

PRESIDENCY THE INTERNATIONAL SCHOOL, BHIWADI
HALF YEARLY EXAMINATIONS(2022-23)

CLASS –XII

INFORMATICS PRACTICES

Time: 3 hrs

MM- 70

General instructions:

There are two parts in this Question paper.

Part A consist of MCQs and Case based Qus.

Part B consists of Descriptive paper.

- Very Short Answer Type Question.. There are 16 Ques each Qus Carries 1 marks.
- Short Answer Type Ques.(I) .There are 5 Ques each Question carries 2 marks.
- Short Answer Type Ques.(II) .There are 5 Ques each Question carries 3 marks.
- Long Answer Type Ques . There are 2 Ques each Question carries 5 marks.

Part A

1. To delete a column from a DataFrame, you may use _____ statement.
a)remove b) del c)drop d) cancel
2. To extract row/column from a dataframe, _____ function may be used.
a) row() b) column() c) loc() d) All of these
3. Identify the correct statement:
a) The standard marker for missing data in pandas is NaN
b) Series act in a way similar to that of an array
c) Both a and b d) None of the above
4. To change the 5th column's value at 3rd row as 35 in dataframe DF, you can write _____.
a) DF[4,6] = 35 b) DF[3,5] = 35 c) DF.iat[4,6] = 35 d) DF.iat[3,5] = 35
5. Which function lets you set the title of the plot?
a) title() b) plt.title() c) graphtitle() d) all of these
6. Which argument must be set with plotting function for legend() to display the legends?
a) data b) label c) name d) sequence
7. Which of the following types of table constraints will prevent the entry of duplicate rows?
a) Unique b) Distinct c) Primary Key d) NULL
8. Consider the following query:
SELECT name from class where subject _____ NULL;
Which comparison operator may be used to fill the blank space in above query?
a) = b) LIKE c) IS d) IS NOT
- 9.What will be returned by the given query?
SELECT INSTR("INDIA", "DI");
a) 2 b) 3 c) -2 d) -3
10. Write the output of the following SQL command:
Select Round(49.88);
a) 49.88 b) 49.8 c) 49.0 d) 50
11. What will be returned by the given query ?
SELECT month ('2005-05-11');
a) 5 b) 11 c) May d) November
12. Legal term to describe the rights of a creator of original creative or artistic work is called _____.
a) Copyright b) Copyleft c) GPL d) none of these
13. Which of the following is not a type of cyber crime?
a) Data Theft b) Forgery c) Damage to data and systems d) Installing antivirus for protection.
14. A software that can be freely accessed and modified is called _____.
a) Synchronous Software b) Package Software c) Open Source Software d) Middleware

CASE STUDY BASED QUESTIONS

- A. Sanyukta is the event incharge in a school. One of her students gave her a suggestion to use Python pandas and matplotlib for analysing and visualising the data, respectively. She has created a Data frame “SportsDay” to keep track of the number of First, Second and Third prizes won by different houses in various events.

	House	First	Second	Third
0	Chenab	5	7	6
1	Ganges	10	5	4
2	Jamuna	8	13	15
3	Jhelum	12	9	12
4	Ravi	5	11	10
5	Satluj	10	5	3

Write Python commands to do the following:

- Display the house names where the number of Second Prizes are in the range of 12 to 20.
 - `df['Name'][(df['Second']>=12) and (df['Second']<=20)]`
 - `df['Name'][(df['Second']>=12) & (df['Second']<=20)]`
 - `df['Name'][(df['Second']>=12) & (df['Second']<=20)]`
 - `df[(df['Second']>=12) & (df['Second']<=20)]`
- Display all the records in the reverse order.
 - `print(df[::-1])`
 - `print(df.iloc[::-1])`
 - `print(df[-1:]+df[:-1])`
 - `print(df.reverse())`
- Display the bottom 3 records.
 - `df.last(3)`
 - `df.bottom(3)`
 - `df.next(3)`
 - `df.tail(3)`
- Choose the correct output for the given statements:
`x=df.columns[:1]`
`print(x)`
 - House
 - Name
 - First
 - Error
- Which command will give the output 24:
 - `print(df.size)`
 - `print(df.shape)`
 - `print(df.index)`
 - `print(df.axes)`

Part B

Very Short Answer Type Question.

- is a set of moral principles that governs the behaviour of a group or individual and regulates the use of computers.
- The act of fraudulently acquiring someone's personal and private information, such as online account names, login information and passwords is called as
- In a dataframe axis = 1 , represent the _____ element.
- Write the command to find the sum of series S1 and S2.
- Name the library of which pyplot is an interface.
- What is the use of legends in graph/chart.
- What is the difference between order by and group by clause.
- Categorize following commands into DDL and DML commands?
INSERT INTO, DROP TABLE, ALTER TABLE, UPDATE...SET
- Predict the output of the following queries:

- i. `select instr('exams@cbse.nic.in','');`
- ii. `select left('exams@cbse.nic.in',5);`
10. Reena is working with functions of MySQL. Explain her following:
What is the purpose of now () function?
11. How many parameters does now() accept?
12. Explain the use of wild cards in SQL.
13. What is IT Act 2000.
14. What is open source software?
15. What is digital property rights.
16. is a set of moral principles that governs the behaviour of a group or individual and regulates the use of computers.

Short Answer Type Question (I) Do any 5.

1. What is plagiarism? How it is related to digital property rights ?
2. How is series data structure different from dataframe data structure?
3. Differentiate between where and having clause ?
4. What is data visualization? What is its significance ?
5. What are the advantages of CSV file format? How can you import csv file to dataframe.
6. What is cyber stalking? How it is different from cyber bullying.

Short Answer Type Question .(II)

1. Write a python program to plot bar graph of following data with proper title and legend function.

Student: [Anil, vikas, Dharma, Rajesh, Mahi, Manish]

Percentage:[94,85,45,25,50,54]

2. Help Reshma in predicting the output of the following queries:
i) `select round(8.72,3);` ii) `select round(9.8);`
Also explain its usage.
3. a) `Select concat("information", "technology");`
b) `Select instr("computer", "er");`
c) `Select truncate(465.4993, 2);`
d) `Select mod(5,2) ;`
e) `Select substr("information technology",-5);`
f) `Select month('2010-02-07');`

OR

Write SQL statements for the following:

- i) Display the length of the string "Informatics Practices".
- ii) Display the position of "My" in "Enjoying MySQL".
- iii) Display the name of current month.
- iv) Display system date.
- v) Display date after 10 days of current date.
- vi) Display the day of current date
4. What can be done to reduce the risk of identity theft? Write any two ways.

Or

Distinguish between the following:

- a) Active and Passive footprint
- b) Copyright and patent
5. Suppose a data frame contains information about student having columns rollno, name, class and section. Write the code for the following:
(i) Add one more column as fee .

- (ii) Write python code to delete column fee of data frame.
- (iii) To create the above dataframe.

Or

Write a program to display no. of rows and no. of columns in DataFrame df without using shape attribute.

Long Answer Type Questions:

1.

Consider a set of information for an Exam conducted for students for the following details:

names	marks	trials	passed
Sanya	95	2	Yes
Krish	70	3	No
Anna	65	1	No
ram	92	2	yes

Write a pandas code to create a dataframe named df with the above information with column names as “names”, “marks”, “trials”, “passed” . (Do any 5)

- i) Display the first 3 rows of the DataFrame
- ii) Display Name and marks columns only from the DataFrame
- iii) Display the rows where the price is greater than 90
- iv) Display last 2 rows.
- v) To sort the DataFrame first by 'name' in descending order, then by 'marks' in ascending order.
- vi) To change the marks in 3rd row (i.e for index 2) to 67

2. Write the SQL functions which will perform the following operations:

- i) To display the name of the month of the current date .
- ii) To remove spaces from the beginning and end of a string, “ Panorama “.
- iii) To display the name of the day eg, Friday or Sunday from your date of birth, dob.
- iv) To display the starting position of your first name(fname) from your whole name (name).
- v) To compute the remainder of division between two numbers, n1 and n2

Or

Write SQL commands for the following on the basis of given table SPORTS.(Any 3)

StudentNo.	Class	Name	Game1	Grade1
10	7	Sameer	Cricket	B
11	8	Sujit	Tennis	A
12	7	Kamal	Swimming	B
13	7	Veena	Tennis	C
14	9	Archana	Basketball	A
15	10	Arpit	Cricket	A

- a) Display the name of students who have grade A in game1.
- b) Display the number of students having game ‘Cricket’.
- c) Display the unique class in SPORTS table.

Give the output of the following SQL statements.(Any 2)

- a) select count(*) from SPORTS;
- b) select max(Class) from SPORTS;
- c) select count(*) from SPORTS group by Game1;