","Kolkata" and "Ahmedabad"—to provide easy and fast courier services in different cities.

The company has their head office in New Delhi with three different branches—"Sales Office", "Store

Office" and "IToffice". A rough layout of the same is as follows: 5

Approximate distance between these offices is as follows:

Head Office – Sales Office	10KM
Head Office – IT Office	50KM
Head Office – Store House	25KM
Head Office – Kolkata Office	1536KM
Head Office – Ahmedabad Office	947KM
Head Office – Coimbatore Office	2508KM

The company experts have planned to install the following number of computers in each of their offices:

Head Office	100
IT Office	25
Store House	60
Kolkata Office	80
Ahmedabad Office	120
Coimbatore Office	150

(i) Suggest network type (out of LAN, MAN, WAN) for connecting each of the following sets of their offices:
(a) Head Office and IT Office   (b) Head Office and Coimbatore Office
(ii) Which device you will suggest the company to procure for connecting all the computers with each of their offices out of the following devices?
(a) Modem   (b Telephone)   (c) Switch/Hub
(iii) Which of the following communication medium will you suggest for connecting their local offices in New Delhi for very effective and fast communication?
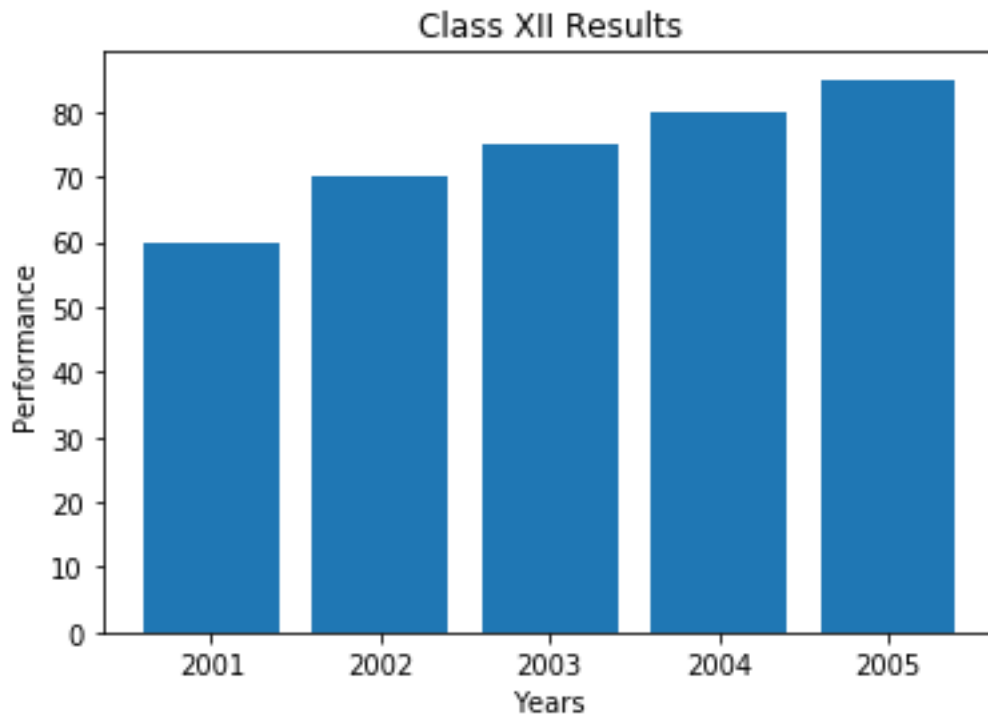(a) Ethernet Cable   (b) Optical Fibre   (c) Telephone Cable
(iv) Suggest a cable layout for connecting the company's local offices located in New Delhi.
(v) Suggest an effective and fast method/technology for connecting the company's regional offices—"Kolkata", Coimbatore", "Ahmedabad".
33. Write the python code to draw following bar graph representing the number of students in each class.   5

Class XII Results

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. Use different colours for each bar.

Sample data:
Class: I,II,III,IV,V,VI,VII,VIII,IX,X
Strength: 38,30,45,49,37,53,48,44,36,46

34.Consider a table Teacher that contains the following data: 4

EmpNo	FName	LName	Subject	Qualification	Salary	Post
1	Sandeep	Verma	S.St.	B.Ed	25409.789	TGT
2	Sonia	Kumari	Computer	BCA	21200.456	TGT
3	Nirmal	Sharma	Hindi	B.Ed	38274.657	PGT
4	Sanjeev	Shastri	Sanskrit	B.Ed.	28782.228	TGT
5	Rakesh	Sharma	English	B.Ed.	32892.487	PGT

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

(i) To display Teacher's first name where 'ee' occurs in the first name.

(ii) To join First Name and Last name of the teachers without some space in between.

(iii) To display contents of "Qualification" field in small letters.

(iv) To display first 2 characters of the "Subject" field.

OR (Option for part iv only)

To round off the salary to the nearest integer.

35. Write a program in Python Pandas to create the following DataFrame- df1 from list of Dictionaries :

4

```
     x   y    z
0  10  20.0  NaN
1  50  40.0  50.0
2  70  NaN   90.0
```

Perform the following operations on the DataFrame :

A. Predict the output of the following python statement:

i. df1.shape

ii. df1[0:3]

iii. Write Python statement to display the data of Y column for all indexes.