



PRINCE ACADEMY

OF HIGHER EDUCATION

[Co-edu. Sr. Sec. School, Affiliated to CBSE, Affiliation No. - 1730387]

Palwas Road, Near Jaipur - Bikaner Bypass Crossing, SIKAR - 332001 (Raj.) INDIA

Mob. : 9610-75-2222, 9610-76-2222

www.princeeduhub.com | E-mail : princeacademy31@gmail.com

CBSE SAMPLE PAPER (2024-25)

Time : 3:00 Hours

CLASS – XII IP (065)

M.M. : 70

General Instructions:

- 15- minute prior reading time allotted for Q-paper reading.
- This question paper contains five sections, Section A to E.
- All questions are compulsory.
- Section A have 18 questions carrying 01 mark each.
- Section B has 07 Very Short Answer type questions carrying 02 marks each.
- Section C has 05 Short Answer type questions carrying 03 marks each.
- Section D has 03 Long Answer type questions carrying 05 marks each.
- Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
- All programming questions are to be answered using Python Language only.

SECTION- A

- A _____ is an electronic device that converts digital data signals into modulated analog signals suitable for transmission over analog telecommunications circuits. 1
(i) Hub (ii) Modem (iii) Gateway (iv) Repeater
- What is the hazardous pollutant release from LED'S? 1
(i) Arsenic (ii) Barium (iii) Cobalt (iv) Cadmium
- Intellectual property right (IPR) protect the use of information and ideas that are of 1
(i) ethical value (ii) social value (iii) commercial value (iv) sentimental value
- Predict the output of the following query: 1
SELECT MOD (50,3);
(i) 0 (ii) NULL (iii) NaN (iv) 2
- Which of the following SQL functions belongs to the DATE functions category? 1
(i) NOW () (ii) TRUNCATE () (iii) UCASE () (iv) Both i and (ii)
- Python is a tool. 1
(i) Office (ii) Firefox (iii) FOSS (iv) All of the above
- V in CSV stands for: 1
(i) Vector (ii) Value (iii) Variable (iv) None of the above

8. Rani, a Database Administrator, needs to display the Maximum pay of workers from those departments which have more than four employees. She is experiencing a problem while running the following query: 1
- ```
SELECT DEPT, MAX(PAY) FROM EMP ORDER BY DEPT HAVING COUNT(*)>4;
```
- Which of the following is a correct query to perform the given task?
- (i) SELECT DEPT, MAX(\*) FROM EMP WHERE COUNT(\*) > 5 GROUP BY DEPT;
- (ii) SELECT DEPT, COUNT(\*) FROM EMP HAVING COUNT(\*) > GROUP BY DEPT;
- (iii) SELECT DEPT, MAX(PAY) FROM EMP GROUP BY DEPT HAVING COUNT(\*)>4;
- (iv) SELECT DEPT, MAX(PAY) FROM EMP GROUP BY DEPT HAVING COUNT(\*) > =4;
9. Predict the output of the following query: 1
- ```
SELECT LCASE (MONTH (NOW()));
```
- (i) june
- (ii) april
- (iii) may
- (iv) The corresponding month number when we execute the query.
10. Which of the following command will show the first 10 rows from a Pandas 1
- Series named NP?**
- (i) NP.head() (ii) NP.head (10) (iii) Both of the above (iv) None of the above
11. With reference to SQL, identify the invalid data type for TEXT Values. 1
- (i) CHAR (ii) VARCHAR (iii) FIXCHAR (iv) None of the above
12. In Python programming will be the output of the given expression:- print (print (6>2)) 1
- (i) True (ii) False (iii) True (iv) True
- True None
13. Plagiarism where the writer changes a few words in the original text of another is known as 1
- (i) Direct copy (ii) Words switch (iii) Paraphrasing (iv) None of these
14. In SQL, LEFT () function is equivalent to: 1
- (i) MID () (ii) TRIM() (iii) SUBSTR() (iv) Both i and iii
15. A web page (or webpage) is a specific collection of information provided by a website and displayed to a user on a _____. 1
- (i) Website (ii) Web Browser (iii) Web Server (iv) Web Hosting
16. The ONE Creative Commons condition that is always included in every CC licence is:
- (i) ShareAlike (SA) (ii) No Derivatives (ND) (iii) Non Commercial (NC) (iv) Attribution (BY)

17. Assertion (A):- The device switch works like a signal amplifier. 1
Reasoning (R):- Switch is required for stable Internet Connection.
(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
18. Ass-ertion (A):- To use the matplotlib library in a Python program, the import statement is optional. 1
Reasoning (R):- The only alias name that can be used with the matplotlib.pyplot library is pd.wys.1
(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 and R both are False

SECTION- B

19. Briefly explain the basic concepts of a web Hosting and web browsing. 2
OR
Bithika is doing a course in networking. She is unable to understand the concept of TCP/IP. Help her by explaining it with the help of suitable example.
20. The python code written below has syntactical errors. Rewrite the correct code and underline the corrections made. 2
`import Pandas as pd
df = ("ENG"; ["MATH", "CHEM", "PHYS"], "MEDICAL", ["Biology", "Bio-Tech", "MICRO BIO"])
df = pd.dataframe (df)
print (df)`
21. Consider the given SQL string:
"the quick brown fox jumps over the lazy dog"
Write suitable SQL queries for the following:
(i) Returns the word fox in capital letters.
(ii) To display the total number of characters present in the last word of the given sentence.
22. Give the output of the code:
`import pandas as pd
a = pd. DataFrame ([1, 2, 3], index ["One", "Two", "Three", "Four"], columns = ["First"])
print(a[1:31])`
23. What are the 4 types of digital footprint?

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

```
import _____ as pd
t= {"Rollno": [1, 2, 3],
    "Name": ["Abir", "Ayus", "Arman"],
    "Age": [15, 14, 14],
    "Marks": [77.9, 70.4, 60.9],
    "Grade": ["118", "11A", "118"]}
df = _____. DataFrame (_____,index=[10, 20, 301])
print(_____)
```

25. What does aggregate function return SQL?

SECTION- C

26. Consider the following table and answer the given questions.

Admnno	S_Name	Adm_Date	Mark
501	Arup	2000-11-01	98
502	Raj	1999-10-02	65.5
503	Aman	2000-05-01	99
504	Saroj	1998-10-02	69.8

Write suitable queries for the following:

- (i) Display average marks of all students whose name starts with 'A'.
- (ii) Display lowest marks.
- (iii) Display the records in the ascending order of marks.

OR

What will be the output of the following query:

- (i) SELECT MIN (Adm_Date) FROM STUD;
- (ii) SELECT COUNT(*) FROM STUD WHERE MARKS >90;
- (iii) SELECT POW(SUM(marks),2) FROM STUD;

27. Create a Data Series in Python from the given list

3

('abc': [1,2,3], 'bed': [2,2,6],'cxv': [3,5,4]) Also give appropriate column headings as shown below:

```
abc           [1, 2, 3]
bcd           [2, 2, 6]
CXV          [3, 5, 4]
dtype:       object
>>>
```

28. Write MySQL statements for the following:

(i) To create a database named ABC PUBLIC SCHOOL.

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

Column Name	Data Type	Constraints
ADM_NO	Integer	Primary Key
SNAME	Varchar(20)	NOT NULL

29. Anita, a student of class 12 had opened a Facebook account newly. She r

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

(ii) Under which act, she can lodge a complaint to the relevant authorities?

(iii) Suggest her any two precautionary measures which she should take in Future while being online to avoid any such situations.

OR

How can we prevent hazards at home or school ?

30. Consider the given DataFrame 'df':

	math	eng	ip
student1	78	79	80
student2	49	72	75
student3	80	42	78
student4	53	71	40

Write suitable Python statements for the following:

(i) Add a column called bio with the following data: [70,56,89,80].

(ii) Add a new column total and calculate the total of all subjects.

(iii) Add a new column avg and calculate the average of all subjects.

SECTION- D

31. Consider the following table and answer the given questions

Acc_No	B_Name	DOP	Price	Chapter	City
101	Abcd	2000-11-01	98	19	Delhi
102	Rxyz	1999-10-02	65.8	18	Kolkata
103	Azxc	2000-05-00	99	20	Delhi
104	Sven	1998-10-12	69.8	17	NULL

(i) Write a query to display the year of Newest Book.

(ii) Write a query to display the Day of most recent Book.

(iii) Write a query to display all the transactions done in the month of June.

(iv) Write a query to count total number of transactions in the year after 1999.

Df3 :

	0	1	2
0	78	79	80
1	49	72	75
2	80	42	78
3	53	71	40

Answer the following questions:

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

a. `print (df3.loc[0:1, 12:21])`

b. `print (df 3.iloc[0:1,1])`

(ii) Delete the last column from the Dataframe.

(iii) Write Python statement to add a new column total which is the sum of all the 3 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 suitable SQL queries for the following:

(i) To calculate the exponent for -2 raise to the power of 2.

(ii) To display current date& time only.

(iii) To round off the value 24.2302 to 1 decimal place.

(iv) To remove all the probable Trailing spaces from the column username of the table named user.

(v) To display the length of the string 'CBSE @ 2024'.

OR

Naman has created following table named exam:

RollNo	Name	Subject	Marks
1	Sanu	Computer Science	98
2	Sanji	IP	100
3	Vinayak	CS	90
4	Shilpa	IP	99
5	Parthata	IP	100

Help him in writing SQL queries to the perform the following task:

(i) Insert a new record in the table having following values:

[7,'MONIKA','CS',85]

(ii) To change the value "CS" to "Comp Sc" in subject column.

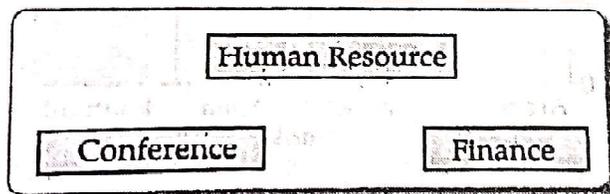
(iii) To remove the records of those students whose marks are less than 90.

(iv) To add a new column ADDRESS of suitable datatype and Not Null.

(v) To display records of "Comp_Sc" subject.

34. XYZ is professional consultancy company. The company is planning to set up their new offices in India with its hub at Pune. As a network adviser, you have to understand their requirement and suggest them the best available solutions. Their queries are mentioned as (i) to (v) below: 5

Physical locations of the blocks



Block to Block distance (in Metres):

From	To	Distance
Human Resource	Conference	110
Human Resource	Finance	40
Conference	Finance	80

Expected number of computers to be Instlled in each block :

Block	Computers
Human Resource	25
Finance	120
Conference	90

(i) What will be the most appropriate block, where XYZ should plan to install their server?

(ii) Draw a block diagram showing cable layout to connect all the buildings in the most appropriate manner for efficient communication. (iii) What will be the best possible connectivity out of the offices in Chennai with its London based office. following you will suggest to connect the new setup of

- Satellite link
- Infrared

(iv) Which of the following device will be suggested by you to connect each computer in each of the buildings?

- Ethernet cable
- Switch
- Modem

(v) Which type of network out of the following is formed by connecting the computers of these three blocks?

- Gateway
- LAN
- MAN
- WAN

35. The price of 10 Items are given below:

5

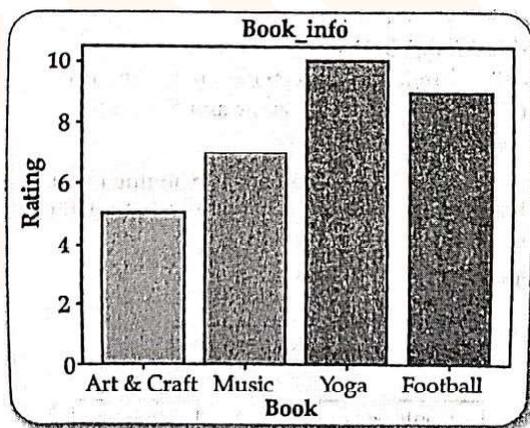
Price_item [10,12,12.5, 13, 13, 15, 50, 22, 21, 56,38]

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 'Book Info' Bar Chart as shown below:



Also give suitable python statement to save this chart.
