

XII – IP – CT 1 (QP)
(PYTHON PANDAS- SERIES CONCEPT) (35 MARKS)

General instructions:

1. There are 22 questions in the question paper. All questions are compulsory.
2. Question no. 1 -12 are MCQs and FB. Each question carries one mark.
3. Question no. 13-21 are Short Answer Type Questions. Each question carries 2 marks.
4. Question no. 22 is Long Answer Type Question. Each question carries 5 marks.

1. Given a Pandas series called df, the command which will display the last 4 rows is _____.
a. print(df.tail(4)) b. print(df.Tail(4))
c. print(df.tails(4)) d. print(df.Tails(4))
2. A Series object S1 is created with the following details

| | |
|---|----|
| A | 5 |
| B | 10 |
| C | 15 |
| D | 20 |

What will be the output of following command: S1 [S1>15]

3. Given the following Series S1 and S2:

| S1 | | S2 | |
|----|----|----|----|
| A | 10 | A | 80 |
| B | 40 | B | 20 |
| C | 34 | C | 74 |

Write the command to find the sum of series S1 and S2

4. Python pandas was developed by?
a. Guido van Rossum b. Travis Oliphant
c. Wes McKinney d. Brendan Eich
5. Minimum number of arguments, we require to pass in pandas series?
a. 0 b. 1 c. 2 d. 3
6. Important data structure of pandas is/are _____.
a. Series b. Data Frame
c. Both of the above d. None of the above
7. What type of error is returned by following statement?
import pandas as pnd
pnd.Series([1,2,3,4], index = ['a','b','c'])
a. SyntaxError b. IndexError
c. ValueError d. None of the above
8. Which of the following statement will print Series 'S1' in reverse order?
a. print(S1[: : 1]) b. print(S1[: : -1])
c. print(S1[-1: : 1]) d. print(S1.reverse())
9. How many values will be modified by last statement of given code?
import pandas as pd
S1 = pd.Series(['NewDelhi', 'WashingtonDC', 'London', 'Paris'],
index= ['A', 'B', 'C', 'D'])
S1[1 : 3] = 'ND'
a. 1 b. 2 c. 3 d. 4
10. Write the output of the following code:
import pandas as pd
S1=pd.Series()
print(pd.Series().empty)
a. True b. False c. Error d. None of the above

11. Write the output of the following:

```
S1=pd.Series(14, index = ['a', 'b', 'c'])  
print(S1)
```

```
a)      a 14  
        b 14  
        c 14  
        dtype: int64
```

b) a 14 dtype: int64 c) Error d) None of the above

12. Which of the following statement sort the Series S1 values in descending order

a) S1.sort_values() b) S1.sort_values(ascending=False)
c) S1.sort_values(ascending=True) d) S1.sort()

13. How is series data structure different from a data frame structure?

14. How is series object different from and similar to ndarrays?

15. Write Python code to create a series object temp1 storing temperatures of seven days in it. Its indexes should be 'Sunday', 'Monday', 'Tuesday'.

16. Write commands to print following details of a series object seal.

a. if the series is empty. b. indexes of the series
c. The data type of underlying data d. if the series stores any NaN values

17. Given are two objects, a list object namely lst1 and a series object namely ser1, both are having similar values i.e. 8,10,12,14 . Find out the output produced by the following statements:

a. print(lst1*3) b. print(ser1*3)

```
Series 2  
101    93  
102    87  
103    82  
104    93  
105    90  
dtype: int64
```

18. Given a series object series 2 as shown below:

What will be the output for the following?

a. Series 2[1:] b. Series 2[0::3]
c. Series 2[: : -1] d. Series 2[103:105]

19. What will be the output produced by the following program?

```
import pandas as pd  
s1=pd.Series (data= [10, 20, 30])  
print (s1)  
print(s1>=20)  
print(s1[s1>20])
```

20. Consider a series object s10 that stores the number of students in each section of class 12

| | |
|---|----|
| A | 30 |
| B | 40 |
| C | 50 |
| D | 60 |

First two sections have been a task of selling tickets @ 200/- per ticket as part of an IP experiment. Write code to display how much they have collected.

21. Consider a series object s12 that stores the contribution of each section, as shown below

| | |
|---|-------|
| A | 30000 |
| B | 40000 |
| C | 50000 |
| D | 60000 |

Write code to modify the amount of section 'A' as 80000 and for section 'C' and 'D' as 1000000.print the changed object.

22. Consider the following Series

```
import numpy as np  
import pandas as pd  
Ind= ['Jan', 'Feb', 'Mar', 'Apr']  
Val= [31, 28, 31, 30]  
Sr_Obj=pd.Series (data=Val, index=Ind)
```

What will be the output for the following?

a. print(Sr_Obj. Values) b. print(Sr_Obj.hasnans) c. print(Sr_Obj.index)
d. print(Sr_Obj.shape) e. print(Sr_Obj.ndim)