Series : SSJ/2

SET – 4

Question paper Code No. 090

Roll No. [redacted]

Candidates must write / fill the Question Paper Code in the space allotted on OMR Sheet.

NOTE :
(i) Please check that this question paper contains **16** printed pages.
(ii) Please check that this questions paper contains **55** multiple choice questions (MCQs).
(iii) QP Code given on the right hand side of the question paper should be written on the appropriate place of the OMR Sheet by the candidates.
(iv) **20** minutes additional time has been allotted to read this question paper prior to actual time of commencement of examination.

INFORMATICS PRACTICES

Term-I

*Time allowed : **90** minutes*

Maximum Marks : 35

General Instructions :

(i) *The paper is divided into **3** Section – A, B and C.*

(ii) *Section – A, consists of Question **1** to **25** and student need to attempt **20** questions.*

(iii) *Section – B, consists of Question number **26** to **49** and student need to attempt **20** questions.*

(iv) *Section – C, consists of Question number **50** to **55** and student need to attempt **5** questions.*

(v) *All questions carry equal marks.*

SECTION – A

Section A consists of 25 questions, attempt any 20 questions.

1. Which of the following statement is wrong ?

   (a) Can't change the index of the Series.

   (b) We can easily convert the list, tuple, and dictionary into a series.

   (c) A Series represents a single column in memory.

   (d) We can create empty Series.

2. What type of error is returned by the following statement ?

```
import pandas as pa
pa.Series([1,2,3,4], index = ['a','b','c'])
```

   (a) Value Error

   (b) Syntax Error

   (c) Name Error

   (d) Logical error

3. Which is incorrect statement for the python package Numpy ?

   (a) It is a general-purpose array-processing package.

   (b) Numpy arrays are faster and more compact

   (c) It is multi-dimensional arrays

   (d) It is proprietary software

4. The data of any CSV file can be shown in which of the following software ?

   (a) MS Word

   (b) Notepad

   (c) Spreadsheet

   (d) All of the above

5. Which python library is not used for data science ?

   (a) Panda

   (b) Numpy

   (c) Matplotlib

   (d) Tkinter

6. Which method is used to Delete row(s) from DataFrame ?

   (a) .drop() method

   (b) .del() method

   (c) .remove() method

   (d) .delete() method

7. Consider the following code :

```
import numpy as np
import pandas as pd
L=np.array([10,20])
x=pd.Series( _____ )    #statement 1
print(x)
```

output of the above code is:

```
0  1000
1  8000
dtype: int64
```


What is the correct statement for the above output in the following statement-1 ?

(a) d=L*3
(b) data=L**3
(c) L*3
(d) [10,20]**3

8. Which library is imported to draw charts in Python ?

(a) csv
(b) matplotlib
(c) numpy
(d) pandas

9. Which of the following would give the same output as DF/DF1 where DF and DF1 are DataFrames.

(a) DF.div(DF1)
(b) DF1.div(DF)
(c) Divide(DF,DF1)
(d) Div(DF,DF1)

10. Which of the following statement is wrong in context of DataFrame ?

(a) Two dimensional size is Mutable.
(b) Can Perform Arithmetic operations on rows and columns.
(c) Homogeneous tabular data structure
(d) Create DataFrame from numpy ndarray

11. Which attribute is not used with DataFrame ?

(a) size
(b) type
(c) empty
(d) columns

12. With the outset of Covid-19 schools started online classes but due to continuous online classes students health issues also started. Health practitioner advised the parents to follow a few health tips. Which of the following health tip should not be suggested ?
    (a) The sitting posture should be correct
    (b) Breaks should be taken in between the online classes.
    (c) To protect the eyes the gadgets should be placed above eye level.
    (d) Wash the eyes regularly.

13. The following is automatically granted to the creator or owner of any invention
    (a) Patent
    (b) Copyright
    (c) Trademark
    (d) License

14. Himanshi sets up her own company to sell her own range of clothes on instagram. What type of intellectual property can she use to show that the clothes are made by his company ?
    (a) Patents
    (b) Copyright
    (c) Design
    (d) Trademark

15. GPL stands for
    (a) Guided Public License
    (b) General Public License
    (c) Global Public License
    (d) General Public Letter

16. E-waste is becoming one of the fastest growing environmental hazards in the world today. If it is not properly treated or disposed of it can cause serious health hazards, therefore The _____ has issued a formal set of guidelines for proper handling and disposal of e-waste.
    (a) Central Pollution Control Board (CPCB)
    (b) Department of Information Technology (DIT)
    (c) Electrical and Electronic Equipment (WEEE)
    (d) Information Communication Technology(ICT)

17. When we create a DataFrame from a list of Dictionaries the columns labels are formed by the
    (a) Union of the keys of the dictionaries
    (b) Intersection of the keys of the dictionaries
    (c) Union of the values of the dictionaries
    (d) Intersection of the values of the dictionaries

18. To change the width of bars in a bar chart, which of the following arguments with a float value is used ?
(a) hwidth
(b) width
(c) breath
(d) barwidth

19. Identify the correct option to select first four rows and second to fourth columns from a DataFrame 'Data'
(a) display(Data.iloc[1 : 4, 2 : 4])
(b) display(Data.iloc[1 : 5, 2 : 5])
(c) print(Data.iloc[0 : 4, 1 : 4])
(d) print(Data.iloc[1 : 4, 2:4])

20. Which of the following command is used to import matplotlib for coding ?
(a) import matplotlib.pyplot as plt
(b) import plt.matplotlib as plt
(c) import py.matplotlib as plt
(d) import pyplot.matplotlib as plt

21. Consider the following statements with reference to Line charts
Statement – A Line graphs is a tool for comparison and is created by plotting a series of several points and connecting them with a straight line.
Statement – B You should never use line chart when the chart is in a continuous data set.
(a) Statement A is correct
(b) Statement B is correct
(c) Statement A is correct but Statement B is incorrect
(d) Statement A is incorrect, but Statement B is correct

22. What is not true about Data Visualization ?
(a) Graphical representation of information and data
(b) Helps users in analyzing a large amount of data in a simpler way.
(c) Data Visualization makes complex data more accessible, understandable, and usable.
(d) No library needs to be imported to create charts in Python language.

23. Which attribute is used with Series to count the total number of NaN values.
(a) size
(b) len
(c) count
(d) count total

24. Consider the following Series in Python :
data = pd.Series([5, 2, 3,7], index=['a', 'b', 'c', 'd'])
Which statement will display all odd values
(a) print(data%2==0)
(b) print(data(data%2!=0))
(c) print(data mod 2!=0)
(d) print(data[data%2!=0])

25. Priya is a student of class 10 and she is a very frequent user of internet applications. One day she got an unpleasant message on her instant messenger. What do you think she should do ?
(a) Start chatting with an unknown person.
(b) talk to her parents/teacher or other trusted adult and let them know that she is feeling uncomfortable.
(c) Ignore the conversation.
(d) She should delete the chat so that no one comes to know.

SECTION – B

Section B consists of 24 question (26 – 49). Attempt any 20 questions

26. What will be the output of the following code ?

```
import pandas as pd
import numpy
s=pd.Series(data=[31,54,34,89,12,23],dtype=numpy.int)
print(s>50)
```

(a)	(b)	(c)	(d)
0 False	1 54	0 31	1 True
1 True	3 89	1 54	3 True
2 False	dtype: int64.	2 34	dtype: bool
3 True		3 89	
4 False		4 12	
5 False		5 23	
dtype: bool		dtype: int64	

27. The primary law in India dealing with cybercrime and electronic commerce is :
(a) India's Technology (IT) Act, 2008
(b) India's Digital Information Technology (DIT) Act, 2000
(c) India's Information Technology (IT) Act, 2000
(d) The Technology Act, 2008

28. Consider the following statement with reference to Trademark and Hacking

Statement 1 : Trademark is a document that provides legally binding guidelines for the use and distribution of software

Statement 2 : Hacking is the act of unauthorized access to a computer network or any digital system

(a) Statement 1 is True but Statement 2 is False
(b) Statement 1 is False but Statement 2 is True
(c) Both the statements are True
(d) Both the statements are False

29. Consider a following DataFrame :

```
import pandas as pd
s=pd.Series(data=[31,54,34,89,12,23])
df=pd.DataFrame(s)
```

Which statement will be used to get the output as 2 ?

(a) print(df.index)
(b) print(df.shape())
(c) print(df.ndim)
(d) print(df.values)

30. Sandhya wants to display the last four rows of the dataframe df and she has written the following command :

```
df.tail()
```

But the first 5 rows are being displayed. To rectify this problem, which of the following statements should be written ?

(a) df.head()
(b) df.last(4)
(c) df.tail(4)
(d) df.rows(4)

31. There is only 1 day left for Ravisha to submit her Science project. Therefore she performed the following activities to complete her task. Which of the following activities can be considered as plagiarism ?

(a) Downloaded the images that were marked as CC and pasted in her project file.
(b) Copied the content from some website and pasted in her file.
(c) Copied the content from the website and gave references about the same in the project.
(d) Downloaded and installed the open source software for typing the synopsis.

32. A contract between the creator and the user to allow the user use his/her work with some price is

(a) Agreement
(b) Copyright
(c) License
(d) Patent

33. Consider the

```
ser=pd.Seri
index=[1,2,
print(ser[4
```

(a)
4 F
5 O
6 R
7 T
8 A
9 B
10 L
11 E
dtype: obje

34. Nowadays
CSV files ra
(a) csv car
(b) csv file
(c) csv file
(d) csv is a

35. Companies
(a) logos,
(b) word,
(c) slogan
(d) compa

36. DataFrame
(a) lists
(c) series

37. Rohit forgo
was missin
(a) Cyber
(c) Theft

38. Consider t
Statemen
row(s
Statemen
indic
(a) State
(b) State
(c) State
(d) State

33. Consider the following series

```
ser=pd.Series(['C','O','M','F','O','R','T','A','B','L','E'],
index=[1,2,3,4,5,6,7,8,9,10,11])
print(ser[4:])
```

(a)	(b)	(c)	(d)
4 F 5 O 6 R 7 T 8 A 9 B 10 L 11 E dtype: object	4 F 5 O 6 R 7 T 8 A dtype: object	4 F 5 O 6 R 7 T 8 A 9 B dtype: object	5 O 6 R 7 T 8 A 9 B 10 L 11 E dtype: object

34. Nowadays for developing Machine learning projects programmers rely on CSV files rather than databases. Why ?
    (a) csv can be used with proprietary softwares only.
    (b) csv files can be downloaded from open source websites free of cost.
    (c) csv files need not be imported while creating the projects
    (d) csv is a simple and well formatted mode for data storage

35. Companies get their Trademark registered to protect ?
    (a) logos, names and brands
    (b) word, phrase, or symbol
    (c) slogans, stylized fonts, and colors.
    (d) company furniture, worker, brands

36. DataFrames can be created from ?
    (a) lists
    (b) dictionaries
    (c) series
    (d) all of the above

37. Rohit forgot his laptop in his car and when he came back he found his laptop was missing. This act is
    (a) Cyber crime
    (b) Phishing
    (c) Theft
    (d) Plagiarism

38. Consider the following statements
    Statement A : .loc() is a label based data selecting method to select a specific row(s) or column(s) which we want to select.
    Statement B : .iloc()can not be used with default indices if customized indices are provided.
    (a) Statement A is True but Statement B is False
    (b) Statement A is False but Statement B is True
    (c) Statement A and Statement B both are False
    (d) Statement A and Statement B both are True

39. Abhay is a student of class 'XII', and he is aware of some concepts of python. He has created the DataFrame, but he is getting errors after executing the code. Help him by identifying the correct statement that will create the DataFrame:

Code :

```
import pandas as pd
stuname=['Muskan','Radhika','Gopar','Pihu']
terml=[70,63,74,90]
term2=[67,70,86,95]
```

(a) df=pd.DataFrame({"Name":stuname,"marks1":terml,"marks2":term2})

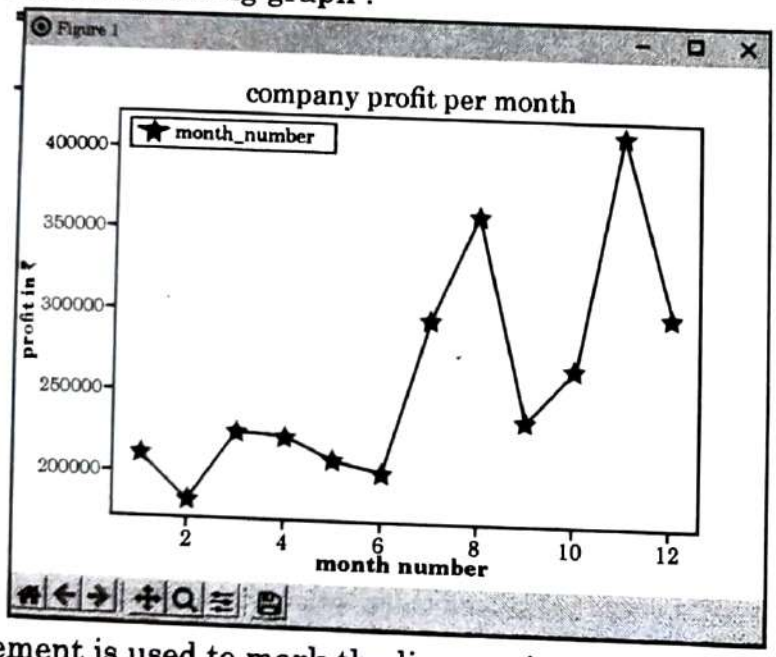
(b) df=pd.dataframe([stuname,terml,term2],columns=['stuName',"marks1", "marks2"])

(c) df=pd.DataFrame({stuname,terml,term2})

(d) df=PD.dataframe({stuname,terml,term2})

40. Ms. Kalpana is working with an IT company, and she wants to create charts from the data provided to her.

She generates the following graph :



Which statement is used to mark the line as given in the above fig. :

(a) plt.plot(x,y,marker='#',markersize=10,color='red',linestyle='dashdot')

(b) plt.plot(x,y,marker='star',markersize=10,color='red')

(c) plt.plot(x,y,marker='@',markersize=10,color='red',linestyle='dashdot')

(d) plt.plot(x,y,marker='*',markersize=10,color='red')

90

41. Mr. Raman created a DataFrame from a Numpy array :

```
arr = np.array([[2, 4, 8], [3, 9, 27],[4,16, 64]])
df=pd.DataFrame(arr,index=['one','two',three'],_____)
print(df)
```

Help him to add a customized column labels to the above DataFrame

(a) columns='no', 'sq', 'cube'

(b) column=['no', 'sq', 'cube']

(c) columns=['no', 'sq', 'cube']

(d) columns=[['no', 'sq', 'cube']]

42. What will be the output of the following program

```
import pandas as pd
dic={'Name':['Sapna','Anmol','Rishul','Sameep'],
'Agg':[56,67,75,76],'Age':[16,18,16,19]}
df=pd.DataFrame(dic,columns=['Name','Age'])
print(df)
```

(a)

	Name	Agg	Age
101	Sapna	56	16
102	Anmol	67	18
103	Rishul	75	16
104	Sameep	76	19

(b)

	Name	Agg	Age
0	Sapna	56	16
1	Anmol	67	18
2	Rishul	75	16
3	Sameep	76	19

(c)

	Name
0	Sapna
1	Anmol
2	Rishul
3	Sameep

(d)

	Name	Age
0	Sapna	16
1	Anmol	18
2	Rishul	16
3	Sameep	19

43. Consider the following code

```
import pandas as pd
S1=pd.Series([23,24,35,56], index=['a','b','c',d'])
S2=pd.Series([27,12,14,15],
index=['b','y','c','ab'])
df=pd.DataFrame(S1+S2)
print(df)
```

Output for the above code will be :

(a)
```
    O
a   NaN
ab  NaN
b   51.0
c   49.0
d   NaN
y   NaN
```

(b)
```
    O
a   50
b   36
c   49
d   71
```

(c)
```
    O
b   50
y   36
c   49
ab  71
```

(d)
```
    O
a   NaN
ab  NaN
b   NaN
c   NaN
d   NaN
y   NaN
```

44. Sudhanshu has written the following code to create a DataFrame with boolean index :

```
import numpy as np
import pandas as pd
df=pd.DataFrame(data=[[5,6,7]],index=[true,false,true])
print(df)
```

While executing the code, she is getting an error, help her to rectify the code:

(a) df=pd.DataFrame([True,False,True],data=[5,6,7])

(b) df=pd.DataFrame(data=[5,6,7],index=[True,False,True])

(c) df=pd.DataFrame([true,false,true],data=[5,6,7])

(d) df=pd.DataFrame(index=[true,false,true],data=[[5,6,7]])

45. The rights of the owner of information to decide how much information is to be shared/exchanged/distributed, are collectively known as _____.

(a) Intelligent Portable Rights (b) Intellectual Property Rights

(c) Interactive Property Rights (d) Instance Portability Rights

46. Abhilasha forgot to sign out from her gmail id and Aditi used Abhilasha's gmail id to send mail. This act of Aditi is considered as

(a) Plagiarism
(b) Identity Theft
(c) Phishing
(d) Piracy

47. The trail that is automatically created when a person uses the internet on any digital devices like Laptops, smart phones, tablets etc is called

(a) Cyberbullying
(b) Phishing
(c) Digital Footprint
(d) Digital Activity

48. _____ operating system comes under FOSS.

(a) Windows
(b) Ubuntu
(c) Mac
(d) Oracle

49. Sushila has created a DataFrame with the help of the following code ;

```
import pandas
EMP={'EMPID' : [ 'E01','E02','E03','E04','E05'],
     'EMPNAME'  :  ['KISHORI','PRIYA','DAMODAR','REEMA','MANOJ'],
     'EMP_SALARY': [67000,34000,68000,90000,43000]
     }
df=pandas.DataFrame(EMP,index=['001','002','003','004','005'])
print(df.loc[0:3,:])
```

and she wants to get the following output

EMPID	EMPNAME	EMP_SALARY
001 E01	KISHORI	67000
002 E02	PRIYA	34000
003 E03	DAMODAR	68000

Help her to correct the code

(a) print(df.iloc['001':'003',:])
(b) print(df.loc['001':'003',:])
(c) print(EMP[loc[0:3,:]])
(d) print(df.loc['001':'004',:])

SECTION – C

Section C consists of 6 questions(50-55). Attempt any 5 questions

Case Study

Ms Ramdeep Kaur maintains the records of all students of her class. She wants to perform some operations on the data:

Code :

```
import pandas as pd
t= {'Rollno':[101,102,103,104,105,106,107],
'Name':[Shubrato''Krishna','Pranshu','Gurpreet','Arpit',
'Sanidhya','Aurobindo'],
'Age':[15,14,14,15,16,15,16],
'Marks':[77.9,70.4,60.9,80.3,86.5,67.7,85.0],
'Grade':['11B','11A','11B','11C','11E','11A','11C']}
df = pd.DataFrame(t,index=[10,20,30,40,50,60,70])
print(df)
```

Output of the above code :

	Rollno	Name	Age	Marks	Grade
10	101	Shubrato	15	77.9	11B
20	102	Krishna	14	70.4	11A
30	103	Pranshu	14	60.9	11B
40	104	Gurpreet	15	80.3	11C
50	105	Arpit	16	86.5	11E
60	106	Sanidhya	15	67.7	11A
70	107	Aurobindo	16	85.0	11C

Based on the given information, answer questions No. 50-55.

50. Select the correct statement for the below output:

Name	**Krishna**
Age	14
Marks	70.4
Grade	11A
Name : 20,	dtype: object

(a) print(df.iloc[2])
(b) print(df.loc[2])
(c) print(df.iloc[20])
(d) print(df.loc[20])

In given output, Rollno is missing, Otherwise D.

51. The teacher wants to know the marks secured by the second last student only. Which statement would help her to get the correct answer ?

(a) print(df.loc[60:70,'Marks'])
(b) print(df.loc[60:60,'Marks'])
(c) print(df.iloc[–2:–2],['Marks'])
(d) print(df[-2:-2]['Marks'])

52. Which of the following statement(s) will add a new column 'fee' at second position with values [3200,3400,4500,3100,3200,4000,3700] in DataFrame df ?

(a) df.insert(loc=2,colurnn='fee',value=[3200,3400,4500,3100,3200,4000, 3700])
(b) df.add(2,column='fee',[3200,3400,4500,3100,3200,4000,3700])
(c) df.append(loc=2,'fee'=[3200,3400,4500,3100,3200,4000,3700])
(d) df.insert(loc=2,'fee',[3200,3400,4500,3100,3200,4000,3700])

53. Which of the following commands is used to delete the column 'Grade' in the DataFrame df ?

(a) df.drop('Grade',axis=l,inplace=True)
(b) df.drop('Grade',axis=0,inplace=True)
(c) df.drop['Grade',axis=l,inplace=True]
(d) df.delete('Grade',axis=l,inplace=True)

54. Which of the following commands would rename the column 'Marks' to 'Halfyearly' in the DataFrame df ?

(a) df.rename(['Marks','Halfyearly'],inplace=True)
(b) df.rename({'Marks','Halfyearly'},inplace=True)
(c) df.rename(columns={'Marks':'Halfyearly'},inplace=True)
(d) df.rename(['Marks':'Halfyearly'],inplace=True)

55. Which of the following commands will display the Names and Marks of all students getting more than 80 marks ?

(a) print(df.loc['Marks'>80,['Name','Marks']])
(b) print(df.loc[df['Marks']<80,'Name','Marks'])
(c) print(df.loc[df['Marks']<80,['Name','Marks']])
(d) print(df.loc[df['Marks']>80,['Name','Marks']])