PRINCE ACADEMY
OF HIGHER EDUCATION
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BOARD SAMPLE PAPER - III (2025-26)

CLASS – XII (INFORMATIC PRACTICES)

Time : 03 : 00 Hours **M.M. : 70**

General Instructions :

1. 15- minute prior reading time allotted for Q-paper reading.

2. This question paper contains five sections, Section A to E.

3. All questions are compulsory.

4. Section A have 21 questions carrying 01 mark each.

5. Section B has 07 Very Short Answer type questions carrying 02 marks each.

6. Section C has 04 Short Answer type questions carrying 03 marks each.

7. Section D has 02 Long Answer type questions carrying 04 marks each.

8. Section E has 03 questions carrying 05 marks each.

9. All programming questions are to be answered using Python Language only.

SECTION- A (21×1 = 21)

1. In a dataframe, axis = 0 is for
   (a) Columns
   (b) Rows
   (c) Rows and Columns both
   (d) None of these

2. Which of the following are DDL commands?
   (A) Delete
   (B) Create
   (C) Update
   (D) Alter
   (a) (B) and (D)
   (b) (A) and (B)
   (c) (B) and (C)
   (d) (A) and (C)

3. Which of the following can be used to specify the data while creating a dataframe?
   (a) Series
   (b) List of Dictionaries
   (c) Structured ndarray
   (d) All of these

4. Which values will not be considered by SQL while executing the following statement?
   SELECT COUNT(column name) FROM DEPARTMENT;
   (a) Numeric value
   (b) Text value
   (c) Null value
   (d) Date value

5. If column "Marks" contains the data set {25, 35, 25, 35, 38}, what will be the output after the execution of the given query?
   SELECT DISTINCT(MARKS) FROM STUDENTS;
   (a) 25, 35, 25, 35, 38
   (b) 25, 25, 35, 35, 38
   (c) 25, 35, 38
   (d) 25, 25, 35, 35

6. What SQL statement do we use to find the total number of records present in the table Product?
   (a) SELECT * FROM PRODUCT;
   (b) SELECT COUNT(*) FROM PRODUCT;
   (c) SELECT FIND(*) FROM PRODUCT;
   (d) SELECT SUM() FROM PRODUCT;

7. In which topology are all the nodes connected through a single Coaxial cable?
   (a) Star
   (b) Tree
   (c) Bus
   (d) Ring

8. For web pages where information is changed frequently, e.g., stock prices, weather information, which out of the following options would you opt for?
   (a) Static web page   (b) Dynamic web page   (c) Animated web page   (d) None of these

9. .... is a communication methodology designed to deliver both voice and multimedia communications over Internet Protocol.
   (a) VoIP   (b) SMTP   (c) PPP   (d) HTTP

10. Intellectual Property Rights protect the use of information and ideas that are of:
    (a) Ethical value   (b) Moral value   (c) Social value   (d) Commercial value

11. Which of the following is an open-source software?
    (a) Microsoft Windows   (b) Adobe Photoshop   (c) MySQL   (d) MS PowerPoint

12. Which of the following commands is used to import Matplotlib for coding?
    (a) import plt.matplotlib as plot
    (b) import plot.matplotlib as pt
    (c) import matplotlib.plt as plot
    (d) import matplotlib.pyplot as plt

13. Which of the following plots makes it easy to visualize a trend in data over intervals of time.
    (a) Box plot   (b) Histogram   (c) Line Chart   (d) Bar chart

14. Which attribute of dataframe is used to retrieve its shape?
    (a) T   (b) Ndim   (c) Empty   (d) Shape

15. Consider a table Student having two fields-FName varchar (20) and LName char(20). If in a record, value stored in Fname is 'Anuj' and LName is 'Batra', thenFName and LName will consume .... and .... character space respectively.
    (a) 4, 5   (b) 4, 20   (c) 20, 4   (d) 20, 20

16. Which of the following clauses is used to sort the result set?
    (a) SORT BY   (b) GROUP BY   (c) ARRANGE BY   (d) ORDER BY

17. Which of the following functions is not an aggregate function?
    (a) ROUND()   (b) SUM()   (c) COUNT()   (d) AVG()

18. Which clause in SQL is used to apply a condition on a group?
    (a) Where   (b) Having   (c) As   (d) On

19. Which of the following is not a type of a cyber crime?
    (a) Data theft   (b) Forgery
    (c) Damage to data   (d) Installing antivirus for protection

20. **Assertion (A):** VoIP stands for Voice over Internet Protocol.
    Reasoning (R): VoIP is a technology that allows you to make voice calls using a broadband connection instead of a regular phone line.
    (a) Both A and R are true and R is the correct explanation of A.
    (b) Both A and R are true but R is not the correct explanation of A.
    (c) A is true but R is false.
    (d) A is false but R is true.

21. **Assertion (A):** Dataframe has both a row and column index.
    Reasoning (R): Dataframe is a two-dimensional labelled data structure like a table of MySQL.
    (a) Both A and R are true and R is the correct explanation of A.
    (b) Both A and R are true but R is not the correct explanation of A.
    (c) A is true but R is false.
    (d) A is false but R is true.

Section- B (7×2=14)

22. How can we create CSV file? Explain with steps.

OR

Write a Python program to draw a line chart with a suitable label in the X-axis and Y-axis, and a title.

23. What is plagiarism? What should we do to avoid plagiarism in our article?

24. Consider the string:" School Management System". Write suitable SQL queries for the following:

I. To extract and display" System" from the string.

II. Display the position of the first occurrence of "Manage" in the given string.

25. What are network topologies? Explain any two network topology.

26. State the difference between count() and count(*) in SQL.

27. Mention two precautions that we need with excessive use of Digital Devices.

28. (A) Rohit is writing a Python program to create a Series using ndarray. However, his code contains some mistakes. Identify the errors, rewrite the correct code, and underline the corrections made.

```
Import pandas as pd
data=np.array(['a', 'b', 'c', 'd', 'e', 'f'])
s=pd.Series (data, index=[100, 101, 102, 103, 104, 105])
print(s[101,103,104])
```

OR

(B)Complete the given Python code to get the required output (ignore the dtype attribute) as

Output:

Cricket	Jaipur
Hockey	Kota
Chess	Manipur

Code:

```
import_____aspd
data = ['Jaipur', '_____,'Manipur']
game=['Cricket','Hockey','Chess']
 S = pd.Series(_____,index=_____)
print(S)
```

Section- C (5×3=15)

29. Riya creates a fake social media account using her classmate's photo and posts embarrassing comments. The posts spread quickly, and the classmate feels distressed and avoids school. Riya claims it was "just a joke".

1. Name the unethical practice shown in the case.

2. State **one possible impact** of such behavior on the victim.

3. Mention **one responsible behavior** users should follow on social media.

30. (A) Write a Python program to create the following Data Frame using a list of dictionaries.

	Product	Price
0	Cooler	4000
1	Fan	3500
2	Table	5000
3	Television	3800

(B) Write a Python Program to create a Pandas Series as shown below using a numpy (ndarray).

Note that the left column indicates the indices and the right column displays the data.

Monalisa	Russia
Cristina	Africa
Jemmy	Europe

31. I. Write an SQL statement to create a table named **HOSPITAL**, with the following specifications:

ColumnName	DataType	Key
Patient_Id	Numeric	PrimaryKey
Pname	Varchar(13)	
City	Varchar(18)	NOT NULL
Date_of_adm	Date	
Charges	Float(8,2)	

II. Write SQL Query to insert the following data in the HOSPITAL Table 101, Bhumi Saini, Jaipur, 2021-08-11,1530.17.

32. Consider the given table Faculty and answer the questions that follow:

Table: FACULTY

F_ID	F_Name	L_Name	Hire_date	Salary
102	Amit	Mishra	10/12/1998	10000
103	Nitin	Vyas	12/24/1994	8000
104	Rakshit	Soni	5/18/2001	14000
105	Rashmi	Malhotra	9/11/2004	11000
106	Sulekha	Srivastava	6/5/2006	10000

(a) To display the details of those Faculty members whose salary is higher than 12000.

(b) Display details of those faculty members whose names start with S.

(c) Display all records in descending order of Hire date.

SECTION- D (2×4=8)

33. Consider the table RESULT given below.

Table: RESULT

No	Name	Stipend	Subject	Average	Division
1	Sharon	400	English	38	THIRD
2	Amal	680	Mathematics	72	FIRST
3	Vedant	500	History	67	FIRST
4	Shakeer	200	Informatics	55	SECOND
5	Anandha	400	History	85	FIRST
6	Upasna	550	Geography	45	THIRD

(a) To list the names of those students who have obtained Division as FIRST in the ascending order of NAME.

(b) To insert a new row in the table RESULT: 7, "Mohan", 500, "English", 73, "Second"

(c) To display subject wise Name of students in Result table.

(d) To display the total stipend in Result table.

OR

SELECT COUNT(DISTINCT Subject) FROM RESULT;

34. During a practical exam, a student Ananya has to fill in the blanks in a Python program that generates a **line chart**. This chart represents the **monthly sales (in units)** of a shop over five months.

Month	Sales
Jan	40
Feb	55
Mar	30
Apr	65
May	50

Help Ananya to complete the code.

```
import _____ as plt    # Statement-1
months = ['Jan', 'Feb', 'Mar', 'Apr', 'May']
sales = [40, 55, 30, 65, 50]
plt.plot(months, _____, marker='o')   # Statement-2
plt.xlabel('Month')
plt._____('Sales in Units')        # Statement-3
plt._____('Growth details')         # Statement-4
plt.show()
```

I. Write the suitable code for the import statement in Statement-1.

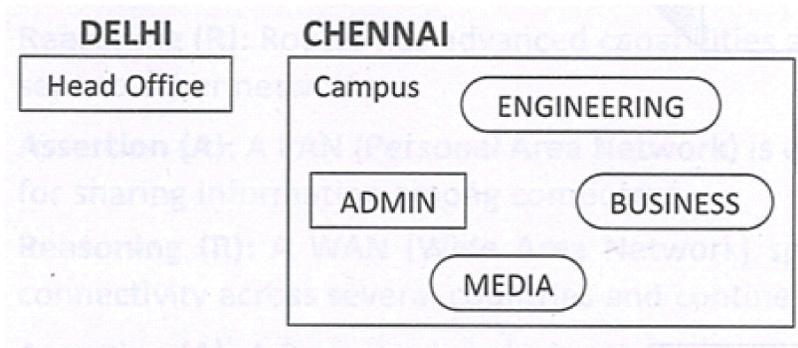II. Fill in the blank in Statement-2 with suitable Python code.

III. Write the function name to label the y-axis in Statement-3.

IV. Write a suitable command for the title in chart in Statement-4.

SECTION- E (5×3=15)

35. Perfect Edu. Services Ltd. is an educational organization. It is planning to set up its India campus at Chennai with its head office at Delhi. The Chennai campus has four main buildings—ADMIN, ENGINEERING, BUSINESS and MEDIA.

You, as a network expert, have to suggest the best network-related solutions for their problems raised in (a) to (e), keeping in mind the distances between the buildings and other given parameters.

Shortest distance between various buildings:

ADMIN to ENGINEERING	55 m
ADMIN to BUSINESS	90 m
ADMIN to MEDIA	50 m
ENGINEERING to BUSINESS	55 m
ENGINEERING to MEDIA	50 m
BUSINESS to MEDIA	45 m
DELHI Head Office to CHENNAI Campus	2175 km

Number of Computers installed at various buildings:

ADMIN	110
ENGINEERING	75
BUSINESS	40
MEDIA	12
DELHI Head Office	20

(a) Suggest the most appropriate location for the server inside the Chennai campus (out of the 4 buildings) to get the best connectivity for maximum number of computers. Justify your answer.

(b) Suggest and draw the cable layout to efficiently connect various buildings within the Chennai campus for connecting the computers.

(c) Which hardware device will you suggest to be procured by the company to be installed to protect and control the internet use within the campus?

(d) Which of the following will you suggest to establish online face-to-face communication between the people in the Admin Office of the Chennai campus and Delhi Head Office?

‘   (i) Cable TV   (ii) Email   (iii) Video conferencing   (iv) Text Chat

(e) Which protocol is used in Video conferencing?

36. **Consider the DataFramedf shown below.**

Index	EmpID	Name	Department	Salary
0	101	Amit	HR	45000
1	102	Neha	IT	55000
2	103	Rahul	Finance	60000
3	104	Pooja	IT	58000
4	105	Ankit	HR	48000

Write Python statements for the DataFramedf to:

I. Display the last two rows of the DataFrame.

II. Print the names of all employees.

III. Delete the column **Salary**.

IV. Display the data of the **Department** column from index 1 to 3 (both included).

V. Rename the column **Name** to **EmployeeName**.

37. **(A)Write suitable SQL queries for the following:**

I. To display the **total marks** from the marks_obtained column in the **Results** table.

II. To display the **first two characters** of the state_code column in the **Addresses** table.

III. To display data from the fullname column in the **Candidates** table after removing **leading spaces only**.

IV. To display the **minimum value** from the price column of the **Products** table.

V. To find the **number of records** present in the **Orders** table.

OR

(B) Write suitable SQL queries for the following:

I. Round the value **15.6789** to **two decimal places**.

II. Find the **remainder** when 25 is divided by 4.

III. Display the **length of the word**'Computer'.

IV. Display the **last 5 characters** from the string 'Information Technology'.

V. Display data from the phone_number column of the **Contacts** table after removing **leading and trailing spaces**.

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