



PRINCE ACADEMY

OF HIGHER EDUCATION

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SAMPLE PAPER SET - 03 (2024-25)

Time : 3:00 Hours

CLASS – XII IP (065)

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 18 questions carrying 01 mark each.
5. Section B has 07 Very Short Answer type questions carrying 02 marks each.
6. Section C has 05 Short Answer type questions carrying 03 marks each.
7. Section D has 03 Long Answer type questions carrying 05 marks each.
8. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
9. All programming questions are to be answered using Python Language only.

SECTION- A

1. Landline Telephone network is an example of_____.
(a) LAN (b) WAN (c) MAN (d) Internet
2. Which of the following element make e-waste hazardous in nature?
(a) Lead (b) Glass (c) Plastic (d) Iron
3. A provides legal protection for your brand and helps you guard against counterfeiting and fraud.
(a) Patents (b) Copyrights (c) Trademark (d) All of these
4. Predict the output of the following query:
SELECT MOD (4,3);
(a) 0 (b) NULL (c) NaN (d) 1
5. Which of the following SQL functions does not belong to the Math functions category?
(a) MOD () (b) ROUND () (c) POW () (d) SUBSTRING()
6. PYTHON is under the terms of the GNU General Public License.
(a) Office (b) Firefox (c) FOSS (d) All of these
7. S in CSV stands for:
(a) separated (b) static (c) statement (d) None of these

8. Ram, a Database Administrator, needs to display the Maximum pay of all workers from those departments which have more than Five employees. he is experiencing a problem while running the following query: `SELECT DEPT, Maximum (PAY) FROM EMP ORDER BY DEPT HAVING COUNT ()>5;`

Which of the following is a correct query to perform the given task?

- (a) `SELECT DEPT, max(*) FROM EMP WHERE COUNT(*) > 5 GROUP BY DEPT;`
- (b) `SELECT DEPT, Maximum (*) FROM EMP HAVING COUNT(*) > 5 GROUP BY DEPT;`
- (c) `SELECT DEPT, Max (PAY) FROM EMP GROUP BY DEPT HAVING COUNT(*)>5;`
- (d) `SELECT DEPT, maximum (PAY) FROM EMP GROUP BY DEPT WHERE COUNT(*) > 5;`

9. Predict the output of the following query:

`SELECT UCASE (DAYNAME ("2025-01-17"));`

- (a) SUNDAY?
- (b) FRIDAY
- (c) TUESDAY
- (d) The corresponding month number when we execute the query.

10. Which of the following command will show the first 5 rows from a Pandas Series named NP?

- (a) `NP.head()`
- (b) `NP.Head (5)`
- (c) Both (a) & (b)
- (d) None of these

11. With reference to SQL, identify the invalid data type for TEXT Values.

- (a) `FLOAT ()`
- (b) `CHAR ()`
- (c) `VARCHAR ()`
- (d) Both (a) & (b)

12. In Python programming, will be the output of the given expression:- `print(print("All")," of the above)`

- (a) All of these
- (b) Syntax Error
- (c) None of these
- (d) All

13. Which of the following statements comes under plagiarism if you:

- (a) Make use of the works of others to gather information.
- (b) Use the work of another and represent it as your own.
- (c) Make use of the works of others to support your own arguments.
- (d) Examine the ideas and arguments of others to help you shape your own thoughts or views on a particular issue.

14. In SQL, `MID ()` function is equivalent to:

- (a) `LEN ()`
- (b) `TRIM()`
- (c) `SUBSTR()`
- (d) None of these

15. Which client software is used to request and display Web pages ?

- (a) Website
- (b) Web Browser
- (c) Web Server
- (d) Web Hosting

16. Creative Commons (CC) is a non-profit organization of

- (a) India
- (b) America
- (c) UK
- (d) None of these.

17. Assertion (A):- A repeater amplifies the signal, it requires a source of electric power.
Reasoning (R): - A repeater is an electronic device in a communication channel that increases the power of signal and retransmits it, allowing it to travel further.
- (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 and R both are False
18. Assertion (A):- DataFrame is a multidimensional data structure.
Reasoning (R): - To use DataFrame in a program we need not to import pandas library.
- (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 and R both are False

SECTION- B

19. What is the concept of web server and web client?

OR

Avus is doing a course in networking. He is unable to understand the concept of protocol. Help her by explaining it with the help of suitable example.

20. The python code write below has syntactical errors. Rewrite the correct code and underline the corections made.

```
import pandas as pd
C={"s1":"102", "103","104"},
"sub": ["math", "bio",eng"]}
df= Pd.dataframe (comp)
print (Df)
```

21. Consider the given SQL string:

“Informatics Practices Examination 2024”

White suitable SQL queries for the following:

- (i) Returns the position of the first occurrence of the substring "Examination" in the given string.
(ii) To extract last four characters from the string.
22. Predict the output of the given Python code:
- ```
import pandas as pd
a = pd.DataFrame ([2,6,8], index = ["A1", "B2", "C3"], columns = ["VALUE"])
print(a[::-1])
```
23. What is a digital footprint ? How it is created also explain type of digital footprint ?

24. Complete the given Python code to get the required output of whole Dataframe.

```
import _____ as pd
t= {"ROLL no": [10,11,13],
 "Name": ["SUMIT", "AMIT", "BIMAL"],
 "Age": [26, 19, 22],
 "Dept": ["PHYS", "CHEM", "MATH"]}
df = _____. DataFrame (_____) index=['A','B', 'C'])
print (_____)
```

25. Which aggregate function is required to calculate the minimum salary in my SQL table? Give the syntax to get minimum and maximum salary in SQL?

### SECTION- C

26. Based on the SQL table Garment, write suitable queries for the following:

**Table:Garment**

| Gcode | Gname      | Size | Colour | Price |
|-------|------------|------|--------|-------|
| 111   | TShirt     | XL   | Red    | 1400  |
| 112   | Jeans      | L    | Blue   | 1600  |
| 113   | Skirt      | M    | Black  | 1100  |
| 115   | Trousers   | L    | Brown  | 1500  |
| 116   | Ladies Top | L    | Pink   | 1200  |

(i) Write the command to display the average price of those garments that are available in Red colour.

(ii) Write the command to count those garments that have their names starting with "T".

(iii) Select the records that have a price below the average price.

OR

Predict the output of the following queries based on the table Garment given above:

(i) Select MIN(Price) AS "MIN PRICE" from Garment where size= "L";

(ii) Select Count(\*) from Garment where Gname NOT like "TS";

(iii) Select MAX (Price) from Garment;

27. Write python code to create the following DATAFRAME:

| SR.NO | NAME   | MARKS |
|-------|--------|-------|
| 0 101 | Harsh  | 83    |
| 1 102 | Arun   | 75    |
| 2 103 | Manna  | 64    |
| 3 104 | Hennat | 71    |
| 4 105 | Danny  | 46    |
| 5 106 | Fatima | 76    |

28. Write MySQL, statements for the following:

(i) To create a database named Z\_BANK.

(ii) To create a table named EMP based on the following specification:

| Column Name | Data Type    | Constraints   |
|-------------|--------------|---------------|
| EMP NO      | Integer      | Primary Key   |
| ENAME       | Varchar (20) | NOT NULL      |
| WHRS        | FLOAT        | DEFAULT "0.0" |

29. Anjali, a student of class 12. One day she received a SMS about winning a lottery and to claim prize money she Anjali, a student of class 12. One day there revedenly she had sheared her personal bank details and the very next day a good amount of money was deducted from her account. Based on the given information, answer the questions given below.

(i) Identify the type of cybercrime he is a victim of.

(ii) How phishing works?

(iii) Who uses phishing?

OR

What did you mean by e-hazard?

30. Consider the given DataFrame 'Furniture':

Write suitable Python statements for the following:

**Furniture**

| Fcode | Name  | price |
|-------|-------|-------|
| 10023 | Table | 4000  |
| 10001 | Chair | 2050  |
| 10012 | Sofa  | 3500  |

Write suitable Python statements for the following:

(i) Calculate Bonus as Price + 30% of price and assign to column "Bonus".

(ii) Calculate the Increment as Bonus-Price.

(iii) Display the DataFrame.

### **SECTION- D**

31. Consider a table SALESMAN with the following data:

| SR.NO | SNAME         | SALARY | BONUS | DATE OF JOIN |
|-------|---------------|--------|-------|--------------|
| A01   | Beena Mehta   | 30000  | 45.23 | 29-10-2019   |
| A02   | K. L. Sahay   | 50000  | 25.34 | 13-03-2018   |
| B03   | Nisha Thakkar | 30000  | 35.00 | 18-03-2017   |
| B04   | Leela Yadav   | 80000  | NULL  | 31-12-2018   |
| C05   | Gautam Gola   | 20000  | NULL  | 23-01-1989   |
| C06   | Trapti Garg   | 70000  | 12.37 | 15-06-1987   |
| D07   | Neena Sharma  | 50000  | 27.89 | 18-03-1999   |

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

- (i) Display salesman name and bonus after rounding off to zero decimal places.
- (ii) Display the position of occurrence of the string "ta" in salesman names.
- (iii) Display the four characters from salesman name starting from second character.
- (iv) Display the month name for the date of join of salesman.

32. AMIT a Data Analyst with a multinational brand has designed the DataFrame Df:

```
0 1 2
0 20 40 75
1 40 10 27
2 60 60 71
```

Answer the following questions:

- (i) Predict the output of the following python statement:  

```
print (df. iloc [2: :-1,])
```
- (ii) Delete the last column from the DataFrame.
- (iii) White Python statement to add a new column total which is the sum of all the values.

OR

(Option for part iii only)

Write Python statement to export the DataFrame to a CSV file named book.csv stored at F: drive.

### **Section E**

33. Write the statement which will perform the following operations:

- (i) To remove spaces from the left side of the string," ABC public school".
- (ii) To display last name from the string "AYUS BISWAS".
- (iii) To display the present day name.
- (iv) To find the remainder of two numbers, 100 and 13.
- (v) To print the string "QwErly" in lower case letters.

OR

Consider a table Sales with the following data:

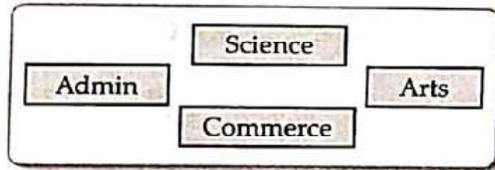
| ItemCode | Category      | TotalSale | Profit  |
|----------|---------------|-----------|---------|
| 201      | Cosmetics     | 24000     | 6500.34 |
| 312      | Books         | 22500     | 4500    |
| 407      | Stationary    | 31000     | NULL    |
| 471      | Gift          | 27500     | 2561.76 |
| 232      | Baby Products | 35000     | 1500.26 |

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

- (i) Display the position of occurrence of the letter 's' in category.

- (ii) Display the length of category names.
- (iii) Display profit rounded off to one place before decimal point
- (iv) Display details in the ascending order of ItemCode.
- (v) Display the number of profit values entered.

34. ABC College of Arts and Science has 4 blocks of buildings at their main campus in Delhi



Shortest distances between various locations:

|                     |       |
|---------------------|-------|
| Admin to Science    | 100 M |
| Admin to Commerce   | 70 M  |
| Admin to Arts       | 200 M |
| Science to Commerce | 70 M  |
| Science to Arts     | 50 M  |
| Commerce to Arts    | 120 M |

Number of Computer in various buildings:

|          |    |
|----------|----|
| Admin    | 15 |
| Science  | 40 |
| Commerce | 25 |
| Arts     | 10 |

- (i) Suggest the most appropriate block to place the SERVER to get the best and effective connectivity, Justify your answer.
- (ii) Suggest the cable layout to efficiently connect various blocks in the campus.
- (iii) Will there be any possibility of signal loss? If yes suggest a method to prevent it  
If No justify your answer.
- (iv) Suggest a method to ensure security of entire college network.
- (v) Suggest an appropriate technology to connect their sister institution from rural village of patna.  
What type of network will be formed here?

35. The price of Items are given below:

item-[30, 30, 30, 40, 40, 50, 50, 50, 50, 60, 60, 70, 70, 70]

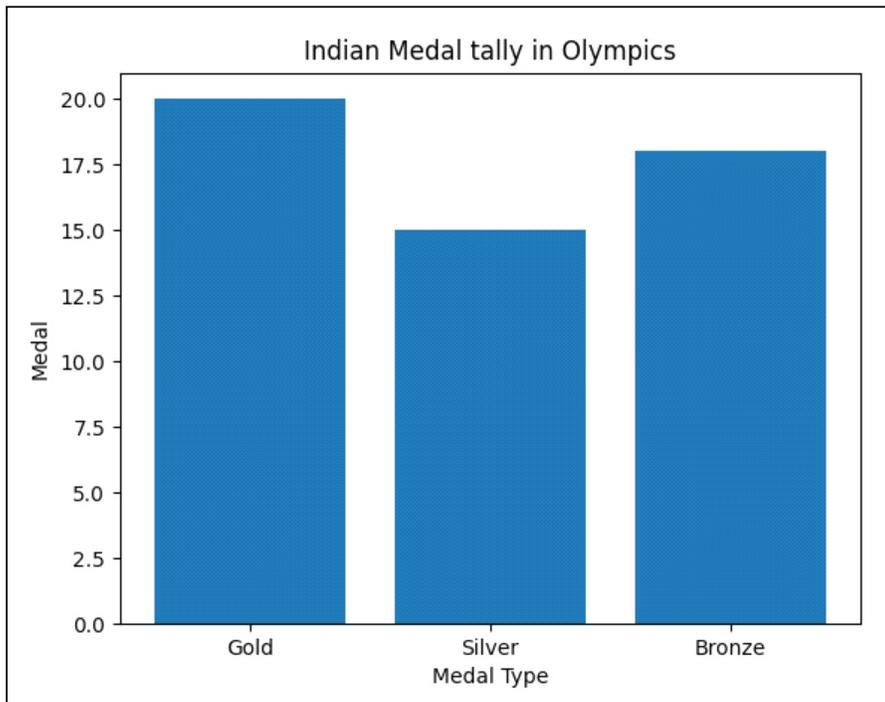
Write suitable Python code to generate a histogram based on the given data, along with an appropriate chart title and both axis labels and bins

`= [20,30,40,50,60,70,80],colour='red']`

Also give suitable python statement to save this chart

OR

Write Python code to plot a bar chart for India's medal tally as shown below:



Also give suitable python statement to save this chart

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