BUDHA DAL PUBLIC SCHOOL, PATIALA
PRE BOARD EXAMINATION (6 January 2024)
CLASS XII SUBJECT INFORMATICS PRACTICES (065)

M.M:70

TIME:03 HOURS

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.	For communication, data in a network is divided into smaller chunks called i. Small data ii. Parcel iii. Packets iv. fragments	1
2.	Which of the following is/are examples of cyber crime ? i. Extracting money from using a person's net banking details. ii. Posting child pornographic material. iii. Taking Online payment and not delivering goods. iv. All of the above	1
3.	_____ is an attempt where a hacker tries to divert network traffic to a bogus site. i. Phishing scams ii. Spoofing iii. Eavesdropping iv. Pharming attack.	1
4.	Predict the output of the following query: SELECT ROUND (52.77); i. 52.77 ii. 52 iii. 53 iv. 52.7	1

	Which of the following is true for the HAVING clause ? (a) Acts like a WHERE clause on groups of rows rather than individual rows. (b) Acts like a WHERE clause on rows rather than columns (c) Acts like a WHERE clause on columns rather than groups (d) Acts EXACTLY like a WHERE clause	1
6.	Which of the following software types are 'free' in monetary terms ? i. Proprietry Software ii. Shareware iii.FOSS iv. Malware	1
7.	A CSV file can take _____ character as separator. i. , ii. – iii. \t iv. All of the above	1
8.	If column "AVERAGE" contains the data set (67,87,65,67,87), what will be the output after execution of the given query? SELECT DISTINCT (MARKS) FROM STUDENTS; (i) 67,87,65,67,87 (ii) 87,67 (ii) 67,85 (iv) 67,87,65	1
9.	Which of the following is not a DDL command ? i. SELECT ii. CREATE iii. INSERT iv. UPDATE	1
10.	To get the number of elements in a series object, _____ attribute may be used. i.inde ii. size iii. itemsize iv.ndim	1
11.	Which operator performs pattern matching ? i. LIKE operator ii. EXISTS operator iii. BETWEEN operator iv. ALL OF THE ABOVE	1
12.	To check if the series object contains NaN values, _____attribute is displayed. i.dtype ii.ndim	1

	iii.hasnanas iv.nbytes	
13.	The digital trail which gets created as a person's Internet usage using computers, smartphones, gaming consoles etc. is called _____ i. Internet data ii. Internet trail iii. e-footprint iv. Digital footprint	1
14.	Logical operators used in SQL are : i. AND, OR, && ii. AND, OR, NOT iii. &&, %% iv. None of these	1
15.	Which of the following refers to a service that allows individuals and organizations to make their websites accessible on the internet? A) Domain registration B) File sharing C) Web hosting D) Social media marketing	1
16.	Preetika received an email warning her of closure of her bank accounts if she did not update her banking information on urgent basics. She clicked the link in the email and entered her banking information. Then , she got to know was 'she was duped'. This is an example of i. Online fraud ii. Plagiarism iii. Identity theft iv. Phishing	1

17.	**Assertion (A):-** A Gateway is a device that connects dissimilar networks.
	Reasoning (R): -By translating data between different protocols and formats, enabling seamless communication. .
	   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
		1

18.	**Assertion (A):-** Series stores data row wise
	Reasoning (R): - A Series is a one – dimensional labeled data structure
	   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
		1

	SECTION B	
19.	Differentiate between IP address and MAC address. **OR**	2

	Write any one advantage and one disadvantage of Bus topology ?	

20.	Predict the output of the following Python codes :
	
	``python
	import pandas as pd
	s = pd.Series(121, index = ['a','b','c','d'])
	df=pd.DataFrame(s)
	print(df)
	``
		2

21.	i. What will the SELECT DISTINCT command do ? ii. Explain EQUI joins .	2

22.	Predict the output of the given Python code:
	
	``python
	import pandas as pd
	L1=[10,12,14,16,18]
	S1=pd.Series(data=L1)
	print(S1[3:])
	print(S1[1:3])
	``
		2

23.	Differentiate between freeware and Shareware.	2
24.	Write a Python code to assign five data values and indices as per the specifications given below: **Indices data** M 4200 N 8500 O 12000 P 15000 Q 17000 Display the Series elements after re-indexing its data as [X,Y,Z,P,Q] correspondingly.	2
25.	What is the difference between PRIMARY KEY and UNIQUE constraints ?	2

SECTION C

26.	Consider the following table EMPLOYEE. Write SQL commands for the following statements: TABLE : EMPLOYEE	3

E_ID	NAME	DESIG	SALARY	DOJ
E01	amitesh	manager	40000	23-mar-2003
E02	balraj	clerk	25000	14-apr-1998
E03	Najakat	clerk	25000	19-may-2003
E04	Partistha	receptionist	12000	03-mar-2007

1. To display the average salary.
2. To display all the records in the descending order of DOJ
3. To display the name of employee who is getting least salary.

27.	Aman is creating a DataFrame in Python from the given list. Help him to create	3

dataframe with following information :

[['Aman','sales',49000],['Jashan','HR',36000],['Pawan','sales',34500],
['kunal','marketing',26000]]

Also give appropriate column headings as shown below:

	NAME	DEPARTMENT	SALARY
0	AMAN	SALES	49000
1	JASHAN	HR	36000
2	PAWAN	SALES	34500
3	KUNAL	MARKETING	26000

28. Write MySQL statements for the following: 1+2

    i. To create a database named STUDENT.

    ii. To create a table named REPORT_CARD based on the following
       specification:

Column Name	Data Type	Constraints
ID	INTEGER	PRIMARY KEY
NAME	VARCHAR()	
CLASS	INTEGER	NOT NULL
MARKS	INTEGER	NOT NULL
PERCENTAGE	INTEGER	NOT NULL

29. Anu has recently shifted to a new city and joined new college .She has no friends   3
there. There she was trapped in social issues and someone starts posting negative
comments on her social networking profile, college site's forum, etc. She also
starts getting repeated mails from unknown people .Every time she goes online,
she finds someone chasing her online

(i) What is all this happening to Anu?

(a) Anu has become a victim of cyber bullying and cyber stalking

(b) Eaves dropping

(c) Scam

(d) Violation of IPR

(ii) What action should be taken by her to stop all this?

(a) Discuss with her parents

(b) Discuss in peer group

(c) Keep quiet and suffer emotionally

(d) She must immediately bring all this to the notice of her parents and school
authorities and also report this to the cybercrime wing of the local police with the
help of her parents.

(iii) A set of moral principals that govern the behavior of a group or individual
and regulates the use of computers.

a. Privacy law

b. Computer ethics

c. Property rights

d. Copyright

               OR

Describe following Cyber crimes: (a) Cyber Bullying (b) Cyber Stalking

30. Given a dataframe df as shown below:

	A	B	D
0	25	18	09
1	17	19	10
2	10	20	12

What will be the result of the following code statements ?
(a) df ['C'] = np.NaN
(b) df['C'] = [2,5]
(c) df['C'] = [12,15,27]

| | | | | 3 |

SECTION D

31. Ratish manages database of table SPORTS, Help him in record keeping in table RECORDS. Help him to clear his queries :

Table : SPORTS

SNO	GAME	SNAME	CLASS	DOB
S1	CHESS	RAHUL	12	2001-12-25
S2	CHESS	VISHAL	10	2003-11-10
S3	BADMINTON	PRATIBHA	12	2001-05-09
S4	SWIMMING	RITESH	11	2000-10-12
S5	SWIMMING	MEENU	10	2003-10-08

i. To display distinct games of participants.
SELECT DISTINCT GAMES FROM SPORTS
ii. To display name of the month from DOB .
iii. To display all sname and games in lower case.
iv. To display all the records of players who are playing chess.

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32. What is the output of the following code ?
```
data={'age':[20,23,22], 'name':['Ruby','abhi','sumit']}
df1=pd.DataFrame(data, index=[1,2,3] )
print("before")
print(df1)
df1['edu']=['BA','BE','MBA']
print('After')
print(df1)
```

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SECTION E

33. Write suitable SQL queries for the following:
   i. To calculate the remainder of -10 when it is divided by 3 using MODULUS.
   ii. Write a query to extract a substring from the string 'Pythagoras' which should be 6 characters long and starts from 5th character of the given string.
   SELECT SUBSTRING/MID('PYTHAGORAS',5,6);
   iii. Display the position occurrence of string 'MA' in the string 'MAHATAMA'SELECT INSTR('MAHATAMA','MA');
   iv. Write a query to display day from the date 14-Jan-2020 SELECT DAY('2020-01-14');
   v. Write a query to remove all leading spaces from the string' HAPPY LIFE '.SELECT TRIM('HAPPY LIFE');

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OR

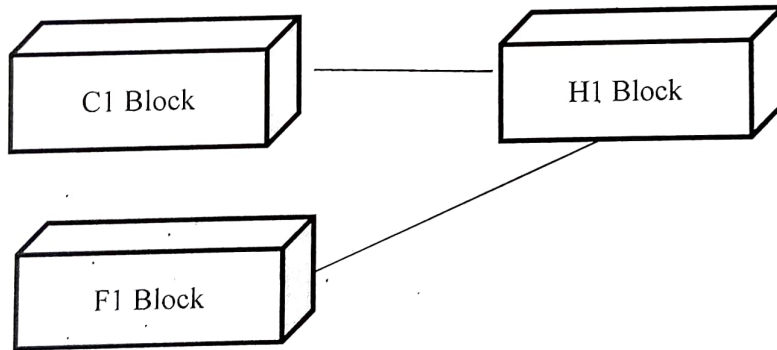Vinod has created a table 'FACULTY' to keep the records of all departments, but he has few queries to solve:

ID	NAME	AGE	SEX	DEPARTMENT	Joining_date	salary
T01	Amrita	45	F	COMMERCE	01/03/80	45000
T02	Aditya	56	M	SPORTS	05/08/79	55780
T03	Rakesh	34	M	MATHS	01/05/85	35000
T04	Shyam	54	M	HISTORY	07/07/98	49000
T05	Shiva	34	M	COMPUTER	06/09/79	63700
T06	Sangeet	28	F	MATHS	23/08/99	45500

i. To display the list of all teachers with their date of joining in ascending order.

ii. To count the number of teachers with age > 42

iii. To insert a new row in the FACULTY table with the following data:
   'T07','Madhumita',34,'f','Computer', '08/06/99',47800;

iv. To display name, age, salary of all male staff.

v. To ADD a new column 'Phone'

34.

5

HIMANI herbal Corporation is a professional consultancy company. The company is planning to set up new offices in India with its hub at Hyderabad.

As a network adviser, you have to understand their requirements and suggest to them the best available solutions.

Block to Block Distance :

Block (From)	Block (To)	Distance
H1	C1	75 m
H1	F1	75 m
C1	F1	135 m

Expected number of computers to be installed in each block:

Block	Computers
H1	75
C1	15
F1	50

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

(b) Draw a block-to-block cable layout to connect all the buildings in the most appropriate manner for efficient communication

(c) What will be the best possible connectivity out of the following to connect the new office in Bengaluru with its London office?
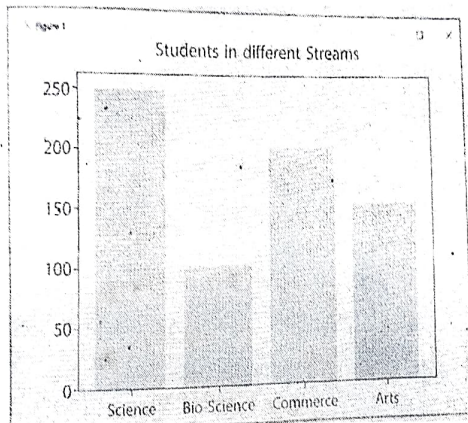(i) Infrared (ii) Satellite Link (iii) Ethernet Cable

(d) Which of the following devices will you suggest to connect each computer in each of the above buildings
(i) Gateway (ii) Modem (iii) Switch

(e) Write names of any two popular Open Source Software which are used as Operating Systems.

35.	The following Bar graph represents the number of students who took admission in various streams in Class IX.	5

Students in different Streams

Now, write the code in Python to produce the above plot with all necessary information.

OR

A joint family consists of 20 family members. A list is created to keep the record of their ages. Plot a histogram from a given data.

Age = [10,12,24,18,27,32,14,22,27,,28,36,25,38,12,20,41,42,45,38,42]