

General Instruction:

- (a) Make sure to follow a sequence while writing.
- (b) Paper is divided into 2 sections i.e., Section A & B
- (c) Section A Contains Conceptual Type Questions of 5 marks
- (d) Section B contains Competency Type Questions of 20 marks

SECTION A (OBJECTIVE TYPE QUESTIONS)-5 MARKS

Q1. To create an empty Series object, you can use: 1

- (a) pd.Series(empty) (b) pd.Series() (c) pd.Series(np.NaN) (d) all of these

Q2. Which type of values will be returned by SQL while executing the following statement? 1

Select length("LENGTH") ;

- (A) Numeric value (B) Text value (C) Null value (D) Float value

Q3. The correct SQL from below to find the temperature in increasing order of all cities. 1

- (A) SELECT city FROM weather order by temperature ;
 (B) SELECT city, temperature FROM weather ;
 (C) SELECT city, temperature FROM weather ORDER BY temperature ;
 (D) SELECT city, temperature FROM weather ORDER BY city ;

Questions 4 and 5 are ASSERTION AND REASONING based questions. Mark the correct choice as

- 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 is false but R is True

Q4. **Assertion(A):** The UNIQUE and PRIMARY KEY constraints are similar but not the same. 1

Reasoning(R): There can be only one column with PRIMARY KEY constraint in a table.

Q5. **Assertion(A):** A series object stores value of homogeneous types. 1

Reasoning(R): Even if value appear to be different types, internally they are stored in a common data type.

SECTION B (SHORT ANSWER TYPE QUESTIONS)- 20 MARKS

Q6. Neelam, a database administrator needs to display Class wise total number of students of 'XI' and 'XII' house. She is encountering an error while executing the following query: 2

SELECT CLASS, COUNT (*) FROM STUDENT ORDER BY CLASS HAVING CLASS='XI' OR CLASS= 'XII';

Help her in identifying the reason of the error and write the correct query by suggesting the possible correction (s).

- Q7.** Write a program to create a series object using a dictionary that stores the number of Kendriya Vidyalayas in each city of cities of your state. 2

Note: Assume some cities like AGRA, JHANSI, MATHURA, NOIDA having 4, 3, 5, 4 KVs respectively and pandas library has been imported as mypandas.

- Q8.** What will be the output of the following code: 2

```
>>> import pandas as pd

>>> mydata=pd.Series( ['rajesh', 'amit', 'tarun', 'Radhika'] )

>>> print(mydata < 'rajesh' )
```

- Q9.** Write suitable SQL query for the following: 2

- i) Display 4 characters extracted from 3rd character onwards from string 'IMPOSSIBLE'.
- ii) Display the position of occurrence of string 'GO' in the string "LET's GO to GOA".
- iii) Round off the value 257.75 to nearest ten rupees.
- iv) Display the remainder of 18 divided by 5.

- Q10.** Write Python code to create a Series object Temp1 that stores temperature of seven days in it. Take any random seven tempratures 2

- Q11.** Three Series objects store the marks of 5 students in three terms. Roll number of students form the index of these Series objects. The Three Series objects have the same indexes. 2

Calculate the total weighted marks obtained by students as per the following formula:

Final marks=25% Term 1+ 25% Term2+50% Term 3

- Q12.** Consider the following table SCHOOLBUS given below. Write SQL queries for i to iii. 2

Rtno	Area_Covered	Noofstudents	Transporter	Charges
1	Vasant Kunj	120	Shivam Travels	100000
2	Hauz Khas	80	Anand Travels	85000
3	Pitampura	55	Anand Travels	60000
4	Rohini	90	Anand Travels	100000
5	Yamuna Vihar	60	Bhalla Co.	55000
6	Krishna Nagar	80	Yadav Co.	80000
7	Vasundhra	110	Bhalla Co.	100000

- i. Display the Transporter wise Highest Charges.
- ii. Display Noofstudents transported by each transporter.

OR

Display total Charges collected by each transporter

Q13. Consider the following table GAMES. Write output for the following SQL command.

2

Gcode	Gamename	Type	Number	Prizemoney	Scheduledate
101	Carom board	Indoor	2	5000	23-jan-2004
102	Badminton	Outdoor	2	12000	12-dec-2003
103	Table tennis	Indoor	4	8000	14-feb-2004
105	Chess	Indoor	2	9000	01-jan-2004
108	Lawn tennis	outdoor	4	25000	19-mar-2004

SELECT Gcode,Gamename FROM GAMES WHERE Type='Indoor' ORDER BY prizemoney DESC;

Q14. Write outputs for SQL queries (i) to (iii) which are based on the given table PRODUCT:

2

PID	PNAME	QTY	PRICE	DATE_PURCHASE
P101	Moisturizer	10	125	2021-10-21
P102	Facewash	20	95	2022-09-10
P103	Shampoo	15	550	2021-07-09
P104	Electronic accessories	25	1050	2018-03-15
P105	Stationaries	30	250	2017-05-20

- i. SELECT LENGTH(PNAME) FROM PRODUCT WHERE PRICE>500;
- ii. SELECT MAX(DATE_PURCHASE) FROM PRODUCT;

OR

SELECT MOD(PRICE,QTY) FROM PRODUCT WHERE QTY>20;

Q15. Write statement to create a series PROD with each element as a product of its index and 3 as given:

2

0 0

1 3

2 6

3 9

4 12