



INDIAN SCHOOL AL WADI AL KABIR
Worksheet, 2022-23

Class: XII	SUB: INFORMATICS PRACTICES	Date of Completion: 22/05/2022
Worksheet No:4	TOPIC : Revision Workseet – Unit Test - Data Structure – Series & Data Frame	Note: To be written in the Theory book

SECTION A

- 1) Create the above series M1 with default index and with the given index.

	Marks
Term1	45
Term2	65
Term3	24
Term4	89

- 2) Create the following series Employee with default indices.

Salary
1700
1230
2250
1900

- 3) Find the output of the following code segment:

```
>>> import pandas as pd
>>> import numpy as np
>>> ARR1=np.arange(61,80,5)
>>> SER1=pd.Series(ARR1)
>>> print(SER1)
```

- 4) Find the output of the following code fragment:

```
>>> A2=np.arange(10,30,7)
>>> SER2=pd.Series([200,500,750],index=A2)
>>> print(SER2)
```

- 5) Find the output of the following code fragment:

```
>>> Ser3=pd.Series([8,12,25,30,40,55], index=['P1','P2','P3','P4','P5','P6'])
>>> print(Ser3)
```

- 6) _____ is used to sort the given series Ser3 in ascending order
- 7) _____ is used to sort the given series Ser3 in descending order
- 8) _____ is used to give the name for Ser3 as "Players"
- 9) _____ is used to give the name for index as "Points"
- 10) _____ is used to check whether the series Ser3 is empty or not.
- 11) _____ is used to display the no. of elements in Ser3.
- 12) _____ is used to display all the indexes of Ser3.
- 13) _____ is used to display all the values of Ser3.
- 14) _____ is used to create a series Ser4 with empty (No elements)
- 15) Find the output of the following statement:

```
>>> Ser5=pd.Series()
```
- 16) _____ is used to display all the elements between P2 to P5 of the series Ser3.
- 17) Find output of the following statement:

```
>>>Ser3.loc['P1':'P3']
```
- 18) Find output of the following statement:

```
>>>Ser3.iloc[2:4]
```
- 19) Write the statement to create the following series S1.

S1	
A	30
B	30
C	30
- 20) Find output of the following statement:

```
>>> S2=pd.Series([150],index=['A','B','C'])
```
- 21) Consider the following series Ser2 and Ser3.

```
>>> Ser2=pd.Series([25,20,35,55])
>>> Ser3=pd.Series([15,40,45,25])
```
- 22) What will be the output of the following statement:

```
>>> print(Ser2+Ser3)
>>> print(Ser2-Ser3)
```
- 23) Consider the following series names Ser4 and Ser5;

```
>>> Ser4=pd.Series([25,30,45,60])
>>> Ser5=pd.Series([5,2,3])
>>> print(Ser4*Ser5)
```
- 24) Find the output of the following statement:

```
>>>print(Ser4.mul(Ser5,fill_value=10))
```

- 25) What will be the output of the following statement with the series S7?
- ```
s1 18
s2 25
s3 34
s4 12
s5 20
>>>print(S7-10)
```
- 26) Consider the following series SER6
- ```
0 10.0
1 NaN
2 40.0
3 NaN
```
- 27) Consider the series DataSer:
- ```
D1 28
D2 37
D3 16
D4 27
D5 80
D6 54
```
- 28) What will be the output of the following statements?
- i) DataSer.head()      ii) DataSer.head(3)      iii) DataSer.tail(2)
- 29) What will be the output of the following statements?
- ```
>>>print(DataSer < 30)
>>>print(DataSer [DataSer <40])
```
- 30) Write a statement to add a new element 24 at index 'D7' and to remove the element at index 'D5'.

SECTION B

1. Given the following details of books in a library.

	BCode	Title	Author	Price
Book1	5478	Software Engineering	Patrick	1800
Book2	7382	System Analysis and Design	Mathews	650
Book3	4884	Data Analysis	Gilbert	1550
Book4	4727	Business Computing	Viveka	820
Book5	1683	Compiler Design	Dan	1230
Book6	9280	Simulation and Modeling	Sudev	700

- i) Create the above data frame **LibraryDF** using:
a) Dictionary of Series b) Dictionary of Lists.
- ii) Write python statement to perform the following:
- a) _____ statement is used to fetch the row index names from LibraryDF.
b) _____ statement is used to fetch the column names from LibraryDF.
c) _____ statement is used to fetch the data type values of the items in LibraryDF.
d) _____ statement gives the size of LibraryDF. i.e., No. rows and columns.
e) _____ statement is used to fetch the size of LibraryDF.
f) _____ statement is used to fetch the dimension of the LibraryDF.
g) _____ statement helps to transpose LibraryDF. i.e., rows becomes columns and columns becomes rows.
h) _____ statement is used to check whether LibraryDF is empty or not.
2. Perform the following operations based on above data frame **LibraryDF**.
- a) Write a statement to display the first and last 2 rows from LibraryDF.
b) Write a statement to display the first and last 5 rows from LibraryDF.
c) Write a statement to display all the values under Title column.
d) Write a statement to display all the values under Author column.
e) Write a statement to display the values under Title from row index Book1 to Book3.
f) Write a statement to display the values Price column of rows Book2 and Book4.
g) Write a statement to display all the row values of Title and Price columns.
h) Write a statement to display all the row values of BCode to Author columns.
i) Write a statement to display the values of row indexes Book3 and Book5 and column names BCode and Price.
j) Write a statement to display the values of row indexes from Book2 to Book5 and column names from Title to Price.

All the Best