

PreBoard Exam (2023-24)

Class : XII
Subject : Informatics Practices (065)

M.M. : 70
Time Allowed: 3 Hrs.

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 data of any CSV file can be shown in which of the following software. 1
 1. MS-Word 3. Notepad
 2. Spreadsheet 4. All of these
2. Loomi is a young woman with great aspirations and has a good team of like-minded people. She along with her team members started a company to sell handicrafts online and also designed a Logo for their company. What type of Intellectual property does this Logo represent? 1
 1. Patents 3. Design
 2. Copyright 4. Trademark
3. Cyber criminals can use deepfake technology to create scams, false claims and hoaxes that undermine and destabilize organizations. Which type of cybercrime is it? 1
 1. Phishing 3. Hacking
 2. Cyber Bulling 4. Identity Theft
4. Write the output: SELECT CHAR(70, 65, 67, 69); 1
 1. ASLL 3. FACE
 2. ACEF 4. CEAT
5. Aggregate Functions are also known as _____. 1
 1. Scalar Functions 3. Single Row Functions
 2. Hybrid Functions 4. Multiple Row Functions
6. _____ is an approach to web design that aims to make web pages render well on a variety of devices and window or screen sizes from minimum to maximum display size to ensure usability and satisfaction. 1
 1. Static design 3. User design
 2. Responsive design 4. None of these
7. Find the output of the following SQL statement: 1

SELECT RIGHT("Designation",6);

 1. nati 3. tion
 2. ation 4. nation

8. Which is not an example of DML statement 1
1. Alter
 2. Delete
 3. Update
 4. Insert into
9. If column "Point" contains the data set (5, 8, 7, 7, 5, 8), what will be the output after the execution of the given query? 1
- SELECT MAX (DISTINCT Point) from SCHOOL;**
1. 5
 2. 8
 3. 7
 4. Error
10. Which Pandas Object cannot grow in size? 1
1. Series
 2. Panel
 3. DataFrame
 4. None of these
11. To suppress first row as header, which of the following arguments is to be given in read_csv() ? 1
1. noheader = True
 2. skipheader = True
 3. header = None
 4. header - Null
12. A _____ graph is a type of chart which displays information as a series of data points connected by straight line segments. 1
1. Line
 2. Pie
 3. Bar
 4. boxplot
13. Which of the following is not a network device? 1
1. Switch
 2. Mesh
 3. Repeater
 4. Router
14. What will be the output of the following SQL statement: 1
- SELECT SUBSTR ("COMPUTER", 3, 4);**
1. MPUT
 2. PU
 3. PUTE
 4. MP
15. In SQL, the equivalent of UCASE() is: 1
1. UPPERCASE ()
 2. UPPER()
 3. CAPITALCASE()
 4. TITLE ()
16. _____ is a non-profit organization that aims to build a publicly accessible global platform where a range of creative and academic work is shared freely. 1
1. Creative Cost
 2. Creative Common
 3. Critical Commons
 4. Creative Commons

Q17 and Q18 are ASSERTION(A) and REASONING(R) based questions.

Mark the correct choice as

1. Both A and R are true and R is the correct explanation for A
2. Both A and R are true and R is not the correct explanation for A

3. A is True but R is False
4. A is false but R is True

17. Assertion (A):- MODEM stands for modulator-demodulator.

Reasoning (R): - It is a computer hardware device that converts data from a digital format to analog and vice versa. 1

18. Assertion (A):- To use the Pandas library in a Python program, one must import it. 1

Reasoning (R): - The only alias name that can be used with the Pandas library is pd.

SECTION - B

19. What is a Web Server? Give example of web server software's. 2

OR

What do you understand by the term cookies? Give any two benefits of cookies.

20. Write the output of the following SQL queries: 2

(a) SELECT POW(INSTR('My_Database','_'),2);

(b) Is NULL and 0(zero) same? Jusify your answer

21. Consider the table 'Teacher' given below: 2

TeacherId	Department	Periods
T101	SCIENCE	32
T102	NULL	30
T103	MATHEMATICS	34

What will be the output of the following queries on the basis of the above table?

(i)Select count(Department) from Teacher;

(ii)Select count(*) from Teacher;

22. Write python statements to create a dataframe for the following data. 2

Name	Age	Designation
RAJIV	20	CLERK
SAMEER	35	MANAGER
KAPIL	45	ACCOUNTANT

23. Arshi, is a student of class VIII, and seldom browses internet. Recently, she came across terms like plug-ins and add-ons. As a senior, explain the difference between Plug-ins and add-ons to her. 2

24. Predict the output of the given Python code: 2

```
import pandas as pd
list1=[-10,-20,-30]
ser = pd.Series(list1*2)
print(ser)
```

25. Consider the following SQL string "**ROCK PAPER SCISSORS**". 2

Write the SQL commands to display:

1. First four letters from left side of the string
2. Last 4 letters from right side of the string

OR

- a. To find the position of PAPER in the string
- b. To find the total number of characters in the string.

SECTION - C

26. MySQL Consider the tables given below which are linked with each other and maintains referential integrity: 3

Table: SAP

SAPID	ItemCode	ItemName	ItemStorageLocation
S1001	1001	Receiver	W12-B3-R24
S1002	1002	Transponder	W13-B7-R87
S1003	1003	Battery Bank	W21-B1-R87
S1004	1004	Inverter	W21-B11-R2
S1005	1005	Genset	W22-B15-R16

Table : Store

StoreID	ItemCode	StoreLocation	ReceivedDate
1201	1001	Hauz Khas	2016/05/20
1202	1002	Rajouri Garden	2016/06/14
1203	1003	Rohini	2016/05/06
1204	1004	Hauz Khaas	2016/07/15
1205	1005	Rajendra Place	2016/05/27

With reference to the above given tables, write commands in SQL for (i) and (ii) and output for (iii) below:

- i. To display the ItemCode, ItemName and ReceivedDate of all the items .
- ii. To display SAPID,ItemName,ItemStorageLocation of all the items whose Received date is after 2nd May 2016.
- iii. SELECT SAPID,ItemName,STOREID FROM SAP,Store WHERE
SAP.ItemCode=Store.ItemCode AND StoreLocation = "Hauz Khas";

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:

3

- 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.

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. 3

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

OR

Mention any three health hazards associated with inappropriate and excessive use of gadgets.

30. Consider the given DataFrame 'Genre':

	Type	Code
0	Fiction	F
1	Non Fiction	NF
2	Drama	D
3	Poetry	P

Write suitable Python statements for the following:

3

- Add a column called Num_Copies with the following data: [300,290,450,760].
- Add a new genre of type 'Folk Tale' having code as "FT" and 600 number of copies.
- Rename the column 'Code' to 'Book_Code'.

SECTION - D

31. 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

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

- Write a query to display cloth names in lower case. 1
- Write a query to display the lowest price of the cloths. 1
- Write a query to count total number of cloths purchased of medium size. 2

OR (Option for part iii only)

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

32. 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

A. Predict the output of the following python statement: 2

i. df.shape

ii. df[2:4]

B. Write Python statement to display the data of Topper column of indexes CO2 to CO4. 2

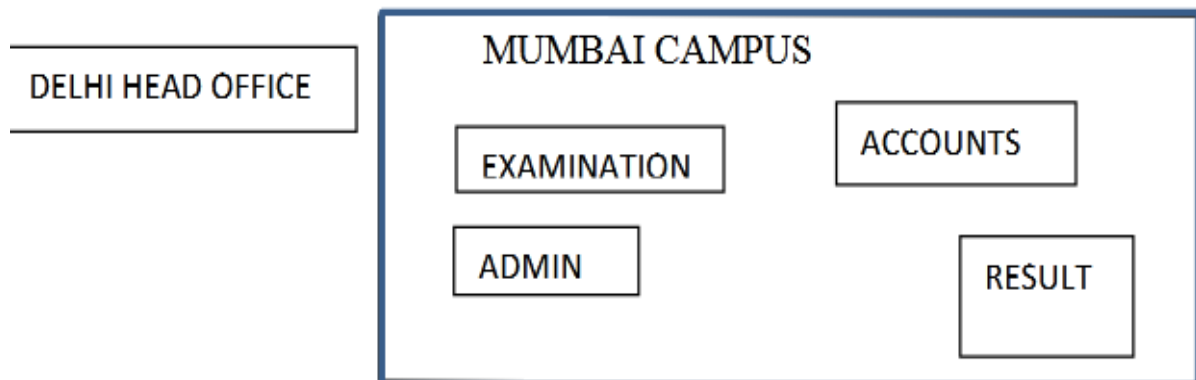
OR (Option for part iii only)

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

SECTION - E

33. 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.

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	40

RESULT	12
DELHI HEAD OFFICE	20

Based on above data answer the following:

5

- (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

34. Write suitable SQL query for the following:

5

- 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()

35. The heights of 10 students of eighth grade are given below:

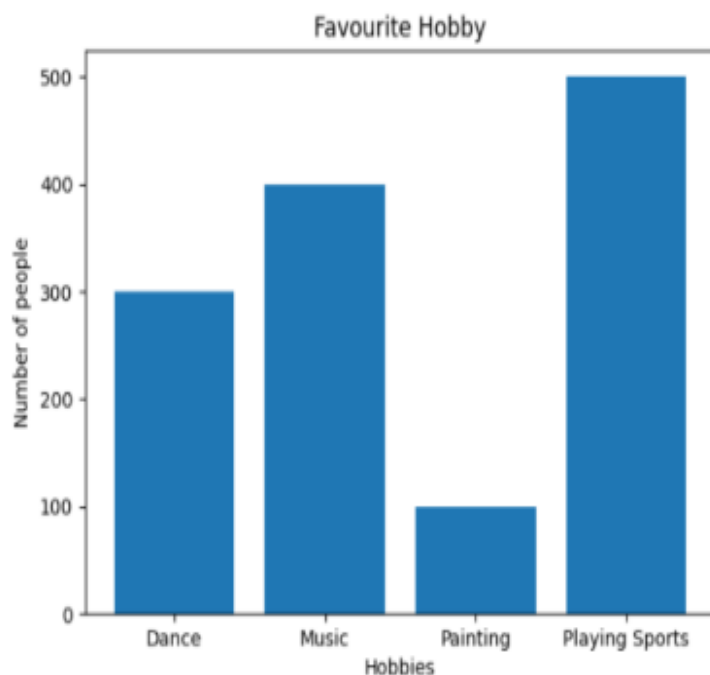
5

Height_cms=[145,141,142,142,143,144,141,140,143,144]

Write suitable Python code to generate a histogram based on the given data, along with an appropriate chart title and both axis labels. Also give suitable python statement to save this chart.

OR

Write suitable Python code to create 'Favourite Hobby' Bar Chart as shown below:



Also give suitable python statement to save this chart.
