KENDRIYA VIDYALAYA SANGATHAN, LUCKNOW REGION

Pre-Board Examination Term-I

Subject: Informatics Practices (Code-065) **Time Allowed: 90 minutes**

Class – XII **Maximum Marks: 35**

General Instructions:

1. The paper is divided into 3 Sections- A, B and C.
2. Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
3. Section B, consists of Question number 26 to 49 and student need to attempt 20 questions.
4. Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
5. All questions carry equal marks (0.77 for each).

Section – A

Section A consists of 25 questions, attempt any 20 questions

1 Consider a series
S= pd.Series(10, index=[10,20,30]).
What will be output of the following command?
>>> print(S[20])
a. error b. 20 c. 10 d. 30

2 Which of the following object you get after reading CSV file by using pandas?
a) DataFrame
b) Character Vector
c) Panel
d) All of the mentioned

3 Observe the following code :

```
import pandas as pd
data = {
 "calories": [420, 380, 390],
 "duration": [50, 40, 45]
}
df = pd.DataFrame(data)
```

What will be the output of
>> **print(df.loc[0])**

a)
```
calories    420
duration    380
Name: 0, dtype: int64
```

b)
```
calories    420
duration     50
Name: 0, dtype: int64
```

c)
```
calories    390
duration     45
Name: 0, dtype: int64
```

d)
```
calories    0
duration    0
Name: 0, dtype: int64
```

4 The command used to create an empty series as Series([ ], dtype: float64)
a) S=pd.Series( )
b) S=pd.Series(np.Nan)
c) S=pd.Series(empty)
d) None of these

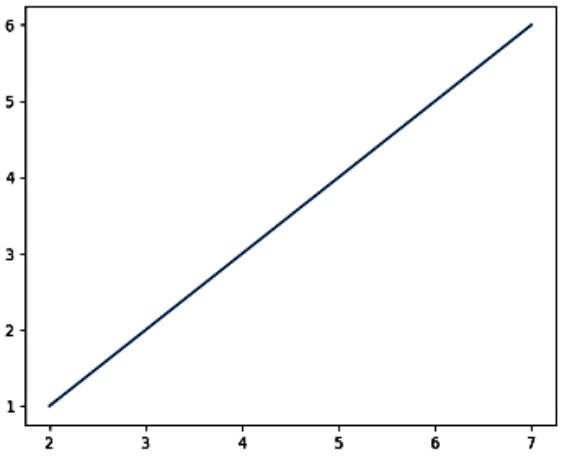
5	In a Series, to know about the dimensions(number of axis), we use a) <objectname>.ndim b) <objectname>.dim c) <objectname>.nsize d) <objectname>.nbytes
6	Identify the code to put the values along with missing values in a series a) Obj=pd.Series([7.2,NaN,7.3]) b) Obj=pd.Series([7.2,np.NaN,7.3]) c) Obj=pd.Series([7.2,NULL,7.3]) d) Obj=pd.Series([7.2,NaN.np,7.3])
7	Using Python Matplotlib, out of the following which can be used to count how many values fall into each interval a) Line plot b) Bar graph c) Histogram d) Charts
8	Which of the following is not a valid plotting function in pyplot? a) bar( ) b) hist( ) c) histh( ) d) barh( )
9	Which of the following functions is used to check the number of rows in a DataFrame? a) print(length(df)) b) print(length.df) c) print(len(df)) d) print(length[df])
10	_____ command is used to display a graph in the output window. a) plt.title( ) b) plt.xlabel( ) c) plt.show( ) d) plt.plot( )
11	In given code dataframe 'D1' has _____ rows and _____ columns. **import pandas as pd** **LoD = [{'a':10, 'b':20}, {'a':5, 'b':10, 'c':20},{'a':7, 'd':10, 'e':20}]** **D1 = pd.DataFrame(LoD)** a) 3, 3 b) 3, 4 c) 3, 5 d) None of the above
12	_____ is an attempt to steal, spy, damage or destroy computer systems, networks or their associated information. a. Cyber-security a) Cyber attack b) Digital hacking c) Computer security
13	The full form of Malware is _____ a) Malfunctioned Software b) Multipurpose Software c) Malicious Software d) Malfunctioning of Security

14	By encryption of a text we mean a) Compressing it b) Expanding it c) Scrambling it to preserve its security d) Hashing it
15	Which of the following is not a type of cybercrime? a) Data theft b) Forgery by using electronic media specially Internet c) Damage to data and systems intentionally d) All above
16	Online posting of rumours, giving threats online, posting the victim's personal information, comments aimed to publicly ridicule a victim is termed as _____ a) Cyber bullying b) Digital Signature c) Cyber insult d) d. All of the above
17	Online personal account, personal websites are examples of: a. Digital Wallet b. Digital Property c. Digital Certificate d. Digital Signature
18	A _____ is a unique data trace of a user's activities, actions, communications or transactions in digital media. a. Digital Handprint b. Digital Footprint c. Offline Footprint d. Offline Handprint
19	After practical, Monika left the computer laboratory but forgot to sign off from her email account. Later, her classmate Sonam started using the same computer. She is now logged in as Monika. She sends inflammatory email messages to few of her classmates using Monika's email account. Sonam's activity is an example of which of the following cyber-crime? a) Plagiarism b) Hacking c) Identity theft d) Cyber bullying
20	_____ are websites or applications that enable users to participate by creating and sharing content with others in the community. a. Social media b. Social channel c. Social networking d. None of the above
21	Which method is used to access vertical subset of a DataFrame? a. iterrows( ) b. iteritems( ) c. itertuples( ) d. itercols( )
22	The legal and regulatory aspects of the Internet refer to _____. a) Cyber Space b) Cyber crime c) Criminal law d) IT Act

23	Assume an empty DataFrame df. The command, **df.loc['a'] = ['A', 'B', 'C']** will add a new a. Row to the DataFarme b. A new column to the DataFrame c. Will generate an error d. None
24	Function used to delete a row from a DataFrame is: a. remove( ) b. delete( ) c. del d. drop( )
25	By default the plot function plots a _____ a) Histogram b) Pie chart c) Pie chart d) Line chart

Section – B

Section B consists of 24 Questions (26 to 49). Attempt any 20 questions.

26	Consider the following graph (Figure 26). Identify the code to plot it. a. import matplotlib.pyplot as plt plt.plot ([2,7],[1,6]) plt.show( ) b. import matplotlib.pyplot as plt plt.plot([1,6],[2,7]) plt.show( ) c. import matplotlib.pyplot as plt plt.plot([2,3],[5,1]) plt.show( ) d. import matplotlib.pyplot as plt plt.plot([1,3],[4,1]) plt.show( )  Figure for Question 26
27	How many values will be there in array1, if given code is not returning any error? >>> series4 = pd.Series(array1, index = ["Del", "Che", "Mub", "Agr"]) **a. 1 b. 2 c. 3 d. 4**
28	Read the statements given below and identify the right option **Statement A**: A Line plot is a graph that shows the frequency of a data along a number line. **Statement B**: The legend is displayed by default associating the colours with the plotted data. a. Statement A and B are correct and Statement B is correct Explanation of statement A. b. Statement A and B are correct and Statement B is not correct Explanation of statement A. c. Statement A is correct, but Statement B is incorrect d. Statement A is incorrect, but Statement B is correct
29	Which of the following statement will create an empty series named "S1"? a. S1 = pd.Series(None) b. S1 = pd.Series( ) c. Both of the above d. None of the above

30	How many elements will be there in the series named "S1"?
	>>> S1 = pd.Series(range(5))
	>>> print(S1)
	a. 5 b. 4 c. 6 d. None of the mentioned

31	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

32	The fraudulent practice of directing internet users to a bogus website that mimics the appearance of legitimate one in order to obtain personal information such as passwords, accounts numbers etc. This is known as _____ a) Eavesdropping b) Pharming c) Bulling d) Trolling
33	All pandas data structures are _____ mutable but not always _____ mutable. a) size, value b) semantic, size c) value, size d) none of the mentioned
34	_____is the practice of taking someone else's work or ideas and passing them off as one's own: a. Plagiarism b. Copyright c. Patent d. All of the above
35	Abdul deleted all his chats from all his social media accounts, and he thinks that all his traces are deleted completely. Is he right in thinking so? a. Yes b. No c. May be d. Not sure
36	Which function will be used to read data from a CSV file into pandas data frame? a. readcsv( ) b. to_csv( ) c. read_csv( ) d. csv_read( )
37	_____ operating system come under FOSS. a. Ubuntu b. iOS c. Mac d. Windows
38	_____ package come under FOSS. a. Libre Office b. Open Office c. Both of the above d. None of the above
39	What will be the output for the following code ? import pandas as pd import numpy as np S = pd.Series (np.random.randn(2)) print (S.size) **(a) 0 (b) 1 (c) 2 (d) 3**

40	The correct statement to read from a CSV file in a dataframe is : (a) <DF>.read_csv(<file>) (b) <File>. read_csv( )(<DF>) (c) <DF> = pandas.read(<file>) (d) <DF> = pandas.read_csv(<files>)
41	Assuming the given series, named stud, which command will be used to print 5 as output? Amit 90 Ramesh 100 Mahesh 50 John 67 Abdul 89 Name: Student, dtype: int64 a. stud.index b. stud.length c. stud.values d. stud.size
42	A social science teacher wants to use a pandas series to teach about Indian historical monuments and its states. The series should have the monument names as values and state names as indexes which are stored in the given lists, as shown in the code. Choose the statement which will create the series: **import pandas as pd** **Monument=['Qutub Minar','Gateway of India','Red Fort','Taj Mahal']** **State=['Delhi','Maharashtra','Delhi','Uttar Pradesh']** a. S=pd.series(Monument,index=State) b. S=pd.Series(Monument,index=State) c. S=pd.Series(State,Monument) d. S=df.Series(Monument,index=State)
43	Which command will be used to delete 3 and 5 rows of the data frame? Assuming the data frame name as DF. a. DF.drop([2,4],axis=0) b. DF.drop([2,4],axis=1) c. DF.drop([3,5],axis=1) d. DF.drop([3,5])
44	Radhika is a new learner for the python pandas, and she is aware of some concepts of python. She has created some lists, but is unable to create the data frame from the same. Help her by identifying the statement which will create the data frame. **import pandas as pd** **Name=['Manpreet','Kavil','Manu','Ria']** **Phy=[70,60,76,89]** **Chem=[30,70,50,65]** a. df=pd.DataFrame({"Name":Name,"Phy":Phy,"Chem":Chem}) b. d=("Name":Name,"Phy":Phy,"Chem":Chem) df=pd.DataFrame(d) c. df=pd.DataFrame([Name,Phy,Chem],columns=['Name',"Phy","Chem","Total"]) d. df=pd.DataFrame({Name:"Name", Phy :"Phy",Chem: "Chem"})

45	Difference between loc() and iloc(): a. Both are Label indexed based functions. b. Both are Integer position-based functions. c. loc() is label based function and iloc( ) integer position based function. d. loc() is integer position based function and iloc( ) index position based function.
46	What we are doing in the following statement? dF1=dF1.append(dF2) #dF1 and dF2 are DataFrame object a. We are appending dF1 in dF2 b. We are appending dF2 in dF1 c. We are creating Series from DataFrame d. None of the above
47	Write the output of the statement **>>>df.shape** if df has the following structure. Name Class Rollno 0 Amit 6 1 1 Anil 7 2 2 Ravi 8 3 a. (3, 4) b. (4, 3) c. (3, 3) d. None of the above
48	Write the output of the statement >>>df.empty , if df has the following structure: Name Class Rollno 0 Amit 6 1 1 Anil 7 2 2 Ravi 8 3 a. True b. False c. 0 d. None of the above
49	To read specific number of rows from CSV file, which argument is to be given in read_csv ( ) ? (a) rows = <n> (b) nrows = <n> (c) n_rows - <n> (d) number_rows = <n>

Section C

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

	Case Study Rabhat made following data frame as df.

	Rollno	Name	Marks
0	101	Mayank	89
1	102	Harish	91
2	103	Divya	92

50	Which statement will print the size of the data frame ? a. print(df.size) b. print(df.Size) c. print(df.Size( )) d. print(df.size( ))
51	Choose the Python statement to display only name of student of last two rows of above data frame. a) df.loc[0:2,'Name') b) df.loc[0:1,0:1]) c) df.loc[0:2,1] d) df.loc[1:2,'Name']
52	Salvia, a student needs to display the record of student whose roll number is 103. Help her to identify the correct set of statement/s from the given options : (a) df1=df[df['rollno']==103] print(df1) (b) df1=df[rollno==103] print(df1) (c) df1=df[df.rollno=103] print(df1) (d) df1=df[df.rollno==103] print(df1)
53	What will be the output of **print(df.loc[: 1,'Rollno' : 'Marks'])** a) b) c) d)
54	Which of the following command will display the column labels of the DataFrame? (a) print(df.columns( )) (b) print(df.column( )) (c) print(df.column) (d) print(df.columns)
55	The class teacher wants to add a new column, Grade with the values, 'B', 'A', 'A', to the DataFrame. Help her choose the command to do so: (a) df.column=['B','A','A'] (b) df ['Grade']=['B','A','A'] (c) df.loc['Grade'] =['B','A','A'] (d) Both (b) and (c) are correct

a)

	Rollno	Name	Marks
0	101	Mayank	89
1	102	Harish	91

b)

	Rollno	Marks
0	101	89

c)

	Rollno	Name	Marks
2	103	Divya	92

d)

	Rollno	Marks
2	103	92

--x-

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Pre-Board Examination Term-I

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Class – XII **Maximum Marks: 35**

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- The paper is divided into 3 Sections- A, B and C.
- Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
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Answer Key

Ques.No	Correct Opt		Ques.No	Correct Opt		Ques.No	Correct Opt
1	C		21	B		41	D
2	A		22	D		42	B
3	B		23	C		43	C
4	A		24	A		44	A
5	A		25	D		45	C
6	B		26	A		46	B
7	C		27	D		47	C
8	C		28	B		48	B
9	C		29	C		49	B
10	C		30	A		50	A
11	C		31	A		51	D
12	B		32	B		52	A
13	C		33	C		53	A
14	C		34	A		54	D
15	D		35	B		55	B
16	A		36	C			
17	B		37	A			
18	B		38	C			
19	C		39	C			
20	A		40	D			

Practice Test Paper
Term-I
Subject: Informatics Practices (Code-065)
Class – XII

Time Allowed: 90 minutes | Maximum Marks: 35

General Instructions:

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- All questions carry equal marks.

Section – A

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

1.	Pandas provide _____ types of data structures. a) Two b) One c) Three d) Four
2.	Which of the following is false for Pandas? a) Numpy gets automatically installed when Pandas is installed. b) Pandas can be installed without Python installed in the PC. c) Pandas DataFrame is a two-dimensional data structure d) Pandas is a python library for data analysis.
3.	Pandas Series is _____ and _____ a) Heterogenous, size mutable b) Heterogenous, size immutable c) Homogenous, size immutable d) Homogenous, size mutable
4.	Which of the following sequence is correct for Pandas? a) Load, prepare, model, manipulate, analyze b) Load, model, prepare, manipulate, analyze c) Load, prepare, manipulate, model, analyze, d) Load, model, manipulate, prepare, analyze
5.	For the Series data=pandas.Series([10,20,30,40,50]), which of the following will give you answer as 5. a) data.index b) data.size c) data.values d) data.shape
6.	Which of the following data types is not allowed to be used as index for a DataFrame? a) String b) Integer c) Alphabets d) Lists
7.	Which function in matplotlib is used to display a graph? a) plot() b) show() c) display() d) print()
8.	How many edges are present in a histogram? a) bins b) bins+2 c) bins+1 d) Always 10

9.	Which of the following functions is used to add a column to an existing DataFrame? a) append() b) insert() c) concat() d) add()
10.	Which of the following is not an attribute in bar() function while plotting? a) alpha b) linestyle c) colour d) width
11.	The digital data trail we leave online intentionally is called_____ a) Passive digital footprint b) Active digital footprint c) Latest digital footprint d) Action digital footprint
12.	Which of the following activity is an example of leaving passive digital footprints? a) A website logging the IP address. b) Sending E-mail to a friend c) Posting a comment on Facebook d) All the above.
13.	Hacking, when done with a malicious intent, is called _____ a) Ethical hacking b) Active hacking c) Passive hacking d) Cracking
14.	Which is the correct function for reading a csv file into pandas a) readcsv() b) read-csv() c) read_csv() d) csv_read()
15.	Which of the following is not a IPR infringement? a) Plagiarism b) Trademark infringement c) Patent infringement d) Copyright infringement.
16.	A _____ is some lines of malicious code that attaches itself to a host file in the target PC to cause damage to the system. a) Worm b) Virus c) Trojan d) Adware
17.	Which attribute of a DataFrame returns the number of rows and columns as a tuple? a) size b) T c) index d) shape
18.	Logo of the software company will be protected by _____ a) Trademark b) Patent c) Copyright d) License

19.	Which function in Pandas is used to remove a row or a column from a DataFrame? a) reject() b) delete() c) remove() d) drop()
20.	What is the good way to dispose e-waste? a) Throw it in the garbage bin b) Sell it to a local scrap dealer c) Deposit with a registered E-waste dealer d) Burn it in your backyard
21.	What was the main purpose of Indian IT Act 2000? a) Providing Legitimacy to Digital Certificate b) Granting legal recognition to E-commerce c) Providing laws against Cyber Crimes. d) All the above.
22.	Which of the following is an example of FOSS Operating System? a) Open Office b) Firefox c) Ubuntu Linux d) IOS
23.	Pandas DataFrame can be created using a) List of Dictionaries b) Dictionary of lists c) Dictionary of Dictionaries d) All the above
24.	Which method in Pandas can be used to add multiple rows to a DataFrame? a) append() b) add() c) extend() d) concat()
25.	For a given DataFrame df, which statement will change the values for every row of a given column 'Rate' to 100 a) df.rate=100 b) df['rate']=100 c) Both a) and b) d) Only b)

Section – B

Section B consists of 24 Questions (26 to 49). Attempt any 20 questions.

26.	What will be the output of the following code? import pandas as pd arr = [1,2,3,4] d = pd.Series(data = arr*2) print(d[4]) a) 2 b) 5 c) 8 d) 1
27.	Which of the following statements will create a Series object? a) s = pandas.series() b) s = pandas.Series() c) s = pandas.Series([1,2,3,4,5]) d) Both b) and c) can create a Series object.

28. What will be the output of the given Series operation?

```
import pandas as pd
data = pd.Series([2,4,6,8,10], index=['a','b', 'c','d','e'])
print(data[1:4:2])
```

a)
```
b    4
d    8
dtype: int64
```

b)
```
a    2
c    6
dtype: int64
```

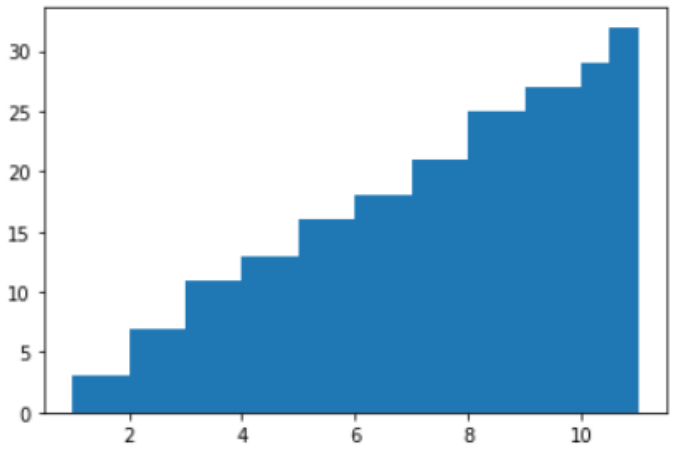
c)
```
a    2
b    4
dtype: int64
```

d)
```
b    4
c    6
dtype: int64
```

29. A _____ is a type of intellectual property that gives its owner the legal right to exclude others from making, using, or selling an invention for a limited period of years.

a) Copyright
b) Trademark
c) License
d) Patent

30. Observe the given plot and identify the correct set of statements, that created it.

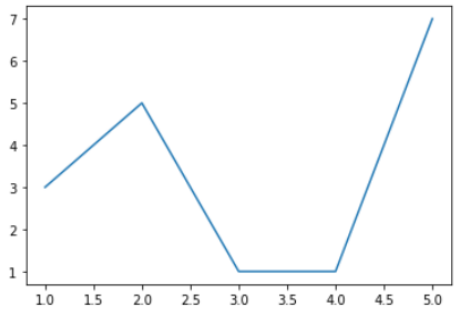


a)
```
import matplotlib.pyplot as plt
data = [1,2,3,4,5,1,2,3,2,5,6,7,2,1,3,3,4,5,6,7,7,8,8,8,8,9,9,10,10,11,11,11]
plt.hist(data, bins=15, histtype='cumulative')
plt.show()
```

b)
```
import matplotlib.pyplot as plt
data = [1,2,3,4,5,1,2,3,2,5,6,7,2,1,3,3,4,5,6,7,7,8,8,8,8,9,9,10,10,11,11,11]
plt.hist(data, bins=15, histtype='barstacked')
plt.show()
```

c)
```
import matplotlib.pyplot as plt
data = [1,2,3,4,5,1,2,3,2,5,6,7,2,1,3,3,4,5,6,7,7,8,8,8,8,9,9,10,10,11,11,11]
plt.hist(data, bins=15, cumulative=True)
plt.show()
```

d)
```
import matplotlib.pyplot as plt
data = [1,2,3,4,5,1,2,3,2,5,6,7,2,1,3,3,4,5,6,7,7,8,8,8,8,9,9,10,10,11,11,11]
plt.hist(data, bins=15, barstacked=True)
plt.show()
```

31.	Read the statements given below and identify the right option to draw a bar graph. **Statement A**: To make a bar graph in matplotlib, we need to use the bar() function **Statement B**: A bar chart describes the comparisons between the discrete categories. a) Only Statement A is correct b) Only Statement B is correct c) Both statements A and B are incorrect d) Both statements A and B are correct
32.	Minimum, how many datapoints are there in the given line graph.  a) 2 b) 3 c) 4 d) 5
33.	_____is a set of strategies and processes you can use to secure the privacy, availability, and integrity of your data. a) Data integrity b) Data protection c) Data sanitization d) Data vandalization
34.	Consider the following statements while using internet: Statement A: Always make real people a priority Statement B: Include anonymous people in conversation Statement C: Respect people's privacy Statement D: Respond to all emails promptly. Which of the above statements are legitimate net-etiquettes? a) Statement A and B b) Statement A and D c) Statement B and C d) Statement A and C
35.	Which of the following Pandas series operations will produce the given output: a 8 b 9 f 6 g 7 dtype: int64 a) import pandas as pd s = pd.Series([8,9,3,5,2,6,7],index = ['a','b','c','d','e','f','g']) print(s>5) b) import pandas as pd s = pd.Series([8,9,3,5,2,6,7],index = ['a','b','c','d','e','f','g']) print(s[s>5]) c) import pandas as pd s = pd.Series([8,9,3,5,2,6,7],index = ['a','b','c','d','e','f','g']) print(s[0::2]) d) import pandas as pd s = pd.Series([8,9,3,5,2,6,7],index = ['a','b','c','d','e','f','g']) print(s[s>=5])

36. Stella, a student of class 11 is an active social media user. Of late she started receiving obscene text and images in her messenger. What do you think she should do?

a) Ignore the messages and continue using social media.
b) Block the messages and ignore the harassment she faced with the messages.
c) Block the user and complain to local Cyber cell by the help of parents
d) Stop using social media.

37. Which of the following statements will print the first and second rows in the given DataFrame df?

	rollno	name	marks
a	101	Pat	90
b	102	Sid	40
c	103	Tom	50
d	104	Kim	80
e	105	Ray	65

a) df ['a':'b']
b) df.loc ['a':'b']
c) df.loc[0:1]
d) df[0:1]

38. Which of the following is not a cause for e-waste?

a) Growth in technology
b) Improper dumping of discarded electronic devices.
c) Population getting tech savvy.
d) Population getting poorer.

39. Which of the following statements is false?

a) iloc[] is integer position based slicing.
b) In loc[] the value at end index label is ignored.
c) In iloc[] we can use step parameter too.
d) loc[] can be used to modify data in a DataFrame.

40. What will be the output of the given program based on Pandas Series?

```
import pandas as pd
s = pd.Series([5,10,15,20],index = ['a','b','c','d'])
p = s[2:]
p[0]=100
print(s)
```

a)
```
a      5
b    100
c     15
d     20
dtype: int64
```

b)
```
a      5
b     10
c     15
d    100
dtype: int64
```

c)
```
a    100
b     10
c     15
d     20
dtype: int64
```

d)
```
a      5
b     10
c    100
d     20
dtype: int64
```

41. Which of the following is not a violation of IPR?

a) Using a logo of a registered firm without permission.
b) Using patented formula of another firm for financial gains.
c) Forwarding an email received from someone to a friend.
d) Writing copyrighted software on CD and selling them for profit.

42. For the given DataFrame df, which statement is going to delete the row s3?

```
    rollno name  marks
s1     101  Pat     90
s2     102  Sid     40
s3     103  Tom     50
s4     104  Kim     80
s5     105  Ray     65
```

a) df.drop(labels= 's3')
b) df.drop('s3', axis=0)
c) df.drop('s3', axis=1)
d) Both a) and b)

43. What will be the output of the following Series operation?

```
import pandas as pd
s = pd.Series([2,3,4,5,6], index=['a','b','c','d','e'])
print(s%3==0)
```

a)
```
a     True
b    False
c     True
d    False
e     True
dtype: bool
```

b)
```
a    False
b    False
c     True
d    False
e    False
dtype: bool
```

c)
```
a    False
b     True
c    False
d    False
e     True
dtype: bool
```

d)
```
a    False
b    False
c    False
d     True
e    False
dtype: bool
```

44. Robin wants to create a DataFrame from the three lists given below. The data for each column in the DataFrame will be derived from the three lists respectively. Help him with the correct solution to create the DataFrame.

```
name=['TOM','BOB','JIM']
age = [17,16,15]
hobby = ['Soccer','Dance','Music']
```

a) df = pd.DataFrame([name,age,hobby], columns=['Name','Age','Hobby'])
b) df = pd.DataFrame({'Name':name, 'Age':age,'Hobby':hobby})
c) df = pd.DataFrame([{'Name':name},{'Age':age},{'Hobby':hobby}])
d) df = pd.DataFrame((name, age,hobby), columns=['Name','Age','Hobby'])

45. India introduced Section _____ in its amendment of IT Act in 2008, which penalized sending "offensive messages".

a) 66C
b) 66A
c) 66B
d) 66D

46. Based on the following DataFrame, what will be the output of the given statement.

```
   country  population  income
A   India         130    1000
B   China         150    1200
C      UK          25    5000
D     USA          50    7000
E   Japan          10   10000
```

```
df.loc[df.population>100,'income']=1500
print(df)
```

a)

	country	population	income
A	India	130	1500
B	China	150	1500
C	UK	25	5000
D	USA	50	1500
E	Japan	10	10000

b)

	country	population	income
A	India	130	1500
B	China	150	1500
C	UK	25	5000
D	USA	50	7000
E	Japan	10	10000

c)

	country	population	income
A	India	130	1000
B	China	150	1500
C	UK	25	5000
D	USA	50	7000
E	Japan	10	10000

d)

	country	population	income
A	India	130	1500
B	China	150	1200
C	UK	25	5000
D	USA	50	7000
E	Japan	10	10000

47. Considering the given DataFrame df , what will be the output of the statements that follows?

	Marks	Grade
Excellent	90	A
Very Good	75	B
Good	60	C
Average	45	D

```
print(df.iloc[1:3,:])
```

a)

	Marks	Grade
Good	60	C
Average	45	D

b)

	Marks	Grade
Excellent	90	A
Very Good	75	B

c)

	Marks	Grade
Very Good	75	B
Good	60	C

d)

	Marks	Grade
Excellent	90	A
Good	60	C

48. How many rows and columns are there in the DataFrame created out of the following satements?

```
import pandas as pd
df = pd.DataFrame([[90,'A'],[75,'B',5],[60,'C'],[45,'D',8]])
```

a) 3 rows and 4 columns
b) 4 rows and 3 columns
c) 4 rows and 4 columns
d) 3 rows and 3 columns

49. Read the following statements and identify the right option that justifies the statements.
Statement A: Pandas DataFrame can be thought of as a dictionary-like container for Series objects
Statement B: Pandas DataFrames are containers for homogenous datatypes.

a) Statement A is correct and statement B is incorrect
b) Both statements are correct
c) Both statements are incorrect
d) Statement B is correct and statement A is incorrect

Section - C

Section C, consists of 6 Question (50 to 55).

Attempt any 5 questions.

Case Study

	Harshit created a DataFrame for his research work with Python Pandas. The code for the DataFrame and its output is as under. He wants to perform some opertions on his DataFrame. Help him with correct code options.
	import pandas as pd
	d1 = {'rollno':[101,102,103,104,105], 'name': ['Pat','Sid','Tom','Kim','Ray'],\
	'marks':[90,40,50,80,65]}
	df1 = pd.DataFrame(d1)
	df1.index = ['a','b','c','d','e']
	`    rollno name  marks`
	`a     101  Pat     90`
	`b     102  Sid     40`
	`c     103  Tom     50`
	`d     104  Kim     80`
	`e     105  Ray     65`

50.	Help him with the addition of a column grade with data ['A','D','C','B','C'] a) df1.add('grade',['A','D','C','B','C']) b) df1['grade']= ['A','D','C','B','C'] c) df1.grade=['A','D','C','B','C'] d) pd.grade=['A','D','C','B','C']
51.	Help him to add 5 marks to the students who got more than 80. a) df1['marks']>80=df1.marks+5 b) df1.loc[df1.marks>80]=df1.marks+5 c) df1.loc[df1.marks>80,'marks']=df1.marks+5 d) None of the above.
52.	Help him to display the last two rows of the DataFrame a) print(df1.tail()) b) print(df1[tail(2)]) c) print(pd.tail(2)) d) print(df1.tail(2))
53.	Help him to delete the first two rows in the DataFrame so that the original DataFrame gets modified a) df1.drop(['a','b'], axis=0, inplace=True) b) df1.drop([0:2], axis=0, inplace=True) c) df1.drop(df1.loc(['a','b'], axis=1, inplace=False) d) df1.drop(['a','b'], axis=0, inplace=False)
54.	Help him to display the number of rows and columns in his DataFrame a) df1.index b) df1.size c) df1.shape d) df1.hasnans
55.	Help him to get the rows reversed and saved in another DataFrame df2 a) df2=df1.loc[::-1] b) df2=df1.reindex(['e','d','c','b','a']) c) df2=df1.iloc[::-1] d) Both b) and c) are correct

KENDRIYA VIDYALAYA NO. 1 JALAHALLI WEST

OMR ANSWER SHEET

Name of Exam: Practice Test Subject: IP

Name of the Student: Ashok

Class & Section: Date of Exam:

Roll No: Invigilator's signature

WRONG METHODS

CORRECT METHOD

Que	A	B	C	D		Que	A	B	C	D		Que	A	B	C	D	
1	○	○	●	○	☐	21	○	●	○	○	☐	41	○	○	●	○	☐
2	○	●	○	○	☐	22	○	○	●	○	☐	42	○	○	○	●	☐
3	○	○	●	○	☐	23	○	○	○	●	☐	43	○	○	●	○	☐
4	○	○	●	○	☐	24	○	○	○	●	☐	44	○	●	○	○	☐
5	○	●	○	○	☐	25	○	○	●	○	☐	45	○	●	○	○	☐
6	○	○	○	●	☐	26	○	○	○	●	☐	46	○	●	○	○	☐
7	○	●	○	○	☐	27	○	○	○	●	☐	47	○	○	●	○	☐
8	○	○	●	○	☐	28	●	○	○	○	☐	48	○	●	○	○	☐
9	○	●	○	○	☐	29	○	○	○	●	☐	49	●	○	○	○	☐
10	○	○	●	○	☐	30	○	○	●	○	☐	50	○	●	○	○	☐
11	○	●	○	○	☐	31	○	○	○	●	☐	51	○	○	●	○	☐
12	●	○	○	○	☐	32	○	○	○	●	☐	52	○	○	○	●	☐
13	○	○	○	●	☐	33	○	●	○	○	☐	53	●	○	○	○	☐
14	○	○	●	○	☐	34	○	○	○	●	☐	54	○	○	●	○	☐
15	●	○	○	○	☐	35	○	●	○	○	☐	55	○	○	○	●	☐
16	○	●	○	○	☐	36	○	○	●	○	☐	56	○	○	○	○	☐
17	○	○	○	●	☐	37	○	●	○	○	☐	57	○	○	○	○	☐
18	●	○	○	○	☐	38	○	○	○	●	☐	58	○	○	○	○	☐
19	○	○	○	●	☐	39	○	●	○	○	☐	59	○	○	○	○	☐
20	○	○	●	○	☐	40	○	○	○	●	☐	60	○	○	○	○	☐

Instructions for filling the sheet:

1) This sheet should not be folded.
2) Use only BLUE/BLACK ball point pen to fill circles.
3) Don't use pencil.
4) There is no negative marking for a wrong answer.
5) Filling two circles against any question will lead to Disqualification of that question.
6) In addition to filling the circle, the student should write the correct option in the box given.

For Examiner's Use:
Total Marks Obtained

Examiner's Signature

KENDRIYA VIDYALAYA SANGATHAN

TERM 1 - 2021 Informatics Practices Class XII

Max. Marks: 35 Duration: 03:00 Hrs

General Instructions :

- *Each question carries 1 mark.*

	SECTION A solve any 20 – first 20 will be considered out of your solution
1.	CSV stands for: (a) Comma Separated Variables (b) Comma Separated Variables (c) Column Separated Values (d) Column Separated Values
2.	In a dataframe, axis-0 is for (a) Rows (b) Columns (c) Rows and Columns both (d) None of these
3.	To get the number of elements in a dataframe, _____ attribute may be used. (a) size (b) shape (c) values (d) ndim
4.	To suppress first row as header, which of the following arguments is to be given in read_csv( )? (a) header = None (b) noheader = True (c) skipheader = True (d) header = Null
5.	Which argument in hist() is used to create a stacked bar type histogram ? (a) histt (b) histtype (c) type (d) barstacked
6.	The datapoints plotted on a graph are called __. (a) points (b) pointers (c) markers (d) marks
7.	Sudhanshu has deleted all his chats from all his social media accounts, and he thinks that all his traces are deleted completely. Is he right in thinking so? (a) Yes (b) No (c) May be (d) Not sure
8.	Pyplot is an interface of Python's _____ library. (a) seaborn (b) plotly (c) matplotlib (d) ggplot
9.	PANDAS stands for _____ a. Panel Data Analysis b. Panel Data analyst c. Panel Data d. Panel Dashboard
10.	Which of the following command is used to install pandas?

	a. pip install pandas b. install pandas c. pip pandas d. None of the above
11.	Python pandas was developed by? a. Guido van Rossum b. Travis Oliphant c. Wes McKinney d. Brendan Eich
12.	Result of an operation between unaligned Series will have _____ of indexes involved. a. intersection b. union c. total d. all of the mentioned
13.	Which of the following statement will create an empty series named “S1”? a. S1 = pd.Series(None) b. S1 = pd.Series( ) c. Both of the above d. None of the above

14.	Complete the following code – _____ #missing statement
	D = {'code' : [102 , 104, 105], 'ename' : ['Arun', 'Geet', 'Amy'] }
	df1 = pp.DataFrame(D)
	print(df1)
	a) import pandas
	b) import pandas as pp
	c) import Pandas as pp
	d) import pandas as pd

15.	Write correct Python statement to display 2nd column of DataFrame DF. a) DF[2] b) DF[[2]] c) DF.loc[:,2] d)All of the above
16.	Explain the meaning of print(df.iloc[:4]) where df is a dataframe. a) It will display first 4 rows of DataFrame df. b) It will display 4th row of DataFrame df. c) It will display last 4 rows of DataFarme df d) None of these
17.	Write a Statement in python to create a series, which starts at 3, ends at 13 , with a difference of (step value of) 3.5 a. S= pd.Series(range(3,13, 3.5)) b. b. S=pd.Series(np.arange(3,13,3.5)) c. c. S= pd.Series(range(3:13:3.5)) d. d. S=Spd.Series(np.arange(3:13:3.5))
18.	The function used to iterate over vertical subset of dataset of a DataFrame is : a. iterrows() b. itercols() c. iteritems() d. None of the above
19.	Identify the right type of chart using the following hints. Hint 1: This chart is often used to visualize a trend in data over intervals of time. Hint 2: The line in this type of chart is often drawn chronologically. a. Line chart b. Bar chart c. Pie chart d. Scatter plot

20.	Which of the following statements is used to create a histogram with 20 bins? a. plt.histogram(x, bin = 20) b. plt.hist(x, bins = 20) c. plt.histogram(x, bins = 20) d. plt.hist(x, bin = 20)
21.	e-waste is responsible for air, water and land pollution.(T/F) a. True b. False
22.	The process of re-selling old electronic goods at lower prices is called ____ a. refurbishing b. recycle c. reuse d. reduce
23.	Pandas supports which of the following types of indexes? a. Positional and Labelled Indexing b. Numbered and Valued Indexing c. Row and Column Indexing d. Loop Indexing
24.	Observe this code and select the answer for how many rows and columns will be generated using this code: import pandas as pd ld = [{'x':50, 'y':70}, {'x':35,'y':55, 'z':75}] dfld = pd.DataFrame(ld) print(dfld) a) 3,2 b) 2,3 c) 1,3 d) Error
25.	Which is the best analogy of digital footprint: A. Our footprint when we walk over sand of sea beach B. Our footprint when we walk over the cement road constructed few minutes back C. Our footprint when we enter inside our home with dirty feets. D. All of the above
	SECTION B **solve any 20 – first 20 will be considered out of your solution**
26.	What are the items that fall under e waste . a. Mobile phones b. Acid Batteries c. All of above d. None of these
27.	Assertion: (A) Cyber stalking is a kind of Online harassment wherein the victim is subjected to a barrage of online messages and emails. Reason: (R) Stalkers keep on sending repeated e-mails asking for various kinds of favors or threaten the victim. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true. e) Both A and B are false
28.	Assertion: (A) Phishing is the practice of attempting to acquire sensitive information from individuals over the internet,by means of deception. Reason: (R) It is a criminal offense. a) Both A and R are true and R is the correct explanation of A.

	b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true. e) Both A and B are false.
29.	To prevent unauthorized access to and / or from the network, a system known as_____ , can be implemented by hardware and / or software. i.Firewall ii.antivirus iii.Cookies. iv.Text files
30.	Ambika found a crumpled paper under her desk. She picked it up and opened it. It contained some text which was struck off thrice. But she could still figure out easily that the struck off text was the email ID and password of Garvit, her classmate. What is ethically correct for Ambika to do? i) Inform Garvit so that he may change his password. ii) Give the password of Garvit's email ID to all other classmates. iii) Use Garvit's password to access his account. iv) None of the above
31.	Ms. Anuradha wants to add a new column, 'Total', where she wants the total of corresponding total of UT1, UT2, UT3, UT4 for each students. Write an appropriate command for the purpose. a. df['Total']= df['UT1'] + df['UT2'] + df['UT3'] + df['UT4'] b. df.'Total'= df.'UT1' + df .'UT2' + df.'UT3' + df.'UT4' c. df.'Total' = df.sum(df[0:4]) d. df['Total] = df.sum(df[0:4])
32.	Sending mean texts, posting false information about a person online, or sharing embarrassing photos or videos to harass, threaten or humiliate a target person, is called _____. i.Eavesdropping ii.Cyberbullying iii.Spamming iv.Phishing
33.	A trail of information that people leave online or using communication devices is referred to as: i) Digilocker ii) Digital Remarks iii) Digital Footprints iv) Digital Traces
34.	I can keep you signed in. I can remember your site preferences. I can give you locally relevant content. Who am I? i) Cookies ii) Trails iii) History iv) Ghost
35.	_____ is a person who deliberately sows discord on the Internet by starting quarrels or upsetting people, by posting inflammatory or off topic messages in an online community. a. Netizen b. Digital Citizen c. Internet troll d. None of the above

36.	Which method is used to plot histogram in pyplot? A. his() B. hist() C. Hist() D.histogram()
37.	Which method is used to save the output of pyplot in the form of image file ? A. savefig('filename') B. save_fig('filename) C. save_figure('filename') D. save_img('filename')
38.	What is true about Data Visualization ? A. Data Visualization is used to communicate information clearly and efficiently to users by the usage of information graphics such as tables and charts. B. Data Visualization 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. All of the above
Refer For 39 to 47	Anisha is a commerce teacher and working to analyze student's data. She has create a dataframe dfm as given below. Help her by answering the questions that follows: DataFRame dfm ENG BST ACC IP ECO RICHA 85.0 88.0 85.0 96.0 88.0 RAGHAV 74.0 92.0 75.0 89.0 76.0 MANISH 65.0 74.0 62.0 77.0 63.0 DAVID 83.0 65.0 89.0 83.0 NaN AMIT 82.0 72.0 NaN 92.0 90.0 PRAGYA 56.0 NaN 74.0 73.0 68.0 AVIKA 63.0 91.0 62.0 84.0 79.0 RAHUL 75.0 64.0 78.0 67.0 91.0 VEENA 88.0 75.0 91.0 NaN 82.0 ROHINI 65.0 82.0 76.0 86.0 81.0
39.	Which of the following will be used to show the details of ACC column only: i. dfm.acc ii. dfm.ACC iii. dfm['acc'] iv. all of these
40.	Which of the following will be used to show the details of DAVID only : i. dfm.iloc[3] ii. dfm.iloc[4] iii. dfm.iloc['DAVID'] iv. All of these
41.	Which of the following will be used to show the marks of Amit in IP: i. dfm.IP['AMIT'] ii. dfm[4,['IP']] iii. dfm["IP"]["AMIT"] iv. i and iii
42.	Which of the following will be used to show the columns of IP and BST only where IP is first and then BST is second column: i. dfm.iloc[:,3:1:-1] ii. dfm.iloc[:,3:1:-2] iii. dfm.iloc[:,3:0:-1] iv. dfm.iloc[:,3:0:-2]
43.	If the rows of ROHINI, AVIKA, DAVID are to be shown along with all subject columns where the order of Rows should be ROHINI, AVIKA and DAVID what should be the statement out of the following:

	i. dfm.loc["ROHINI":"RICHA":-2] ii. dfm.loc["ROHINI":"DAVID":-3] iii. dfm.loc["ROHINI":"RICHA":-3] iv. dfm.loc["ROHINI":"MANISH":-2]
44.	Which of the following statement will be used to show the details of ENG, BST and ECO columns. i. dfm.iloc[:,'ENG','BST','ECO'] ii. dfm.iloc[:,0,1,4] iii. dfm.iloc[:,[0,1,4]] iv. dfm.iloc[:,1,2,5]
45.	She wants to add on more record of DIVYA with score 92 in Economics, 63 in Accountancy, 76 in English, 83 in IP and 88 in BST. Suggest her which of the following statement will be used: i. dfm.append["DIVYA"] = [76,88,63,83,92] ii. dfm.loc["DIVYA"] = [76,88,63,83,92] iii. dfm.append("DIVYA", [76,88,63,83,92]) iv. dfm.append([76,88,63,83,92],"DIVYA")
46.	She wants to add the marks of Physical education also in the dataframe as another column PE, these are 78,58,63,95,67,83,94,92,77,68 respectively. Suggest her which of the following statement will be used. i. dfm.loc[:,"PE"]=[78,58,63,95,67,83,94,92,77,68] ii. dfm["PE"]= [78,58,63,95,67,83,94,92,77,68] iii. dfm.addcol("PE", [78,58,63,95,67,83,94,92,77,68]) iv. i and ii
47.	She found later after creating dataframe that she has put marks wrongly in subjects BST & Accountancy, to manage with mistake she wants to rename the columns of BST as ACC and ACC as BST. Which statement should she use out of following: i. dfm.rename(columns={'BST':'ACC','ACC':'BST'}) ii. dfm.rename(columns={'BST':'ACC','ACC':'BST'}, inplace=True) iii. dfm.rename(columns={'BST':'ACC','ACC':'BST'}, inplace=False) iv. dfm.rename(columns={'BST':'ACC','ACC':'BST'}, inplace="True")
48.	(A) Assertion: del statement is used to remove a column from the Dataframe. (R) Reason : drop method is used to remove one or more rows and/or columns from the dataframe. i. Both A and R are correct but R is not correct explanation of A ii. Both A and R are correct and R is correct explanation of A iii. R is correct but A is incorrect iv. A is correct but R is Incorrect
49.	Assertion (A) : Data visualization refers to the graphical representation of information and data using visual elements like charts, graphs and maps etc. Reason (R) : To install matplotlib library we can use the command pip install matplotlib. A. Both A and R are true and R is the correct explanation of A B. Both A and R are true but R is not the correct explanation of A C. A is true but R is false D. A is false but R is true E. Both A and R are false
50.	Which of the following are not true? A. If we do not explicitly specify an index for the data values while creating a series of N data elements,by default indices range from 0 through N. B. We cannot assign user-defined labels to the index and use them to access elements of a Series C. We can create a series with numeric index in random order. a. A only b. A, B

	c. B, C d. C only
	SECTION C- SOLVE ALL QUESTIONS
Refer for 51 to 55	Consider this Dataframe from all questions given below Name City Email Fees 0 Aksh Ahmedabad aksh123@gmail.com 15000 1 Bhavin Baroda bhavin000@gmail.com 25000 2 Charu Surat charu123@gmail.com 12000 3 Dhara Anand dhara174@gmail.com 11000
51.	Choose the correct function to rename city columns to location using rename() function: a. df.rename(columns={'City':'Location'}) b. df.rename(columns={'City'='Location'}) c. df.rename('City'='Location') d. df.rename(df.columns('City','Location'))
52.	Which of the following statement(s) is/are correct with respect to df.columns properties to rename columns 1. All columns must be specified 2. Columns must be in the form of a list 3. Old column names not required 4. Columns can be specified with columns number i. Only 1 is correct ii. 1, 2 and 3 are correct iii. 1 and 3 are correct iv. All of them are correct
53.	df.index properties can be used to i. rename rows ii. rename columns iii. rename rows and columns both iv. None of these
54.	To display 2 rows from the top in the dataframe, which of the following statement is correct: i. df.head()=2 ii. df.head(2) iii. df.head(range(2)) iv. All of the above
55.	Delete the name and fees columns a) student.drop(['name','fees']) b) studet.delete((['name','fees']) c) student.erase(['name','fees']) d) deletion of column is not permitted in dataframe

XII IP

आज़ादी का अमृत महोत्सव

KENDRIYA VIDYALAYA NO.1 REWA

CLASS:

SECTION:

Answer Key Oct PB-I by R. Pathak

OMR ANSWER SHEET

ROLL NO.

TEST ID

Name .....

Subject .....

Mobile No. ..... Test Date ...../...../.....

Candidate Sign

Invigilator Sign

INSTRUCTIONS FOR FILLING THE SHEET

1. This sheet should not be folded or crushed.
2. Use only blue/ black ball point pen to fill the circles.
3. Use of pencil is strictly prohibited.
4. Circles should be darkened completely and properly.
5. Cutting and erasing on this sheet is not allowed.
6. Do not use any stray marks on the sheet.
7. Do not use marker or white fluid to hide the mark.

WRONG METHODS: CORRECT METHOD

	A	B	C	D
1		●		
2	●			
3	●			
4	●			
5		●		
6		●		
7		●		
8				●
9	●			
10	●			
11		●		●
12		●		
13		●		●
14		●		
15				●
16	●			
17		●		
18			●	
19	●			
20		●		
21	●			
22	●			
23	●			
24		●		
25		●		
26			●	
27	●			
28	●			
29	●			
30	●			
31	●			
32		●		
33			●	
34	●			
35			●	
36		●		
37	●			
38				●
39		●		
40	●			
41				●
42				●
43			●	
44			●	
45			●	
46				●
47	●			
48	●			
49		●		
50		●		
51	●			
52		●		
53	●			
54		●		
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KENDRIYA VIDYALAYA SANGATHAN, RANCHI REGION

Pre Term – I (Session 2021-22)

Subject: Informatics Practices (Code-065) **Class–XII**

Time Allowed : 90 minutes **Maximum Marks: 35**

General Instructions:

- The paper is divided into 3 Sections - A, B and C.
- Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
- Section B, consists of Question number 26 to 49 and student need to attempt 20 questions.
- Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
- All questions carry equal marks.

SECTION– A

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

1 The command to show the key values of a graph in python is

a) title

b) legend

c) label

d) None

2 Which of the following is not valid in terms of a DataFrame?

a) It’s a part of Pandas

b) We can create 2 dimensional structure

c) User can define index of his choice

d) We cannot change the index once created

3 If we use tail function in a DataFrame then by default ____ number of rows are displayed.

a) 3

b) 4

c) 5

d) None

4 The command used to create an empty Series

a) S=pd.Series()

b) S=pd.Series(np.NaN)

c) S=pd.Series(empty)

d) None of these

5 In a Series, to know about the dimensions (number of axis), we use

a) <objectname>.ndim

b) <objectname>.dim

c) <objectname>.nsize

d) <objectname>.nbytes

6 Identify the code to put the values along with missing values in a series

a) Obj=pd.Series([7.2,NaN,7.3])

b) Obj=pd.Series([7.2,np.NaN,7.3])

c) Obj=pd.Series([7.2,NULL,7.3])

d) Obj=pd.Series([7.2,NaN.np,7.3])

7 Using Python Matplotlib, out of the following which can be used to count how many values fall into each interval

a) Line plot

b) Bar graph

c) Histogram

d) Charts

8 Which of the following is not a valid plotting function in pyplot?

a) bar()

b) hist()

c) histh()

d) barh()

9 Which of the following functions is used to check the number of rows in a DataFrame?

a) print(length(df))

b) print(length.df)

c) print(len(df))

d) print(length[df])

10 _____ command is used to display a graph in the output window

a) plt.title()

b) plt.xlabel()

c) plt.show()

d) plt.plot()

11 The__is the Digital trail of your activity on the internet.

a) Copy Left

b) Digital Footprint

c) Digital Data

d) Internet Property

12 What is meant by the term cybercrime?

a) Any crime that uses computers to jeopardize or attempt to jeopardize national security

b) The use of computer networks to commit financial or identity fraud

c) The theft of Digital information

d) Any crime that involves computers and networks

13 OSS stands for

a) Open system security

b) Open system source

c) Open software and security

d) Open source software

14 The Library imported to insert NaN values in a DataFrame is

a) pandas

b) numpy

c) matplotlib

d) math

15 Which of the following is NOT an intellectual property?

a) A poem written by a poet

b) An original painting made by a painter

c) Trademark of a Company

d) A remixed song

16 An act of stealing others Intellectual Property without their consent of without citing the source is called.

a) Plagiarism

b) Hacking

c) Phishing

d) Bullying

17 While accessing the column from the data frame, we can specify the column name. In case column does not exist, which type of error it will raise:

a) Key Error

b) Syntax Error

c) Name Error

d) Runtime Error

18 The correct command to add a new column “Bio” in the following DataFrame DF is

	Name	Phy	Chem
0	Manpreet	70	30
1	Kavil	60	70
2	Manu	76	50

a) DF.’Bio’=[87,59,44]

b) DF[‘Bio’]=[87,59,44]

c) DF.‘Bio’[87,59,44]

d) DF.‘Bio’(87,59,44)

19 Which method is used to access vertical subset of a DataFrame?

a) iterrows()

b) iteritems()

c) itertuples()

d) itercols()

20 Which of the following command is correct to add a new index in the following DataFrame

	Name	Phy	Chem
0	Manpreet	70	30
1	Kavil	60	70
2	Manu	76	50
3	Ria	89	65

a) df.rename((0:'A',1:'B',2:'C',3:'D'))

b) df.rename([0:'A',1:'B',2:'C',3:'D'])

c) df.rename[{0:'A',1:'B',2:'C',3:'D'}]

d) df.rename({0:'A',1:'B',2:'C',3:'D'})

21 After practicals, Atharv left the computer laboratory but forgot to sign off from his email account. Later, his classmate Revaan started using the same computer. He is now logged in as Atharv. He sends inflammatory email messages to few of his classmates using Atharv’s email account. Revaan’s activity is an example of which of the following cyber crime?

a) Hacking

b) Identity Theft

c) Cyber Bullying

d) Plagiarism

22 The IT Act was promulgated in the year _____

a) 1999

b) 2000

c) 2001

d) 2002

23 If a Dataframe is created using a 2D dictionary, then the indexes/row labels are formed from

a) dictionary's values

b) inner dictionary's keys

c) outer dictionary's keys

d) none of these

24 Which argument do you specify with read_csv( ) to specify a separator character ?

a) character

b) char

c) separator

d) sep

25 Which among the following options can be used to create a DataFrame in Pandas?

a) A scalar value

b) An ndarray

c) A python dict

d) All of these

Section B

Section B consist of 24 Questions (26-49). Attempt any 20 questions

26 Write the output of the following code.

```
import pandas as pd
import numpy as np
data = np.array(['a', 'b', 'c', 'd', 'e'])
s = pd.Series(data)
print(s[3])
```

a) e

b) d

c) b

d) c

27 Consider a Series created using following statements

```
import pandas as pd
import numpy as np
sl = pd.Series([3,4,7,8,4,1,2,8,9,7],index=range(10,21))
```

which statement will be used to get the output as 10

a) print(sl.index)

b) print(sl.size)

c) print(sl.values)

d) print(s1)

28 Ritika is a new learner for the python pandas, and she is aware of some concepts of python. She has created some lists, but is unable to create the data frame from the same. Help her by identifying the statement which will create the data frame.

```
import pandas as pd
Name=['Manpreet','Kavil','Manu','Ria']
Phy=[70,60,76,89]
Chem=[30,70,50,65]
```

a) df=pd.DataFrame({"Name":Name,"Phy":Phy,"Chem":Chem})

b) d=("Name":Name,"Phy":Phy,"Chem":Chem)
df=pd.DataFrame(d)

c) df=pd.DataFrame([Name,Phy,Chem],columns=['Name',"Phy","Chem","Total"])

d) d. df=pd.DataFrame({Name:"Name", Phy :"Phy",Chem: "Chem"})

29 Online posting of rumours, giving threats online, posting the victim's personal information, comments aimed to publicly ridicule a victim is termed as

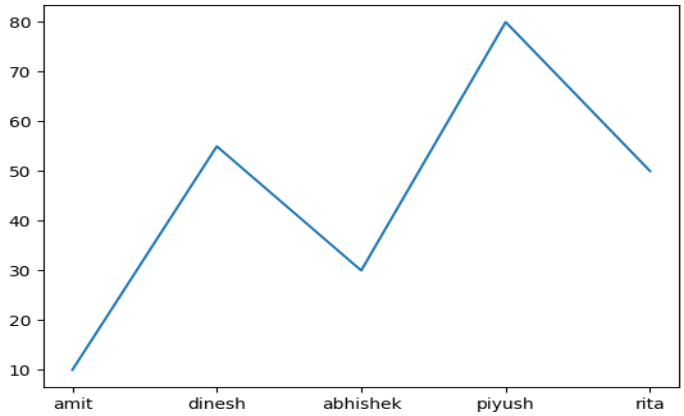
a) Cyber Bullying

b) Cyber Crime

c) Cyber Insult

d) All of the Above

30 Observe the following figure. Identify the coding for obtaining this as output.



a)
```
import matplotlib.pyplot as plt
eng_marks=[10,55,30,80,50]
st_name=["amit","dinesh","abhishek","piyush","rita"]
plt.plot(st_name,eng_marks)
plt.show()
```

b)
```
import matplotlib.pyplot as plt
eng_marks=[10,55,30,80,50]
st_name=["amit","dinesh","abhishek","piyush","rita"]
plt.plot(st_name,eng_marks)
```

c)
```
import matplotlib.pyplot as plt
eng_marks=[10,55,30,80,50]
st_name=["amit","dinesh","abhishek","piyush","rita"]
plt.plot(eng_marks,st_name)
plt.show()
```

d)
```
import matplotlib.pyplot as plt
eng_marks=[10,55,30,80,50]
st_name=["amit","dinesh","abhishek","piyush","rita"]
plt.plot(eng_marks,st_name)
```

31 Read the statements given below and identify the right option to draw a histogram.

Statement A: To make a Histogram with Matplotlib, we can use the plt.hist() function.

Statement B: The bin parameter is compulsory to create histogram.

a) Statement A is correct

b) Statement B is correct

c) Statement A is correct, but Statement B is incorrect

d) d. Statement A is incorrect, but Statement B is correct

32 Arnav wants to add a new record to the following DataFrame df. The correct command to do so is _____

	Name	Phy	Chem
0	Manpreet	70	30
1	Kavil	60	70
2	Manu	76	50

a) df.loc[3]=['Atul',68,79]

b) df.loc(3)=['Atul',68,79]

c) df[3]=['Atul',68,79]

d) df.loc[3]={'Atul',68,79}

33 Raghav is confused about buying Propriety operating system available in the market. Help him in choosing Propriety operating system for his device:

a) Ubuntu

b) Windows

c) Mozilla Firefox

d) Blender

34 Given below there are two statements marked as Assertion (A) and Reason (R) .

Read the statements and choose the correct option.

Assertion (A): Someone has created a fake social media profile in the name of Saket. Saket is a victim of cyberstalking.

Reason (R): Cyberstalking is a form of cybercrime.

a) Both (A) and (R) are True, and (R) is the correct explanation of (A).

b) Both (A) and (R) are True, but (R) is not the correct explanation of (A).

c) (A) is true, but (R) is false.

d) (A) is false, but (R) is true.

35 What will be the output of the following program:

```
import pandas as pd
s = pd.Series([1,2,3,4,5],index=['a','b','c','d','e'])
print(s[::-4])
```

a)
```
e  5
a  1
dtype: int64
```

b)
```
a  1
e  5
dtype: int64
```

c)
```
a  1
d  4
dtype: int64
```

d)
```
e  5
b  2
dtype: int64
```

36 Ankita received an SMS, from her bank querying a recent transaction asking her pin number. Answer the following questions as what she should do upon receiving the SMS:

i. She should not SMS her pin number to the given contact number
ii. She should call the bank helpline number to recheck the validity of the SMS received?
iii. She should SMS her pin number to the given contact number
iv. She should not call the bank helpline number to recheck the validity of the SMS received?

a) Only (i)
b) Both (i) and (ii)
c) Only (ii)
d) Both (iii) and (iv)

37 Which of the following command will display the column labels of the DataFrame?

(a) print(df.columns())
(b) print(df.column())

(c) print(df.column)

(d) print(df.columns)

38 Which of the following constitute e-waste?

(a) Discarded computers

(b) Damaged printers

(c) Useless CDs

(d) All of the above

39 Difference between loc() and iloc().:

a. Both are Label indexed based functions.

b. Both are Integer position-based functions.

c. loc() is label based function and iloc() integer position based function.

d. loc() is integer position based function and iloc() index position based function.

40 Write the output of the given program:

```
import pandas as pd
S1=pd.Series({'Indore':20,'Ujjain':35,'Bhopal':40})
print(S1[S1>20])
```

(a)
```
Ujjain  35
Bhopal  40
dtype: int64
```

(b) Series([], dtype: int64)

(c)
```
Indore  20
Ujjain  35
Bhopal  40
dtype: int64
```

(d)
```
Indore  20
dtype: int64
```

41 Being a responsible digital citizen, we should _____

a. not use copyrighted materials

b. avoid cyber bullying

c. respect privacy of others

d. All of the above

42 Consider the pandas Series, S=pd.Series([10,20,30,40,50], index=[0,1,2,3,4]), the output of command S.iloc[1:3] will include

a) Will produce error

b) Will include values 10,20 30 in result

c) will include values 10,20 in result

d) will include values 20,30 in result

43 Which command will be used to delete 3 and 5 rows of the DataFrame. Assuming the DataFrame name is DF.

	Name	Phy	Chem
0	Manpreet	70	30
1	Kavil	60	70
2	Manu	76	50
3	Ria	89	65
4	Anu	78	56
5	Appu	54	82

a) DF.drop([2,4],axis=0)

b) DF.drop([2,4],axis=1)

c) DF.drop([3,5],axis=1)

d) DF.drop([3,5])

44 Write the output of the given command:

```
import pandas as pd
s=pd.Series([1,2,3,4,5,6],index=['A','B','C','D','E','F'])
print(s[s//2==0])
```

a) B 2
dtype: int64

b) A 1
dtype: int64

c) C 3
dtype: int64

d) E 5
dtype: int64

45 Anil has the following DataFrame at his disposal. He wants to convert it to a CSV file “abc.csv”. The command will be

	Name	Phy	Chem
0	Manpreet	70	30
1	Kavil	60	70
2	Manu	76	50
3	Ria	89	65

a) df.to_csv("abc.csv")

b) df.to_csv("abc.csv",header=None)

c) both a and b are correct

d) None of a and b are correct

46 If a DataFrame df has 4 rows and 5 columns, then print(df.shape) will display

a) [4,5]

b) 4,5

c) (4,5)

d) 4,5

47 Which of the following operations will produce a DataFrame df with rows and columns interchanged as depicted below?

Original DataFrame

	fruit	price
0	orange	200
1	apple	250

Altered DataFrame

	0	1
fruit	orange	apple

price	200	250

a) df.ndim

b) df.T

c) df.axes

d) df.columns

48 Consider the following DataFrame name **df**

	Name	Age	Marks
0	Amit	15	90.0
1	Bhavdeep	16	NaN
2	Reema	17	87.0

Write the output of the given command:

print(df.marks/2)

a.0 45.0
1 NaN
2 43.5
Name:Marks,dtype:float64

b.0 45.0
1 NaN
2 43
Name:Marks,dtype:float64

c.0 45
1 NaN
2 43.5
Name:Marks,dtype:float64

d.0 45.0
1 0
2 43.5
Name:Marks,dtype:float64

49 Assertion(A): Pandas is the external library of python which is used for data analysis and manipulation

Reason(R) Pandas used three data structures for data analysis and manipulation names as Series, Data Frame and Panel

a) Both A and R are true and R is the correct explanation of A

b) Both A and R are true but R is not the correct explanation of A

c) A is false but R is true

d) A is true but R is false

Section C

Section C consists of 6 Questions(50-55), Attempts any 5 questions

Mr. Ankit is working in an organisation as data analyst. He uses Python Pandas and Matplotlib for the same. He got a dataset of the passengers for the year 2010 to 2012 for January, March and December. His manager wants certain information from him, but he is facing some problems. Help him by answering few questions given below:

	Year	Month	Passengers
0	2010	Jan	25
1	2010	Mar	50
2	2012	Jan	35
3	2010	Dec	55
4	2012	Dec	65

Code to create the above data frame:

import pandas as _____ #Statement 1

data={"Year":[2010,2010,2012,2010,2012],"Month":["Jan","Mar","Jan","Dec","Dec"],"Passengers":[25,50,35,55,65]}

df=pd._____(data) #Statement 2

print(df)

50 Choose the right code from the following for statement 1.

a) pd

b) df

c) data

d) p

51 Choose the right code from the following for the statement 2.

a) Dataframe

b) DataFrame

c) Series

d) Dictionary

52 Choose the correct statement/ method for the required output:

(5,3)

a) df.index

b) df.shape()

c) df.shape

d) df.size

53 He wants to print the details of "January" month along with the number of passengers, Identify the correct statement:

	Month	Passengers
0	Jan	25
2	Jan	35

a) df.loc[['Month','Passengers']][df['Month']=='Jan']

b) df[['Month','Passengers']][df['Month']=='Jan']

c) df.iloc[['Month','Passengers']][df['Month']=='Jan']

d) df(['Month','Passengers']][df['Month']=='Jan')

54 Mr. Ankit wants to change the index of the Data Frame and the output for the same is given below. Identify the correct statement to change the index.

	Year	Month	Passengers
Air India	2010	Jan	25
Indigo	2010	Mar	50
Spicejet	2012	Jan	35
Jet	2010	Dec	55
Emirates	2012	Dec	65

a) df.index[]=["Air India","Indigo","Spicejet","Jet","Emirates"]

b) df.index["Air India","Indigo","Spicejet","Jet","Emirates"]

c) df.index=["Air India","Indigo","Spicejet","Jet","Emirates"]

d) df.index()=["Air India","Indigo","Spicejet","Jet","Emirates"]

55 Consider the DataFrame given and write the output of the given command

	Year	Month	Passengers
0	2010	Jan	25
1	2010	Mar	50
2	2012	Jan	35
3	2010	Dec	55
4	2012	Dec	65

print(df.loc[:0,'Month'])

a) 0 Jan

b) 1 March

c) 2 Jan

d) 0 Jan

KENDRIYA VIDYALAYA SANGATHAN, RANCHI REGION

Pre Term – I (Session 2021-22)

Subject: Informatics Practices (Code-065) **Class–XII**

Time Allowed : 90 minutes **Maximum Marks: 35**

MARKING SCHEME

General Instructions:

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SECTION– A

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

1 The command to show the key values of a graph in python is

a) title

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4 The command used to create an empty Series

a) S=pd.Series()

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5 In a Series, to know about the dimensions (number of axis), we use

a) ***<objectname>.ndim***

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b) print(length.df)

c) print(len(df))

d) print(length[df])

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c) DF.‘Bio’[87,59,44]

d) DF.‘Bio’(87,59,44)

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b) iteritems()

c) itertuples()

d) itercols()

20 Which of the following command is correct to add a new index in the following DataFrame

	Name	Phy	Chem
0	Manpreet	70	30
1	Kavil	60	70
2	Manu	76	50
3	Ria	89	65

a) df.rename((0:'A',1:'B',2:'C',3:'D'))

b) df.rename([0:'A',1:'B',2:'C',3:'D'])

c) df.rename[{0:'A',1:'B',2:'C',3:'D'}]

d) df.rename({0:'A',1:'B',2:'C',3:'D'})

21 After practicals, Atharv left the computer laboratory but forgot to sign off from his email account. Later, his classmate Revaan started using the same computer. He is now logged in as Atharv. He sends inflammatory email messages to few of his classmates using Atharv’s email account. Revaan’s activity is an example of which of the following cyber crime?

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d) Plagiarism

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a) 1999

b) 2000

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b) char

c) separator

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25 Which among the following options can be used to create a DataFrame in Pandas?

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b) An ndarray

c) A python dict

d) All of these

Section B

Section B consist of 24 Questions (26-49). Attempt any 20 questions

26 Write the output of the following code.

```
import pandas as pd
import numpy as np
data = np.array(['a', 'b', 'c', 'd', 'e'])
s = pd.Series(data)
print(s[3])
```

a) e

b) d

c) b

d) c

27 Consider a Series created using following statements

```
import pandas as pd
import numpy as np
sl = pd.Series([3,4,7,8,4,1,2,8,9,7],index=range(10,20))
```

which statement will be used to get the output as 10

a) print(sl.index)

b) print(sl.size)

c) print(sl.values)

d) print(s1)

28 Ritika is a new learner for the python pandas, and she is aware of some concepts of python. She has created some lists, but is unable to create the data frame from the same. Help her by identifying the statement which will create the data frame.

```
import pandas as pd
Name=['Manpreet','Kavil','Manu','Ria']
Phy=[70,60,76,89]
Chem=[30,70,50,65]
```

a) df=pd.DataFrame({"Name":Name,"Phy":Phy,"Chem":Chem})

b)
```
d=("Name":Name,"Phy":Phy,"Chem":Chem)
df=pd.DataFrame(d)
```

c) df=pd.DataFrame([Name,Phy,Chem],columns=['Name',"Phy","Chem","Total"])

d) d. df=pd.DataFrame({Name:"Name", Phy :"Phy",Chem: "Chem"})

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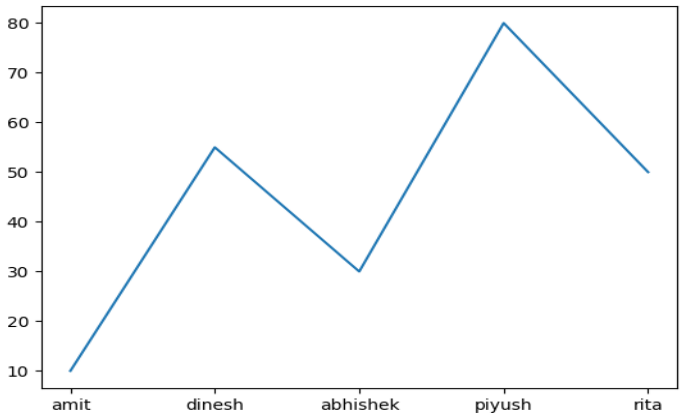
a) Cyber Bullying

b) Cyber Crime

c) Cyber Insult

d) All of the Above

30 Observe the following figure. Identify the coding for obtaining this as output.



a) import matplotlib.pyplot as plt
eng_marks=[10,55,30,80,50]
st_name=["amit","dinesh","abhishek","piyush","rita"]
plt.plot(st_name,eng_marks)
plt.show()

b) import matplotlib.pyplot as plt
eng_marks=[10,55,30,80,50]
st_name=["amit","dinesh","abhishek","piyush","rita"]
plt.plot(st_name,eng_marks)

c) import matplotlib.pyplot as plt
eng_marks=[10,55,30,80,50]
st_name=["amit","dinesh","abhishek","piyush","rita"]
plt.plot(eng_marks,st_name)
plt.show()

d) import matplotlib.pyplot as plt
eng_marks=[10,55,30,80,50]
st_name=["amit","dinesh","abhishek","piyush","rita"]
plt.plot(eng_marks,st_name)

31 Read the statements given below and identify the right option to draw a histogram.

Statement A: To make a Histogram with Matplotlib, we can use the plt.hist() function.

Statement B: The bin parameter is compulsory to create histogram.

a) Statement A is correct

b) Statement B is correct

c) Statement A is correct, but Statement B is incorrect

d) d. Statement A is incorrect, but Statement B is correct

32 Arnav wants to add a new record to the following DataFrame df. The correct command to do so is _____

	Name	Phy	Chem
0	Manpreet	70	30
1	Kavil	60	70
2	Manu	76	50

a) df.loc[3]=['Atul',68,79]

b) df.loc(3)=['Atul',68,79]

c) df[3]=['Atul',68,79]

d) df.loc[3]={'Atul',68,79}

33 Raghav is confused about buying Propriety operating system available in the market. Help him in choosing Propriety operating system for his device:

a) Ubuntu

b) Windows

c) Mozilla Firefox

d) Blender

34 Given below there are two statements marked as Assertion (A) and Reason (R) .

Read the statements and choose the correct option.

Assertion (A): Someone has created a fake social media profile in the name of Saket. Saket is a victim of cyberstalking.

Reason (R): Cyberstalking is a form of cybercrime.

a) Both (A) and (R) are True, and (R) is the correct explanation of (A).

b) *Both (A) and (R) are True, but (R) is not the correct explanation of (A).*

c) (A) is true, but (R) is false.

d) (A) is false, but (R) is true.

35 What will be the output of the following program:

```
import pandas as pd
s = pd.Series([1,2,3,4,5],index=['a','b','c','d','e'])
print(s[::-4])
```

a) e 5
a 1
dtype: int64

b) a 1
e 5
dtype: int64

c) a 1
d 4
dtype: int64

d) e 5
b 2
dtype: int64

36 Ankita received an SMS, from her bank querying a recent transaction asking her pin number. Answer the following questions as what she should do upon receiving the SMS:

i. She should not SMS her pin number to the given contact number
ii. She should call the bank helpline number to recheck the validity of the SMS received?
iii. She should SMS her pin number to the given contact number
iv. She should not call the bank helpline number to recheck the validity of the SMS received?

a) Only (i)
b) Both (i) and (ii)
c) Only (ii)
d) Both (iii) and (iv)

37 Which of the following command will display the column labels of the DataFrame?

(a) print(df.columns())
(b) print(df.column())
(c) print(df.column)
(d) ***print(df.columns)***

38 Which of the following constitute e-waste?

(a) Discarded computers

(b) Damaged printers

(c) Useless CDs

(d) <u>All of the above</u>

39 Difference between loc() and iloc().:

a. Both are Label indexed based functions.

b. Both are Integer position-based functions.

<u>c. loc() is label based function and iloc() integer position based function.</u>

d. loc() is integer position based function and iloc() index position based function.

40 Write the output of the given program:

```
import pandas as pd
S1=pd.Series({'Indore':20,'Ujjain':35,'Bhopal':40})
print(S1[S1>20])
```

(a) <u>Ujjain 35</u>

<u>Bhopal 40</u>

<u>dtype: int64</u>

(b) Series([], dtype: int64)

(c)
```
Indore  20
Ujjain  35
Bhopal  40
dtype: int64
```

(d)
```
Indore  20
dtype: int64
```

41 Being a responsible digital citizen, we should _____

a. not use copyrighted materials

b. avoid cyber bullying

c. respect privacy of others

d. <u>All of the above</u>

42 Consider the pandas Series, S=pd.Series([10,20,30,40,50], index=[0,1,2,3,4]), the output of command S.iloc[1:3] will include

a) Will produce error

b) Will include values 10,20 30 in result

c) will include values 10,20 in result

d) ***<u>will include values 20,30 in result</u>***

43 Which command will be used to delete 3 and 5 rows of the DataFrame. Assuming the DataFrame name is DF.

	Name	Phy	Chem
0	Manpreet	70	30
1	Kavil	60	70
2	Manu	76	50
3	Ria	89	65
4	Anu	78	56
5	Appu	54	82

a) DF.drop([2,4],axis=0)

b) DF.drop([2,4],axis=1)

c) DF.drop([3,5],axis=1)

d) DF.drop([3,5])

44 Write the output of the given command:

```
import pandas as pd
s=pd.Series([1,2,3,4,5,6],index=['A','B','C','D','E','F'])
print(s[s//2==0])
```

a) B 2
dtype: int64

b) A 1
dtype: int64

c) C 3
dtype: int64

d) E 5
dtype: int64

45 Anil has the following DataFrame at his disposal. He wants to convert it to a CSV file "abc.csv". The command will be

	Name	Phy	Chem
0	Manpreet	70	30
1	Kavil	60	70
2	Manu	76	50
3	Ria	89	65

a) df.to_csv("abc.csv")

b) df.to_csv("abc.csv",header=None)

c) <u>both a and b are correct</u>

d) None of a and b are correct

46 If a DataFrame df has 4 rows and 5 columns, then print(df.shape) will display

a) [4,5]

b) 4,5

c) ***<u>(4,5)</u>***

d) 4,5

47 Which of the following operations will produce a DataFrame df with rows and columns interchanged as depicted below?

Original DataFrame

	fruit	price
0	orange	200
1	apple	250

Altered DataFrame

	0	1
fruit	orange	apple
price	200	250

a) df.ndim

b) df.T

c) df.axes

d) df.columns

48 Consider the following DataFrame name **df**

	Name	Age	Marks
0	Amit	15	90.0
1	Bhavdeep	16	NaN
2	Reema	17	87.0

Write the output of the given command:

print(df.marks/2)

a.0 45.0

1 NaN

2 43.5

Name:Marks,dtype:float64

b.0 45.0

1 NaN

2 43

Name:Marks,dtype:float64

c.0 45

1 NaN

2 43.5

Name:Marks,dtype:float64

d.0 45.0

1 0

2 43.5

Name:Marks,dtype:float64

49 Assertion(A): Pandas is the external library of python which is used for data analysis and manipulation

Reason(R) Pandas used three data structures for data analysis and manipulation names as Series, Data Frame and Panel

a) Both A and R are true and R is the correct explanation of A

b) Both A and R are true but R is not the correct explanation of A

c) A is false but R is true

d) A is true but R is false

Section C

Section C consists of 6 Questions(50-55), Attempts any 5 questions

Mr. Ankit is working in an organisation as data analyst. He uses Python Pandas and Matplotlib for the same. He got a dataset of the passengers for the year 2010 to 2012 for January, March and December. His manager wants certain information from him, but he is facing some problems. Help him by answering few questions given below:

	Year	Month	Passengers
0	2010	Jan	25
1	2010	Mar	50
2	2012	Jan	35
3	2010	Dec	55
4	2012	Dec	65

Code to create the above data frame:

import pandas as _____ #Statement 1

data={"Year":[2010,2010,2012,2010,2012],"Month":["Jan","Mar","Jan","Dec","Dec"],"Passengers":[25,50,35,55,65]}

df=pd._____(data) #Statement 2

print(df)

50 Choose the right code from the following for statement 1.

a) ***pd***

b) df

c) data

d) p

51 Choose the right code from the following for the statement 2.

a) Dataframe

b) ***DataFrame***

c) Series

d) Dictionary

52 Choose the correct statement/ method for the required output:

(5,3)

a) df.index

b) df.shape()

c) <u>df.shape</u>

d) df.size

53 He wants to print the details of "January" month along with the number of passengers, Identify the correct statement:

	Month	Passengers
0	Jan	25
2	Jan	35

a) df.loc[['Month','Passengers']][df['Month']=='Jan']

b) <u>df[['Month','Passengers']][df['Month']=='Jan']</u>

c) df.iloc[['Month','Passengers']][df['Month']=='Jan']

d) df(['Month','Passengers']][df['Month']=='Jan')

54 Mr. Ankit wants to change the index of the Data Frame and the output for the same is given below. Identify the correct statement to change the index.

	Year	Month	Passengers
Air India	2010	Jan	25
Indigo	2010	Mar	50
Spicejet	2012	Jan	35
Jet	2010	Dec	55
Emirates	2012	Dec	65

a) df.index[]=["Air India","Indigo","Spicejet","Jet","Emirates"]

b) df.index["Air India","Indigo","Spicejet","Jet","Emirates"]

c) <u>df.index=["Air India","Indigo","Spicejet","Jet","Emirates"]</u>

d) df.index()=["Air India","Indigo","Spicejet","Jet","Emirates"]

55 Consider the DataFrame given and write the output of the given command

	Year	Month	Passengers
0	2010	Jan	25
1	2010	Mar	50
2	2012	Jan	35
3	2010	Dec	55
4	2012	Dec	65

print(df.loc[:0,'Month'])

a) <u>0 Jan</u>

b) 1 March

c) 2 Jan

d) 0 Jan

KENDRIYA VIDYALAYA SANGATHAN MUMBAI REGION

PRE-BOARD-1 TERM-I QUESTION PAPER

Subject: Informatics Practices (Code-065)

Class – XII

SET I

Time Allowed: 90 minutes **Maximum Marks: 35**

General Instructions:

- The paper is divided into 3 Sections- A, B and C.
- Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
- Section B, consists of Question number 26 to 49 and student need to attempt 20 questions.
- Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
- All questions carry equal marks.

Section – A

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

1.NumPy stands for _____

a. Number Python

b. Numerical Python

c. Numbers in Python

d. None of the above

2.We can analyse the data in pandas with:

a. Series

b. DataFrame

c. Both of the above

d. None of the above

3.Which of the following input can be accepted by DataFrame?

a. Structured ndarray

b. Series

c. DataFrame

d. All of the above

4. To get the number of elements in a series object,_____ attribute may be used.

a. index

b. size

c. itemsize

d. ndim

5. Write the command to extract the complete row ‘T03’.

a. df.loc[:,’ID’]

b. df.loc[‘T03’,’Name’]

c. df.loc[‘T02’,’T03’]

d. df.loc[‘T03’,:]

6. To delete a column from a DataFrame, you may use statement.

a. remove

b. del

c. drop

d. cancel statement

7. To get top 5 rows of a dataframe, you may use

a. head()

b. top()

c. tail()

d. None of the above

8. To specify the style of line as dashed , which argument of plot() needs to be set ?

a. line

b. width

c. style

d. linestyle

9. A _____ is a summarisation tool for discrete or continuous data.

a. quartile

b. histogram

c. mean

d. median

10. Which of the following is not a valid plotting function of pyplot ?

a. plot()

b. bar()

c. line()

d. pie()

11. Our digital footprints are stored in local web browser in the form of _____

a. browsing history

b. cookies

c. passwords

d. All of the above

12. Which of the following is not a cyber crime?

a. Phishing

b. Ransomware

c. Hacking

d. Tracking

13. Which of the following is an advantage of ‘proprietary ‘ software?

a. It is usually free

b. Thoroughly tested because people are paying to use it

c. Not as customizable

d. Can sometimes be too generic for specialist purpose

14. To specify datatype int16 for a Series object, you can write :

a. pd.Series(data = array, dtype = int16)

b. pd.Series(data = array, dtype = numpy.int16)

c. pd.Series(data = array.dtype pandas.int16)

d. all of the above

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

a. Intelligent Property Rights

b. Intellectual Property Reserve

c. Intellectual Property Rights

d. Intellectual Product Rights

16. E-waste stands for _____

a. Electrical waste

b. Electronic waste

c. Electricity waste

d. E-waste

17. Which of the following is missing data?

a. NULL

b. NaN

c. None

d. All of the above

18. Every activity you perform on the internet is saved for how long?

a. one month

b. one year

c. as per my setting

d. forever

19. 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.iat[4, 6] = 35

c. DF[3, 5] = 35

d. DF.iat[3, 5] = 35

20. The process of re-selling old electronics goods at lower prices is called _____

a. refurbishing

b. recycle

c. reuse

d. reduce

21. Unsolicited commercial email is known as:

a. Malware

b. virus

c. spam

d. Spyware

22. After practicals, Atharv left the computer laboratory but forgot to sign off from his email account. Later his classmate Revaan started using the same computer. He sends inflammatory email messages to few of his classmates using Atharvs email account. Revaan activity is an example of which of the following cybercrime?

a. Hacking
b. Identity theft
c. Cyber bullying
d. Plagiarism

23. All Pandas' data structures are mutable but not always mutable.

a. size, value

b. semantic, size

c. value, size

d. none of these

24. Which argument do you specify with read_csv( ) to specify a separator character ?

a. character

b. char

c. separator

d. sep

25. To get the transpose of a dataframe D1,you can write_____

a. D1.T

b. D1.Transpose

c. D1.Swap

d. All of these

Section – B

Section B consists of 24 Questions (26 to 49). Attempt any 20 questions.

26. How many values will be there in array1, if given code is not returning any error ?

>>>s4=pd.Series(array1,index=[‘Jan’,’Feb’,’Mar’,’Apr’]

a. 1

b. 2

c. 3

d. 4

27. Which of the following code will generate the following output?

```
Jan 31
Feb 28
Mar 31
dtype: int64
```

a.

```
import pandas as pd
S1 = pd.Series(data = [31,28,31], index=["Jan","Feb","Mar"])
print(S1)
```

b.

```
import pandas as pd
S1 = pd.Series([31,28,31], index=["Jan","Feb","Mar"])
print(S1)
```

c. both of the above

d. None of the above

28. Write the statement to get NewDelhi as output using positional index

```
import pandas as pd
S1 = pd.Series(['NewDelhi', 'WashingtonDC', 'London', 'Paris'],
index=['India', 'USA', 'UK', 'France'])
```

a. print(S1[0])

b. print(S1[‘India’])

c. Both of the above

d. print(S1.India)

29. Online posting of rumours , giving threats online, posting the victim's personal information , comments aimed to publicly ridicule a victim is termed as _____

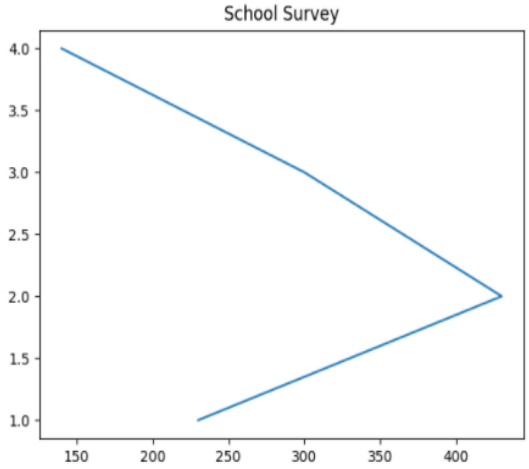
a. Cyber bullying

b. Cyber crime

c. Cyber insult

d. All of the above

30. Look at the following graph and select appropriate code to obtain this output. (assume that pandas and matplotlib is already imported)



a.
```
zone=[1,2,3,4]
schools = [230,430,300,140]
plt.plot(zone, school, 'School Survey')
plt.show()
```

b.
```
zone=[1,2,3,4]
schools = [230,430,300,140]
plt.plot(schools,zone, 'School Survey')
plt.show()
```

c.
```
zone=[1,2,3,4]
schools = [230,430,300,140]
plt.plot(zone, school)
plt.title("School Survey")
plt.show()
```

d.
```
zone=[1,2,3,4]
schools = [230,430,300,140]
plt.plot(schools,zone)
plt.title("School Survey")
plt.show()
```

31. Read the statements given below and identify the right option to draw a histogram.

Statement A: The bar chart has categories of data whereas histogram has number of ranges.

Statement B: The bars of bar-chart have gaps in between but the bins (bars) of histogram have no gaps as number ranges are continuous

a. Statement A is correct

b. Statement B is correct

c. Statement A is correct, but Statement B is incorrect

d. Statement A and Statement B both are correct

32. Which argument in hist() is used to create a stacked bar type histogram?

a. histt

b. histtype

c. type

d. barstacked

33. Which of the following is not an operating system?

a. UNIX

b. MS-DOS

c. CP/M

d. PASCAL

34. What is included in an E-mail address?

Statement 1: Domain name followed by user's name

Statement 2: User's name followed by domain name

Statement 3: User's name followed by postal address

Statement 4: User's name followed by host name

a. Statements 1 and 2.

b. Statements 2 and 3.

c. Statements 3 and 4.

d. Statements 2 and 4.

35. Consider the following series S3

```
0    23
1    20
2    50
3    70
4    35
dtype: int32
```

Identify the correct command for the following output:

```
2    50
3    70
4    35
dtype: int32
```

a. S3.iloc[2:5]

b. S3.iloc[2:4]

c. S3.iloc[1:4]

d. S3.iloc[:]

36. Rishika found a crumpled paper under her desk.She picked it up and opened it. It contained some text which was struck off thrice. But she could still figure out easily that the struck off text was the email ID and password of Garvit, her classmate. What is ethically correct for Rishita to do?

a. Inform Garvit so that he may change his password

b. Give the password of Garvit's email ID to all other classmates

c. Use Garvit's password to access his account

d. None of the above

37. In given code dataframe 'D1' has _____ rows and _____ columns.

```
import pandas as pd
LoD = [{'a':10, 'b':20}, {'a':5, 'b':10, 'c':20}, {'a':7, 'd':10, 'e':20}]
D1 = pd.DataFrame(LoD)
```

a. 3, 3

b. 3, 4

c. 3, 5

d. None of the above

38. Which of the following is not the correct method of E-waste management?

a. Regrow

b. Reduce

c. Recycle

d. Reuse

39. Difference between at() and iat().:

a. Both are Label indexed based functions.

b. Both are Integer position-based functions.

c. at() is label based function and iat() integer position based function.

d. at() is integer position based function and iat() index position based function.

40. Write the output of the given program:

```
import pandas as pd
```

```
S1=pd.Series([3,1,12,17],index=["a","b","c","d"])
S2=pd.Series([4,5,6,7],index=["a","b","e","f"])
print(S1*S2)
```

a.

```
a    12.0
b     5.0
c     NaN
d     NaN
e     NaN
f     NaN
dtype: float64
```

b.

```
a    12.0
b     5.0
c     NaN
d     NaN
e     NaN
f     NaN
dtype: int32
```

c.

```
a    NaN
b    NaN
c     NaN
d     NaN
e     NaN
```

f NaN

dtype: float64

d. None of these

41. A responsible netizen must abide by _____

a. net etiquettes

b. communication etiquettes

c. social media etiquettes

d. All of the above

42. Consider a Data Frame containing three rows R1, R2 and R3, which of the below given commands to delete the rows R1 and R2 is incorrect?

a. df=df.drop(['R1','R2'],1)

b. df=df.drop(['R1','R2'])

c. df=df.drop(['R1','R2'],0)

d. df=df.drop(['R1','R2'],axis='index')

43. Write the output of the given program:

```
import pandas as pd
S1 = pd.Series([31, 28, 31, 30, 31], index = ["Jan", "Feb", "Mar", "Apr", "May"])
print(S1[0 : 2] * 2)
```

a.

Feb 56

Mar 62

dtype: int64

b.

Jan 62

Apr 60

dtype: int64

c.

Jan 62

Feb 56

dtype: int64

d.None of the above

44. Ritika is a new learner for the python pandas, and she is aware of some concepts of python. She has created some lists, but is unable to create the data frame from the same. Help her by identifying the statement which will create the data frame.

```
import pandas as pd
Name=['Manpreet','Kavil','Manu','Ria']
mrks=[70,60,76,89]
```

a. df=pd.DataFrame({"Name":Name,"Marks":mrks })

b. d=("Name":Name,"Marks":mrks)

c. df=pd.DataFrame([Name,mrks],columns=['Name'," mrks"])

d. df=pd.DataFrame({Name:"Name", Marks:mrks })

45. Which of the following is not an example of Social media platform?

a. Facebook

b. Pinterest

c. Google+

d. Social channel

46. Assuming the given structure, which command will give us the given output:

	Rollno	Total	Percentage
1	1	350.5	70
2	2	400.0	80
3	3	420.0	84
4	4	356.0	80

Output Required: 16

a. print(df.shape())

b. print(df.shape)

c. print(df.size)

d. print(df.size())

47. Write the output of the given command: df1.iloc[1:2,1:3]

	Rollno	Total	Percentage
Amit	1	350.5	70
Bimal	2	400.0	80
Chetan	3	420.0	84

a. OUTPUT

	Total	Percentage
Amit	350.5	70

b. OUTPUT

	Total	Percentage
Bimal	400.0	80

c. OUTPUT

	Total	Percentage
Bimal	350.5	80

d. None of the above

48. Consider the following data frame name df

	Name	Age	Marks
0	Amit	15	90.0
1	Bhavdeep	16	NaN
2	Reema	17	87.0

Write the output of the given command:

```
print(df.marks+2)
```

a. 0 92.0
   1 NaN
   2 89.0
   Name: Marks, dtype: float64

b. 0 45.0
   1 NaN
   2 43
   Name: Marks, dtype: float64

c. 0 45
   1 NaN
   2 43.5
   Name: Marks, dtype: float64

d. None of the above

49. **Statement (A):** In Python, Exclusive libraries can be used for graphical or visual representation of information and data using elements like charts, graphs and maps etc.
Statement (B): Matplotlib is a python package for 2D plotting that generates production quality graphs.

a. Statement A is correct.

b. Statement B is correct.

c. Statement A is correct, but Statement B is incorrect.

d. Both Statement A and B is correct.

Section – C

Section C, consists of 6 Question (50 to 55). Attempt any 5 questions.

Case Study

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. Sha has created a data frame 'df' to keep track of the number of first, second and third prize won by different houses in the 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:

50. Display the house names where the number of second prizes are in the range of 12 to 20.

a. df['House'][(df['Second']>12) or (df['Second']<=20)]

b. df[House][(df['Second']>12) and (df['Second']<=20)]

c. df['House'][(df['Second']>12) & (df['Second']<=20)]

d. df[(df['Second']>12) & (df['Second']<=20)]

51. To display the records in reverse order the command would be?

a. print(df[::1])

b. print(df.iloc[::-1])

c. print(df[[-1:]+df[:-1]

d. print(df.reverse())

52. Write python command to display bottom 3 records.

a. df.last(3)

b. df.bottom(3)

c. df.next(3)

d. df.tail(3)

53. Choose the correct output of the given statements.

x=df.columns[:1]

print(x)

a. 0

b. House

c. First

d. Error

54. Which command will give the output (6,4)?

a. print(df.size)

b. print(df.shape)

c. print(df.index)

d. print(df.axes)

55. What is the output of the following Python statement?

df.iloc[1:2,1:2]

a. Ganges

b. 10

c. 8

d. Jamuna

**********End**********

KENDRIYA VIDYALAYA SANGATHAN MUMBAI REGION

PRE-BOARD-1 TERM-I

Subject: Informatics Practices (Code-065)

Class – XII

MARKING SCHEME (SET I)

Time Allowed: 90 minutes **Maximum Marks: 35**

1. b. Numerical Python
2. c. Both of the above
3. d. All of the above
4. b. size
5. d. df.loc[‘T03’,:]
6. b. del
7. a. head()
8. d. linestyle
9. b. histogram
10. c. line()
11. d. All of the above
12. d. Tracking
13. b. Thoroughly tested because people are paying to use it
14. b. pd.Series(data = array, dtype = numpy.int16)
15. c. Intellectual Property Rights
16. b. Electronic waste
17. d. All of the above
18. d. forever
19. d. DF.iat[3, 5] = 35
20. a. refurbishing
21. c. spam
22. b. Identity theft
23. c. value, size
24. d. sep
25. a. D1.T

26. d. 4
27. c. both of the above
28. a. print(S1[0])
29. a. Cyber bullying
30. d.
31. d. Statement A and Statement B both are correct
32. b. histtype
33. d. PASCAL
34. d. Statements 2 and 4.
35. a. S3.iloc[2:5]
36. a. Inform Garvit so that he may change his password
37. c. 3, 5
38. a. Regrow
39. c. at() is label based function and iat() integer position based function.
40. a.
41. d. All of the above
42. a. df=df.drop(['R1','R2'],1)
43. c.
44. a. df=pd.DataFrame({"Name":Name,"Marks":mrks })
45. d. Social channel
46. c. print(df.size)
47. b.
48. a.
49. d. Both Statement A and B is correct.
50. c. df[‘House’][(df[‘Second’]>12) & (df[‘Second’]<=20)]
51. b. print(df.iloc[::-1])
52. d. df.tail(3)
53. b. House
54. print(df.shape)
55. b.10

****

KENDRIYA VIDYALAYA SANGATHAN KOLKATA REGION

PRE-BOARD EXAMINATION (TERM-1)

SESSION-2021-22

CLASS:XII

SUBJECT-INFORMATICS PRACTICES (065)

Time Allowed: 90 minutes Maximum Marks: 35

General Instructions: The paper is divided into 3 Sections- A, B and C.

- Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
- Section B, consists of Question number 26 to 49 and student need to attempt 20 questions.
- Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
- All questions carry equal marks.

Section – A

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

1.	Which of the following are modules/libraries in Python? a. NumPy b. Pandas c. Matplotlib d. All of the above
2.	_____ is an important library used for analyzing data. a. Math b. Random c. Pandas d. None of the above
3.	The command to install the matplotlib is: a. install pip matplotlib b. install matplotlib c. pip matplotlib d. pip install matplotlib
4.	The ndim for a Series will give: a. 0 b. 1 c. 3 d. 2
5.	Python was developed by: a. Guido van Rossum b. Travis Oliphant

	c. Wes McKinney d. Brendan Eich
6.	The command used to give a title along X-Axis to a graph is _____. a. LabelX() b xtitle() c. xlabel() d. label()
7.	What is the minimum number of arguments required for DataFrame() function in Pandas? a. 1 b. 0 c. 2 d. 3
8.	Method or function to display the first five rows in a data frame is: a. heads() b head() c. xlabel() d. label()
9.	Write the correct option for the method used in Pandas to delete columns in dataframe a.delete() b.drop() c.remove() d.pop()
10.	_____ is a graphical representation of the distribution ofnumerical data by showing the number of data points that fall within a specifiedrange of values. a.Histogram b.Frequency Polygon c.Bar Graph d. None of these
11.	Which of the following is not an intellectual property? a. A poem written by a poet b. An original painting made by a painter c. Trademark of a Company d. A remixed song
12.	In this era of digital society, we can do _____ a.Online Shopping b. Online Banking c. Online Education d.All of the above
13.	Proprietary software is a software which is available _____ a. free of charge b. on paying license fee c. free for first year only d. none of the above

14.	NumPy stands for ____ a.Number Python b. Numerical Python c. Numbers in Python d. None of the above.
15.	Ravi copies some contents from Internet, but do not mention the source or the original creator. This is an act of _____ a. Plagiarism b. Copyright Infringement c. Trademark Infringement d. Licence Infringement
16.	Bad posture of using computer may cause _____ a.Backache b. Neck Pain c. Shoulder pain d. All of the above
17.	_____ function is used for changing the order of rows and columns in a dataframe or changing the order of data in series object. a.changeindex() b.reindex() c.rearrange() d.reset_index()
18.	The digital data trail we leave online unintentionally is called _____ a. Active digital footprints b. Passive digital footprints c. Current digital footprints d. None of the above
19.	The _____ function iterates over a dataframe column wise and displaysthe dataframe as vertical subsets. a.iterrows() b.itercols() c.itercolumns() d.iteritems()
20.	E-waste stands for _____ a. Electrical waste b. Electronic waste c. Electricity waste d. E-waste
21.	FOSS stands for _____ a. For open source software b. Free and open set software

	c. Free and open source software d. None of the above
22.	A _____ is a type of contract between the creator of an original work permitting someone to use their work, generally for some price. a. Agreement b. License c. Patent d. Copyright
23.	Keys of the dictionary are used to construct the _____ of the dataframe. a.columns b.index c.shape d. values
24.	In order to work with CSV files from panda, we need to import a. .csv b.pandas.io c. newcsv d. No extra module required
25.	Which of the following command returns the total number of elements in a DataFrame? a. shape b. itemsize c. size d. nbytes

Section – B

Section B consists of 24 Questions (26 to 49). Attempt any 20 questions.

26.	Which of the following is the correct Statement to save a plot/graph in the D: Drive of the system? Assume matplotlib.pyplot is imported as plt Statement-1: plt.savegraph('D:\\pic.png') Statement-2: plt.savefig('D:\\pic.png') Statement-3: plt.savefig('D:\pic.png') Statement-1: plt.savegraph('D:\pic.png') a.Both Statement-2 and Statement-3 are Correct. b.Only Statement-2 is Correct. c.Only Statemet-3 is Correct. d.Both Statement-1 and Statement-4 are Correct.
27.	Following are some Statements about Data Handling in Python. Statement-1: The size of the Series data structure is immutable but the data values are mutable. Statement-2: Missing Data in a Python Series is represented by None. Statement-3: The function add() is used to add a new column in a Pandas DataFrame. Statement-4: By default, sorting of a DataFrame is done on row lables in ascending order. Which of the following is Correct? a) Both Statement-1 and Statement-2 are Correct. b) Both Statement-1 and Statement-4 are Correct. c) Both Statement-2 and Statement-4 are Correct. d) Both Statement-3 and Statement-4 are Correct

28.	Consider the Series in Python Pandas as given below:
	
	1993 64
	1994 76
	1995 91
	1996 94
	1997 89
	1998 92
	dtype: int64
	
	Rishav has written the following code to create the above Series with some gaps in the code:
	import pandas as pd
	year=_____ # Statement-1
	successrate=[64,76,91,94,89,92]
	c=pd.Series(successrate,_____) # Statement-2
	printc.
	
	What should be written in Statement-1 to create the List "year" storing 1993,1994,1995,1995,1997,1998?
	
	a.year=(1993,1994,1995,1995,1997,1998)
	b.year={1993,1994,1995,1995,1997,1998}
	c.year=[1993,1994,1995,1995,1997,1998]
	d.year=range(1993,1998)

29.	What should be written in Statement-2 to create the index of the Series as shown in the above diagram? a.index=successrate b.index=[0,1,2,3,4,5,6,7] c.index='year' d.index=year
30.	What should be the correct code for displaying the Series as: 1995 91 1996 94 1997 89 a.print(c[2:5]) b.print(c[3:6]) c.print(c[3:5]) d.print(c[2:6])
31.	Choose the correct code for displaying the successrate above 90 along with the corresponding year from the above Series. i) print(c>90) ii) print([c>90]) iii) print(c[c>90]) iv) print(c.loc[c>90]) a.Only (ii) is correct. b.Both (iii) and (iv) correct c.Both (ii) and (iii) correct

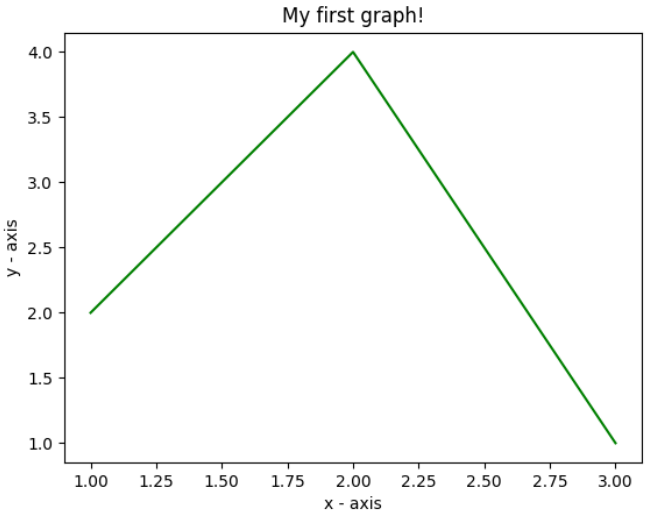
	d. Both (ii) and (iv) correct
32.	_____is a cybercrime in which a target or targets are contacted by email, telephone or text message by someone posing as a legitimate institution to lure individuals into providing sensitive data such as personally identifiable information, banking and credit card details, and passwords. a. Plagiarism b. Phishing c. Cyberstalking d. Hacking
33.	Choose the correct Output of the following Python Code? import pandas as pd import numpy as np A=np.arange(10,20,3) B=A+4 S=pd.Series(A,index=B. print(S) a. 14 10 / 17 13 / 20 16 / 23 19 b. 10 14 / 13 17 / 20 16 / 23 19 c. 10 17 / 14 13 / 16 19 / 23 20 d. None of the above.
34.	Consider the following Series-S: 0 North 1 East 2 West 3 South Which of the following Statements will recreate the Series as: 1 East 2 West a.S=S.drop([1,4]) b.S=S.pop([0,3]) c.S=S.pop([1,4]) d. S=S.drop([0,3])
35.	Which is the correct command to read 1st 10 records from a CSV File "Product.CSV" into a Pandas Dataframe PR? a.PR=pandas.DataFrame('Product.csv',head=10) b.PR=pandas.read_csv('Product.csv',rows=10) c.PR=pandas.DataFrame('Product.csv',nrows=10) d. PR=pandas.read_csv('Product.csv',nrows=10)
36.	Which of the following is a characteristics of Data Visualisation? a. Converts information. b. Involves visuals. c. Simplifies understanding. d. All of above
37.	Difference between loc() and iloc().: a. Both are Label indexed based functions. b. Both are Integer position-based functions. c. loc() is label based function and iloc() integer position based function.

	d. loc() is integer position based function and iloc() index position based function.
38.	Electronic products that are unwanted, not working, and nearing or at the end of their “useful life.”, known as a. Computer Waste b. E- Waste c. Biological Waste d. Chemical waste
39.	Which of the following is/are characteristics of DataFrame? a. Columns are of different types b. Can Perform Arithmetic operations c. Axes are labeled (rows and columns) d. All of the above

40.	The following table shows the python code and its expected output.
	
	Python code
	`1 import pandas as pd`
	`2 x = [10, 20 30]`
	`3 ser = pd.Series(x, _____=["r1", "r2", "r3"])`
	`4 print(ser)`
	
	Output
	`r1 10`
	`r2 20`
	`r3 30`
	
	Choose the correct word for blank space in line 3 for printing the column:
	a. index
	b. column
	c. col
	d. heads

41.	What are the etiquettes to create a safe pass word for Online sites a. Choose password wisely it should be the combination of Capital, small letters , numbers and special characters . b. Keep the same password for all the Logins. c. Don’t change the password regularly. d. Share your password to your near ones.
42.	What will be the output of following code: dt=({'Name':['Akshit','Bharat','Chetan','Dhaval','Gaurang'], 'InternalMarks':[18,19,20,18,19], 'AnnualExam':[76,78,80,76,73]}) df=pd.DataFrame(dt) Which of the following code will print names and Annual marks of students? a. print(df.loc[:,’Name’:’AnnualExam’]) b. print(df.loc[‘Name’:’AnnualExam’]) **c. print(df.loc[:,df.columns!=’InternalMarks’])** d. All of these
43.	What is the correct output for following Python code: import pandas as pd data = {"Marks1": 90, "Marks2": 95, "Marks3": 97} ser = pd.Series(data. print(ser)

	a. Marks1 90 Marks2 95 Marks3 97 b. Marks1 Marks2 Marks3 90 95 97 c. Marks1 Marks2 Marks3 95 90 97 d.No output

44.	Mr.Sharma is trying to write a code to plot line graph in green shown in fig-1. Help Mr. Sharma to fill in the blanks of the code and get the desired output.
	 
	
	import matplotlib.pyplot as plt # statement 1
	x = [1,2,3] # statement 2
	y = [2,4,1] # statement 3
	plt.plot(_____) #statement 4
	
	plt.xlabel('x - axis')
	plt.ylabel('y - axis')
	plt.title ('My first graph!')
	# function to show the plot
	Plt.show()
	
	Which of the following lines will be applicable for statement 4?
	a.plt.plot(x, y, color='g')
	b.plt.plot(x, y, color= g)
	c.plt.plot(color='g',x,y)
	d.plt.plot(x, y, color=green)

45.	If Anu decides that her software should be available for free and the code to be open for all, it is called as _____ a. Proprietary software b. Free and open source software c. Free software

	d. None of the above
46.	**Assertion a. :** *pandas* is an open source Python library which offers high performance, easy-to-use data structures and data analysis tools. **Reason (R) :** Professionals and developers are using the pandas library in data science and machine learning. a. Both A and R are true and R is the correct explanation of A b. Both A and R are true but R is not the correct explanation of A c. A is true but R is false d. A is false but R is true
47.	What is the correct syntax to return both the first row and the second row in a Pandas DataFrame df? a. df.loc[[0,1]] b. df.[[0,1]] c. df.loc[[0-1]] d. df.[[0-1]]
48.	**Assertion a.:** Nidhi has create dataframe Df1 **Df1** (table) She can expand or delete any row /column in this dataframe. **Reason(R):** In python DataFrame objects can be concatenated or merged a. Both A and R are true and R is the correct explanation of A. b. Both A and R are true but R is not the correct explanation of A. c. A is true but R is false. d. A is false but R is true.
49.	**Statement a.:** A bar chart represents categorical data with rectangular bars. **Statement b.:** It is an accurate graphical representation of the distribution of numerical data. 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

	Student	Marks	Sports
I	ABC	24.5	Cricket
II	DEF	27.5	Badminton
III	GHI	30.0	Football

Section - C

Section C, consists of 6 Question (50 to 55). Attempt any 5 questions. Case Study

Mr Rishi has created a dataframe Marks and wants to peform some operations on the dataframe.He is getting confused with some functions.Help him find the correct options

	Name	SEM-1	SEM-2	SEM-3
1	Mohan Sharma	76	56	68
2	Anand Sharma	56	93	98
3	Deeksha Sen	68	89	100
4	Pramod Nair	76	65	61

50.	Choose the correct option to display the last 2 rows of the DataFrame. a.print(MARKS.tail(-2))

	b.print(MARKS.bottom(2)) c.print(MARKS.tail(2)) d. print(MARKS.loc[2])
51.	Rishi wants to change the index of the above Dataframe to 'A','B','C','D'. Help him to select the correct command to do so. a.MARKS.index=['A','B','C','D'] b.MARKS=MARKS.index(['A','B','C','D']) c.MARKS=MARKS. (index={1:'A',2:'B',3:'C',4:'D'}) d. index=['A','B','C','D']
52.	What will the following Python Code produce Output? print(MARKS[MARKS['SEM-2']>80].Name) a. 2 Anand Sharma 3 Deeksha Sen b. 2 Anand Sharma 1 Mohan Sharma c. 3 Deeksha Sen 4 Pramod Nair d. None of the above.
53.	What is the size of the above dataframe? a. 4 b.16 c.12 d.8
54.	Which command in Python Pandas will display the above dataframe in the transpose form i.e. interchanging rows and columns? a.>>>MARKS.T b.>>>MARKS.t c.>>>T(MARKS) d.>>>t(MARKS)
55.	He wants to set all the values to zero in data frame, choose the right command to do so: a. DF=0 b. DF[]=0 c. DF[:]=0 d. DF[:]==0

KENDRIYA VIDYALAYA SANGATHAN
KOLKATA REGION
FIRST PRE-BOARD EXAMINATION (2021-2022)
CLASS-XII
SUBJECT-INFORMATICS PRACTICES (065)
MARKING SCHEME

Time Allowed: 90 minutes Maximum Marks: 35

General Instructions: The paper is divided into 3 Sections- A, B and C.

- Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
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- Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
- All questions carry equal marks.

THE CORRECT ANSWER HAS BEEN HIGHLIGHTED IN BOLD

Section – A

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

1.	Which of the following are modules/libraries in Python? a. NumPy b. Pandas c. Matplotlib **d. All of the above**
2.	_____ is an important library used for analyzing data. a. Math b. Random **c. Pandas** d. None of the above
3.	The command to install the matplotlib is: a. install pip matplotlib b. install matplotlib c. pip matplotlib **d. pip install matplotlib**
4.	The ndim for a Series will give: a. 0 b**. 1** c. 3 d. 2
5.	Python was developed by: a. **Guido van Rossum** b. Travis Oliphant

	c. Wes McKinney d. Brendan Eich
6.	The command used to give a title along X-Axis to a graph is _____. a. LabelX() b xtitle() c. **xlabel()** d. label()
7.	What is the minimum number of arguments required for DataFrame() function in Pandas? a. 1 b**. 0** c. 2 d. 3
8.	Method or function to display the first five rows in a data frame is: a. heads() b. **head()** c. xlabel() d. label()
9.	Write the correct option for the method used in Pandas to delete columns in dataframe a)delete() b)**drop()** c)remove() d)pop()
10.	_____ is a graphical representation of the distribution ofnumerical data by showing the number of data points that fall within a specifiedrange of values. (a) **Histogram** (b) Frequency Polygon (c) Bar Graph (d) None of these
11.	Which of the following is not an intellectual property? (a) A poem written by a poet (b) An original painting made by a painter (c) Trademark of a Company (d) **A remixed song**
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17.	_____ function is used for changing the order of rows and columns in a dataframe or changing the order of data in series object. (a) changeindex() (b) **reindex()** (c) rearrange() (d) reset_index()
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19.	The _____ function iterates over a dataframe column wise and displaysthe dataframe as vertical subsets. (a) iterrows() (b) itercols() (c) itercolumns() (d) **iteritems()**
20.	E-waste stands for _____

	a. **Electrical waste** b. Electronic waste c. Electricity waste d. E-waste
21.	FOSS stands for _____ a. For open source software b. Free and open set software c. **Free and open source software** d. None of the above
22.	A _____ is a type of contract between the creator of an original work permitting someone to use their work, generally for some price. a. Agreement b. License c. Patent d. **Copyright**
23.	Keys of the dictionary are used to construct the _____ of the dataframe. (a) columns (b) **index** (c) shape (d) values
24.	In order to work with CSV files from panda, we need to import i. **.csv** ii.pandas.io iii. newcsv iv. No extra module required
25.	Which of the following command returns the total number of elements in a DataFrame? a) shape (b) itemsize (c) **size** (d) nbytes

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

26.	Which of the following is the correct Statement to save a plot/graph in the D: Drive of the system? Assume matplotlib.pyplot is imported as plt Statement-1: plt.savegraph('D:\\pic.png') Statement-2: plt.savefig('D:\\pic.png') Statement-3: plt.savefig('D:\pic.png') Statement-1: plt.savegraph('D:\pic.png') (a) Both Statement-2 and Statement-3 are Correct.

	(b) **Only Statement-2 is Correct**. (c) Only Statemet-3 is Correct. (d) Both Statement-1 and Statement-4 are Correct.
27.	Following are some Statements about Data Handling in Python. Statement-1: The size of the Series data structure is immutable but the data values are mutable. Statement-2: Missing Data in a Python Series is represented by None. Statement-3: The function add() is used to add a new column in a Pandas DataFrame. Statement-4: By default, sorting of a DataFrame is done on row lables in ascending order. Which of the following is Correct? a) Both Statement-1 and Statement-2 are Correct. **b) Both Statement-1 and Statement-4 are Correct.** c) Both Statement-2 and Statement-4 are Correct. d) Both Statement-3 and Statement-4 are Correct

28.	Consider the Series in Python Pandas as given below:
	
	1993 64
	1994 76
	1995 91
	1996 94
	1997 89
	1998 92
	dtype: int64
	
	Rishav has written the following code to create the above Series with some gaps in the code:
	import pandas as pd
	year=_____ # Statement-1
	successrate=[64,76,91,94,89,92]
	c=pd.Series(successrate,_____) # Statement-2
	print(c)
	
	What should be written in Statement-1 to create the List "year" storing 1993,1994,1995,1995,1997,1998?
	
	(a) year=(1993,1994,1995,1995,1997,1998)
	(b) year={1993,1994,1995,1995,1997,1998}
	(c) **year=[1993,1994,1995,1995,1997,1998]**
	(d)year=range(1993,1998)

29.	What should be written in Statement-2 to create the index of the Series as shown in the above diagram? (a) index=successrate (b) index=[0,1,2,3,4,5,6,7] (c) index='year' (d) **index=year**
30.	What should be the correct code for displaying the Series as: 1995 91 1996 94 1997 89

	(a) **print(c[2:5])** (b) print(c[3:6]) (c) print(c[3:5]) (d)print(c[2:6])
31.	Choose the correct code for displaying the successrate above 90 along with the corresponding year from the above Series. i) print(c>90) ii) print([c>90]) iii) print(c[c>90]) iv) print(c.loc[c>90]) (a) Only (ii) is correct. (b) **Both (iii) and (iv) correct** (c) Both (ii) and (iii) correct (d) Both (ii) and (iv) correct
32.	_____is a cybercrime in which a target or targets are contacted by email, telephone or text message by someone posing as a legitimate institution to lure individuals into providing sensitive data such as personally identifiable information, banking and credit card details, and passwords. a. Plagiarism b. **Phishing** c. Cyberstalking d. Hacking
33.	Choose the correct Output of the following Python Code? import pandas as pd import numpy as np A=np.arange(10,20,3) B=A+4 S=pd.Series(A,index=B) print(S) (a) (b) (c) (d) None of the above. **14 10** 10 14 10 17 **17 13** 13 17 14 13 **20 16** 20 16 16 19 **23 19** 23 19 23 20
34.	Consider the following Series-S: 0 North 1 East 2 West 3 South Which of the following Statements will recreate the Series as: 1 East 2 West (a) S=S.drop([1,4]) (b) S=S.pop([0,3]) (c) S=S.pop([1,4]) **(d) S=S.drop([0,3])**
35.	Which is the correct command to read 1st 10 records from a CSV File "Product.CSV" into a Pandas Dataframe PR? (a) PR=pandas.DataFrame('Product.csv',head=10)

<table>
<tr><td></td><td>(b) PR=pandas.read_csv('Product.csv',rows=10)
(c) PR=pandas.DataFrame('Product.csv',nrows=10)
(d) PR=pandas.read_csv('Product.csv',nrows=10)</td></tr>
<tr><td>36.</td><td>Which of the following is a characteristics of Data Visualisation?
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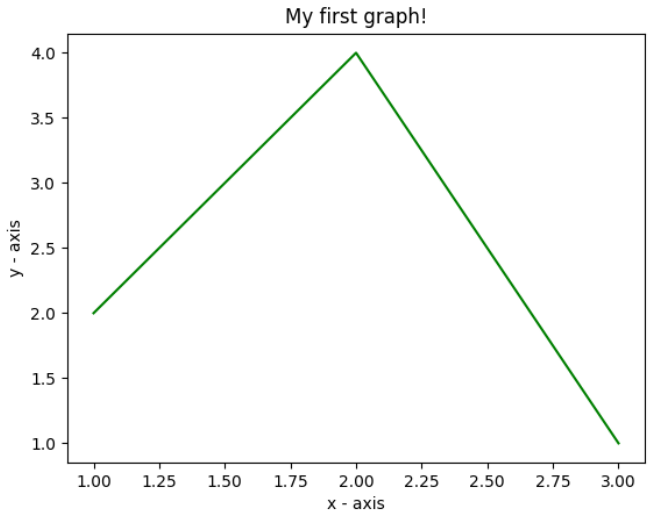
d) All of the above</td></tr>
<tr><td>40.</td><td>The following table shows the python code and its expected output.
<table><tr><th>Python code</th><th>Output</th></tr><tr><td><pre>1 import pandas as pd
2 x = [10, 20 30]
3 ser = pd.Series(x, _____=["r1", "r2", "r3"])
4 print(ser)</pre></td><td><pre>r1 10
r2 20
r3 30</pre></td></tr></table>
Choose the correct word for blank space in line 3 for printing the column:
a. index
b. column
c. col
d. heads</td></tr>
<tr><td>41.</td><td>What are the etiquettes to create a safe pass word for Online sites
a. Choose password wisely it should be the combination of Capital, small letters , numbers and special characters .
b. Keep the same password for all the Logins.
c. Don't change the password regularly.
d. Share your password to your near ones.</td></tr>
<tr><td>42.</td><td></td></tr>
</table>

	dt=({'Name':['Akshit','Bharat','Chetan','Dhaval','Gaurang'], 'InternalMarks':[18,19,20,18,19], 'AnnualExam':[76,78,80,76,73]}) df=pd.DataFrame(dt) Which of the following code will print names and Annual marks of students? **a) print(df.loc[:,'Name':'AnnualExam'])** b) print(df.loc['Name':'AnnualExam']) c) print(df.loc[:,df.columns!='InternalMarks']) d) All of these
43.	What is the correct output for following Python code: import pandas as pd data = {"Marks1": 90, "Marks2": 95, "Marks3": 97} ser = pd.Series(data) print(ser) **a)** **Marks1 90** **Marks2 95** **Marks3 97** b) Marks1 Marks2 Marks3 90 95 97 c) Marks1 Marks2 Marks3 95 90 97 d)No output
44.	Mr.Sharma is trying to write a code to plot line graph in green shown in fig-1. Help Mr. Sharma to fill in the blanks of the code and get the desired output. 

	import matplotlib.pyplot as plt # statement 1
	x = [1,2,3] # statement 2
	y = [2,4,1] # statement 3
	plt.plot(_____) #statement 4
	plt.xlabel('x - axis')
	plt.ylabel('y - axis')
	plt.title ('My first graph!')
	# function to show the plot
	Plt.show()
	
	Which of the following lines will be applicable for statement 4?
	a)plt.plot(x, y, color='g')
	b)plt.plot(x, y, color= g)
	c)plt.plot(color='g',x,y)
	d)plt.plot(x, y, color=green)

45.	If Anu decides that her software should be available for free and the code to be open for all, it is called as _____ a) Proprietary software **b) Free and open source software** c) Free software d) None of the above
46.	**Assertion (A) :** *pandas* is an open source Python library which offers high performance, easy-to-use data structures and data analysis tools. **Reason (R) :** Professionals and developers are using the pandas library in data science and machine learning. **a. Both A and R are true and R is the correct explanation of A** b. Both A and R are true but R is not the correct explanation of A c. A is true but R is false d. A is false but R is true
47.	What is the correct syntax to return both the first row and the second row in a Pandas DataFrame df? **a. df.loc[[0,1]]** b. df.[[0,1]] c. df.loc[[0-1]] d. df.[[0-1]]
48.	**Assertion (A):** Nidhi has create dataframe Df1 **Df1** She can expand or delete any row /column in this dataframe. **Reason(R):** In python DataFrame objects can be concatenated or merged **a) Both A and R are true and R is the correct explanation of A.** b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.

	Student	Marks	Sports
I	ABC	24.5	Cricket
II	DEF	27.5	Badminton
III	GHI	30.0	Football

49.	**Statement (A):** A bar chart represents categorical data with rectangular bars. **Statement (B):** It is an accurate graphical representation of the distribution of numerical data. 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

Section - C Section C, consists of 6 Question (50 to 55). Attempt any 5 questions. Case Study

Mr Rishi has created a dataframe MARKS and wants to peform some operations on the dataframe.He is getting confused with some functions.Help him find the correct options

	Name	SEM-1	SEM-2	SEM-3
1	Mohan Sharma	76	56	68
2	Anand Sharma	56	93	98
3	Deeksha Sen	68	89	100
4	Pramod Nair	76	65	61

50.	Choose the correct option to display the last 2 rows of the DataFrame. (a) print(MARKS.tail(-2)) (b) print(MARKS.bottom(2)) **(c) print(MARKS.tail(2))** (d) print(MARKS.loc[2])
51.	Rishi wants to change the index of the above Dataframe to 'A','B','C','D'. Help him to select the correct command to do so. (a) **MARKS.index=['A','B','C','D']** (b) MARKS=MARKS.index(['A','B','C','D']) (c) MARKS=MARKS. (index={1:'A',2:'B',3:'C',4:'D'}) (d) index=['A','B','C','D']
52.	What will the following Python Code produce Output? print(MARKS[MARKS['SEM-2']>80].Name) (a) **2 Anand Sharma** **3 Deeksha Sen** (b) 2 Anand Sharma Mohan Sharma (c) 3 Deeksha Sen 4 Pramod Nair (d) None of the above.
53.	What is the size of the above dataframe? a) 4 **b)16**

	c)12 d)8
54.	Which command in Python Pandas will display the above dataframe in the transpose form i.e. interchanging rows and columns? (a) **>>>MARKS.T** (b) >>>MARKS.t (c) >>>T(MARKS) (d) >>>t(MARKS)
55.	He wants to set all the values to zero in data frame, choose the right command to do so: a. MARKS=0 b. MARKS[]=0 **c. MARKS[:]=0** d. MARKS[:]==0

KENDRIYA VIDYALAYA SULUR, CHENNAI REGION
PRACTICE TEST - I 2021

CLASS : 12 IP Marks: 35
Time:90 min

SET - 1

General Instructions:

- *The question paper is divided into 3 Sections - A, B and C.*
- *Section A, consist of 25 Questions (1-25). Attempt any 20 questions.*
- *Section B, consist of 24 Questions (26-49). Attempt any 20 questions.*
- *Section C, consist of 6 case study based Questions (50-55). Attempt any 5 questions.*
- *Each question carries 0.77 marks.*

Q.No.	Section – A Section A consists of 25 questions, attempt any 20 questions.

1	Fill in the blanks
	`# Series Creation from List with custom indexing`
	`import pandas as pd`
	`l1=[11,12,13,14]`
	`series1=pd.Series(l1,_____=["1st","2nd","3rd","4th"])`
	`print(series1)`
	a) row b) index c) column d) Error

2	While trying to create series from dictionary, keys of dictionary become index. a)True b) False c) Depends on Python Version d) Depends on machine configuration
3	To get the number of dimensions of Series object, _____ attribute is used. a) size b) shape c) itemsize d) ndim
4	To get last element of series s1, we may use s1._____ function. a) tail(1) b) tail() c) last[1] d) last[-1]
5	To change the thickness of bars in bar chart, which of the following argument with a float value is used? a) thick b) thickness c) width d) barwidth
6	Which one of these is not a valid line style in matplotlib a) '-' b) '- -' c) '-.' d) '<'
7	Choose correct option : import pandas as p1 import numpy as np a1=np.arange(2,11,2) s1=p1.Series(a1,index=list('ABCDE')) print(s1.ndim)

	Statement 1: Above code will give output as 1. **Statement 2:** Series is a one dimensional data structure. a) Only Statement 1 is true b) Only Statement 2 is true c) Both Statement 1 and 2 are true, but Statement 2 is not correct reasoning of Statement 1. d) Both Statement 1 and 2 are true, but Statement 2 is correct reasoning of Statement 1.
8	Default value of the number of bins to be created in a histogram is a) 5 b) 10 c) 15 d) 20
9	Which of the following command is used to install pandas? a) pip pandas b) pip install pandas c) install pandas d) None of the above
10	The following code create a dataframe named 'D1' with _____ columns. import pandas as pd D1 = pd.DataFrame([1,2,3]) a) 1 b) 2 c) 3 d) 4
11	Which of the following is used to give user defined column index in DataFrame? a) Index b) column c) columns d) colindex
12	In given code dataframe 'D1' has _____ rows and _____ columns import pandas as pd LoD = [{'a':10, 'b':20}, {'a':5, 'b':10, 'c':20},{'a':7, 'd':10, 'e':20}] D1 = pd.DataFrame(LoD) a) 3,3 b) 3,4 c) 3,5 d) None of the above
13	We can add a new row to a DataFrame using the _____ method a) rloc[ ] b) loc[ ] c) iloc[ ] d) None of the above.
14	To delete a row, the parameter axis of function drop( ) is assigned the value _____ a) 0 b) 1 c) 2 d) 3
15	Which of the following function is used to load the data from the CSV file to DataFrame? a) readcsv( ) b) read_csv( ) c) csv.read( ) d) None
16	What is the purpose of legend? a) A legend is an area describing the elements of the graph. b) A legend is top area with information about graph c) A legend is additional information of x and y labels d) A legend is a mini box with bars data

17	Which one of the following is not considered as plagiarism? a) Make use of work of another and misrepresent it as your own b) Drawing content from the work of another without acknowledging the source. c) Paraphrasing too closely to the original text. d) Drawing content from another work and adapting it with due acknowledgement.
18	Intellectual Property Rights(I.P.R) covers: a)Copyrights b)Trademarks c)Patents d)All of the above
19	A legal right created by the law of a country that grants the creator of an original work exclusive rights for its use and distribution is called _____ a) Copyright b) Invention c) Backup d) Worm
20	Protecting computers and the information it contain against unwanted access, malicious code, destruction is called _____ a) computer monitoring b) electronic policy c)audit control d)computer security
21	Which of the following is a type of a/an OSS(open source software)? a) Adobe Photoshop b) Microsoft Office c) Linux d) Microsoft Windows
22	How could you improve your digital footprint? a) By checking your social media privacy setting to make sure that you are sharing with people you know and trust. b) Share your personal information with a good friend and family member. c) it's best not to post anything if want to stay safe, d) its not necessary to think before you post.
23	The free software movement is headed by a) Free Software foundation b) Debian free software guidelines. c) Brekely software distribution d) Open source initiative
24	Which of the following would be creative work protected by copyright: (a) A list of all Indian President names (b) A portrait of your family (c) A song you Wrote (d) The name of your pet dog
25	_____is least restrictive license. a) MIT b) Apache c) GPL d) LGPL
	Section – B **Section B consists of 24 questions, attempt any 20 questions.**
26	To have output of below python code as shown in figure, identify which attribute can be used to fill in the blank.

```
import pandas as pd
l1=[11,12,13,14]
s1=pd.Series(l1, index=['I','II','III','IV'])
print(s1._____['II':])
```

```
II     12
III    13
IV     14
```

a) loc b) iloc c) loc or iloc d) neither loc nor iloc

27 What will be the output of following code-

```
import pandas as pd
s1=pd.Series([1, 2, 2, 7, 'Sachin', 77.5])
print(s1.head( ))
```

a. Last data elements of series along with its indices i.e. -1
b. First data element of series along with its indices i.e. 0
c. Entire series
d. First five data elements of series along with its indices i.e. 0,1,2,3,4 respectively

28 To access elements as 12,13,14 respectively , what python command can be used

```
# Selection in custom indices using iloc
import pandas as pd
l1=[11,12,13,14,15]
s1=pd.Series(l1, index=['a','b','c','d','e'])
```

a. s1.loc['b': 'd']
b. s1.loc[1:3]
c. s1.iloc['b': 'd']
d. Neither s1.iloc[1:3] nor s1.loc['b': 'd']

29 Which of the following code will generate the following output?

```
Jan   31
Feb  28
Mar 31
dtype: int64
```

a.
```
import pandas as pd
S1 = pd.Series(data = [31,28,31], index=["Jan","Feb","Mar"])
print(S1)
```

b.
```
import pandas as pd
S1 = p1.series([31,28,31], index=["Jan","Feb","Mar"])
```

print(S1)

c. import pandas as pd
S1 = pd.Series([31,28,31], columns=["Jan","Feb","Mar"])
print(S1)

d. None of the above

30 The _____ function on Series object returns only the count of non-NaN values in it.

a) total( ) b) count( ) c) length( ) d) len( )

31 Write statement to transpose dataframe DF.

a) DF.t c) DF.transpose
b) DF.T d) DF.T( )

Consider the following DataFrame **edf** and answer the questions (32 and 33) given below :

EMPID	DESIGNATION	SALARY
E01	PRT	30000
E02	PGT	60000
E03	TGT	45000
E04	PRT	35000
E05	PRINCIPAL	80000

32 Write down the command that will give the following output :-

```
  EMPID  SALARY
0 E01    30000
1 E02    60000
2 E03    45000
3 E04    35000
4 E05    80000
```

a) edf.loc(:,:) b) edf.loc[:,[0,2]]
b) edf.iloc[:,[0:3]] d) edf.iloc[:,[0,2]]

33 Write down the command that will give the following output :-

```
   EMPID  DESIGNATION SALARY
0  E01    PRT         30000
1  E02    PGT         60000
3  E04    PRT         35000
4  E05    PRINCIPAL   80000
```

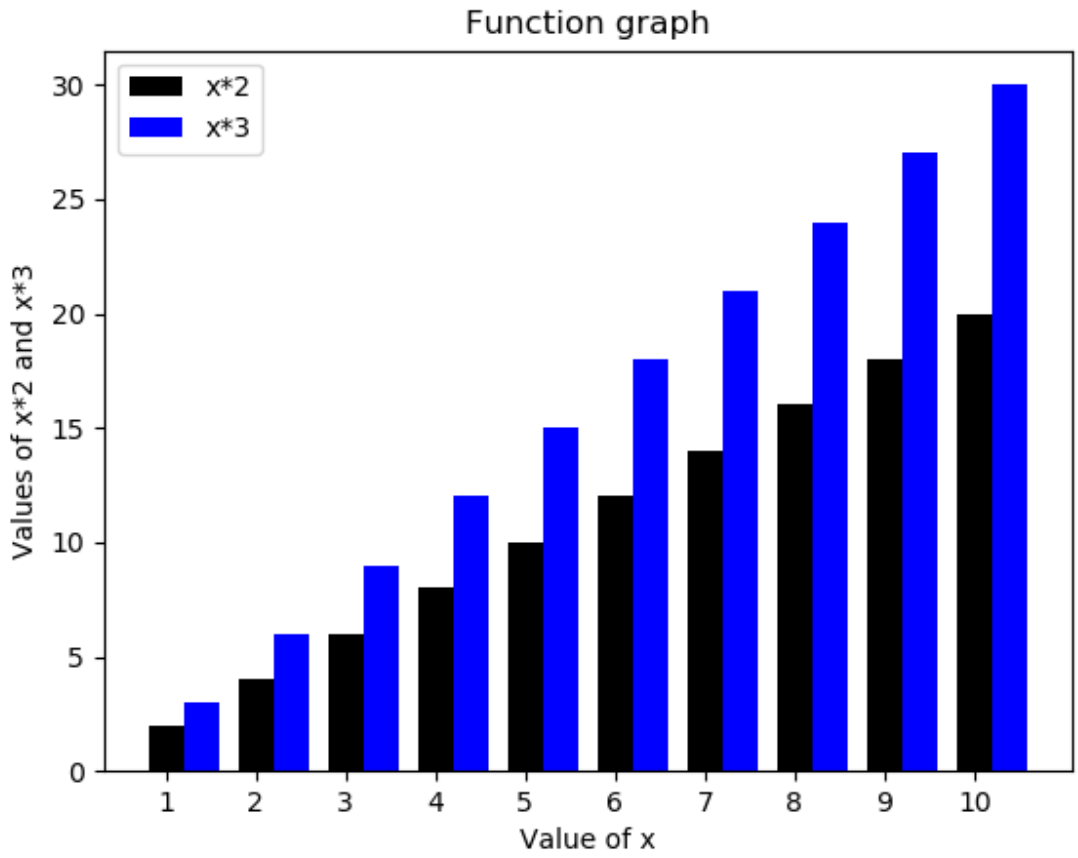
	a) edf.drop( ) b) edf.drop(2) c) edf.head(4) d) edf.drop(1)
34	Consider a Data Frame containing three columns C1, C2 and C3, which of the below given commands can be used to delete the column C3? (a) del df.C3 (b) del df.loc[:,'C3'] (c) del df.iloc[:,2] (d) del df['C3']

35	Consider the below given Data Frame df
	
	`     C1  C2  C3`
	`R1  11  19  20`
	`R2  22   5   6`
	`R3  12  15  16`
	
	The output of the following command will be
	print(df[df.C2>10].max( )['C1'])
	(a) 22
	(b) 10
	(c) 12
	(d) 11

36	The unauthorized use or distribution of software is a) Software piracy b) Piracy c) Software copy d) Pirated Software
37	**Assertion (A):** Amit has stolen the content of a research paper and published it online. Amit has performed cybercrime. **Reason (R):** Plagiarism is the act of stealing someone's work and presenting it as one's own work. *a. Both (A) and (R) are True, and (R) is the correct explanation of (A).* *b. Both (A) and (R) are True, but (R) is not the correct explanation of (A).* *c. (A) is true, but (R) is false.* d. (A) is false, but (R) is true.
38	Suppose a dataframe 'Df1' contains information about student having columns rollno, name, class and section. Write code to add a new column 'fee'. a) Df1['fee'] = ([100,200,300]) b) Df1['fee'] = ([100,200,300]) b) Df1.'fee' = ([100,200,300]) d) Df1.addcol['fee'] = ([100,200,300])
39	**Assertion (A) : P***andas* is an open source Python library which offers high performance,

	easy-to-use data structures and data analysis tools. **Reason (R) :** Professionals and developers are using the pandas library in data science and machine learning. a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is not the correct explanation of A c) A is true but R is false d) A is false but R is true
40	**Assertion (A) :** Digital footprint is the trail of data we leave behind when we visit any website (or use any online application or portal) to fill-in data or perform any transaction. **Reason (R) :** While online, all of us need to be aware of how to conduct ourselves, how best to relate with others and what ethics, morals and values to maintain. a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is not the correct explanation of A c) A is true but R is false d) A is false but R is true
41	Choose the correct code that produces the output of a series as below: 9 18 10 20 11 22 12 24 a) a=np.arange(9, 13) s1=pd.Series(index=a, data=a*2) print(s1) b) a=[9, 10, 11, 12] s1=pd.Series(index=a, data=a*2) print(s1) c) Both the above d) None of the above
42	In given code dataframe 'D1' has _____ rows and _____ columns. import pandas as pd S1 = pd.Series([1, 2, 3, 4], index = ['a', 'b','c','d']) S2 = pd.Series([11, 22, 33, 44], index = ['a', 'bb','c','dd']) D1 = pd.DataFrame([S1,S2]) a) 2, 4 b) 4, 6 c) 4, 4 d) 2, 6
43	**Assertion (A):** DataFrame.count( ) function will display the sum of the values from the data frame . **Reason (R):** axis=0 ,argument is to used to find sum column-wise

	a) Both A and R are true and R is the correct explanation of A. b) A is true but R is false. c) A is false but R is true. d) Both A and R are false
44	What will be the output of following code: dt=({'Name':['Akshit','Bharat','Chetan','Dhaval','Gaurang'], 'InternalMarks':[18,19,20,18,19], 'AnnualExam':[76,78,80,76,73]}) df=pd.DataFrame(dt) print(df.iloc[0:2,0:2]) a) Name InternalMarks 0 Akshit 18 1 Bharat 19 b) Name AnnualExam 0 Akshit 76 1 Bharat 78 2 Chetan 80 c) Name InternalMarks AnnualExam 1 Akshit 18 76 2 Bharat 19 78 d)Empty DataFrame Columns: [Name, InternalMarks, AnnualExam] Index : []
45	How can we make bar chart horizontal? a) plt.bar( ) b) plt.hbar( ) c) plt.barh( ) d) plt.rightbar( )
46	Knowledge and understanding of netiquette is useful because a) It will help you create a positive impression on those you meet in cyberspace b) It explains some of the technical limitations of online communications c) It explains the conventions already being used by millions of cybernauts. d) All of the above.
47	The rights of the owner of the information to decide to decide how much information is to be shared is known as_____ (a) Intelligent property rights (b) Intellectual property rights (c) Interactive property rights (d) Instance property rights
48	What is the name of the IT Law that India is having in the Indian Legislature ? a) India's Technology (IT) Act 2000 b) India's Digital information Technology (DIT) Act ,2000 c) India's Information Technology (IT) Act ,2000

	d) The Technology Act ,2008
49	Which of the following element/s is/are cause of e-waste? a) Lead b) Cadmium c) Beryllium, or Brominates flame retardants d) All of the above
	Section – C **Section C, consists of 6 Question (50 to 55). Attempt any 5 questions.**
	Ms. Ankita wants to plot the below given graph of y=x*2 vs y=x*3 for x in the range 1 to 10. However, she is facing some problems. Help her by answering a few questions related to the code written by her.  Code:

	``
	import matplotlib.pyplot as plt
	import numpy as np
	x=np.arange(1,11)
	y=x*2
	z=x*3
	plt.bar(x,y,color=__,width=0.4,label='x*2')#statement 1
	plt.bar(____,z,color='b',width=0.4,label='x*3')#statement 2
	plt._____(x) #statement 3
	plt._____() #statement 4
	plt.xlabel('Value of x')
	plt.ylabel('Values of x*2 and x*3')
	plt.title('Function graph')
	_____ #statement 5
	``

50	What color code should be used to assign black color to the plot of y=x*2 in the line marked as statement 1? a) bl b) c c) bk d) k
51	What x axis should be chosen for y=x*3 plot in statement 2 so that the bars do not overlap. a) x b) 0.4 c) x + 0.4 d) x * 0.4
52	Fill in the blank in statement 3 to print all the points on the x axis. a) xticks b) xlim c) xlabel d) xlabels
53	Fill in the blank in statement 4 to display the legends as shown in the plot. a) legends b) displaylegends c) displaylegend d) legend
54	Fill in the blank in statement 5 to display the plot. a) plt.display( ) b) plt.show( ) c) plt.showplot( ) d) plt.displayplot( )
55	Choose the function to store the plot for later use. a) saveimg( ) b) savechart( ) c) savefig( ) d) savepic( )

KENDRIYA VIDYALAYA SULUR, CHENNAI REGION

PRACTICE TEST - I 2021

CLASS : 12 IP MARKING SCHEME Marks: 35

SET - 1

Q.No	Section - A
1	b) index
2	a)True
3	d) ndim
4	a)tail(1)
5	c) width
6	d) '<'
7	d) Both Statement 1 and 2 are true, but Statement 2 is correct reasoning of Statement 1.
8	b) 10
9	b) pip install pandas
10	a) 1
11	c) columns
12	c) 3,5
13	b) loc[ ]
14	a) 0
15	b) read_csv( )
16	a) A legend is an area describing the elements of the graph.
17	d) Drawing content from another work and adapting it with due acknowledgement.
18	d)All of the above
19	a) Copyright
20	d)computer security
21	c) Linux
22	a) By checking your social media privacy setting to make sure that you are sharing with people you know and trust.
23	a) Free Software foundation
24	(c) A song you Wrote
25	a) MIT
	Section - B
26	a) Loc

27	d. First five data elements of series along with its indices i.e. 0,1,2,3,4 respectively
28	a) s1.loc['b': 'd']
29	a. import pandas as pd S1 = pd.Series(data = [31,28,31], index=["Jan","Feb","Mar"]) print(S1)
30	b) count( )
31	b) DF.T
32	d) edf.iloc[:,[0,2]]
33	b) edf.drop(2)
34	(d) del df['C3']
35	(c) 12
36	a) Software piracy
37	d. (A) is false, but (R) is true.
38	a) Df1['fee'] = ([100,200,300])
39	a) Both A and R are true and R is the correct explanation of A
40	b) Both A and R are true but R is not the correct explanation of A
41	a) a=np.arange(9, 13) s1=pd.Series(index=a, data=a*2) print(s1)
42	d) 2, 6
43	c) A is false but R is true.
44	a) Name InternalMarks 0 Akshit 18 1 Bharat 19
45	c) plt.barh( )
46	b) It explains some of the technical limitations of online communications
47	(b) Intellectual property rights
48	c)India's Information Technology (IT) Act ,2000
49	d)All of the above
	Section - C
50	d) k
51	c) x + 0.4
52	a) Xticks
53	d) legend
54	b) plt.show( )
55	c) savefig( )

Kendriya Vidyalaya No.2 Tambaram, Chennai

Question Paper Term-I

Subject: Informatics Practices (Code-065) Time Allowed: 90 minutes

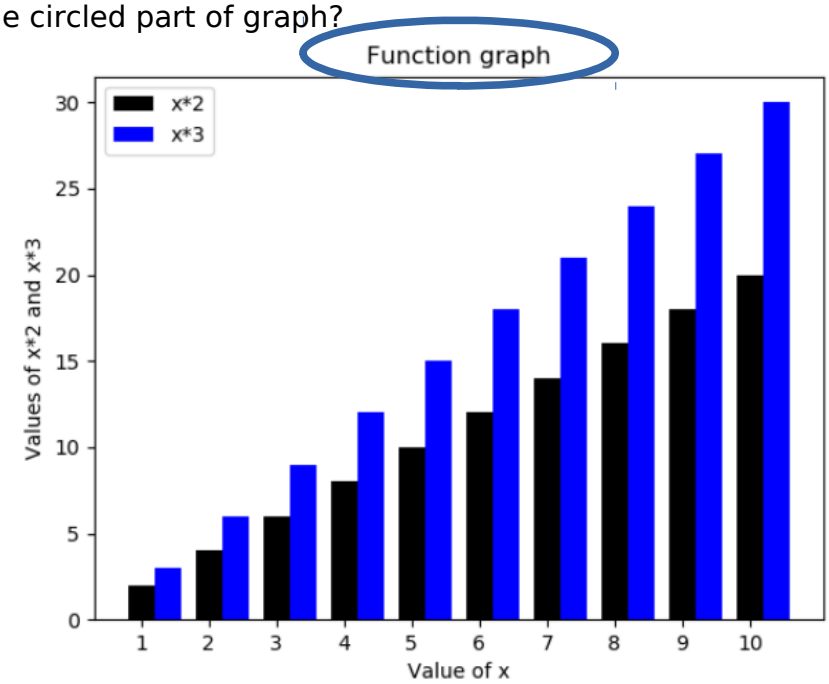
Class – XII Maximum Marks: 35

General Instructions:

1. The paper is divided into 3 Sections- A, B and C.
2. Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
3. Section B, consists of Question number 26 to 49 and student need to attempt 20 questions.
4. Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
5. All questions carry equal marks.

	Section – A **Section A consists of 25 questions, attempt any 20 questions**
1	To get the number of dimensions of a Series object which of the following attribute can be used? a. Shape b. Ndim c. Size d. None of the above
2	To display first three elements of a Series object S, you may write a. S.tail() b. S.tail(3) c. S.head(3) d. S.head()
3	The rows of a DataFrame are identified with axis _____ . a. 3 b. 2 c. 1 d. 0
4	Which of the following function is used to extract data from a Series based on numeric index? a. loc ( ) b. iloc( ) c. tail( ) d. head( )
5	In Pandas the function used to delete a column or a row in a DataFrame is _____. a. delete b. del c. drop d. pop
6	Which of the following is not Pandas data structure? a. Series b. Data Frame c. Queue d. Panel
7	The function used to display graph is _____ a. display( ) b. Print( ) c. savefig ( ) d. show ( )
8	Which of the following command will display a column named ‘city’ from a dataframe ‘df’? i. print(df.city) ii. print(df[city]) iii. print(df[‘city’]) iv. print(df.loc[‘city’]) a. i and ii b. ii and iii c. iii and iv d. iii
9	To plot x versus y, we can write _____ #plt is an alias for matplotlib.pyplot a. plt.plot(y, x) b. plt.plot(x) c. plt.plot(x,y) d. plt.plot(y)
10	To check if the Series object contains NaN values, ---------- attribute is

	displayed. a. isna b. hasna c. nan d. hasnans
11	In given code dataframe 'D1' has _____ rows and _____ columns. import pandas as pd LoD = [{'a':10, 'b':20}, {'a':5, 'b':10, 'c':20},{'a':7, 'd':10, 'e':20}] D1 = pd.DataFrame(LoD) a. 3, 3 b. 3, 4 c. 3, 5 d. 5,3
12	_Digital _____ is a way of authenticating the identity of the creator or producer of digital information. a. Signature b. Footprint c. Security d. Safety
13	According to a survey, one of the major asian country generates approximately about 2 million tonnes of electronic waste per year. Only 1.5 % of the total e-waste gets recycled. Which of the following is not a correct method to manage e-waste . a. Increase the life span of a product by repairing b. Use refabricated productes c. Burry the products in landfill d. Company gives the buy back option
14	By encryption of a text we mean a. Compressing it b. Expanding it c. Scrambling it to preserve its security d. Hashing it
15	Which of the following is not a type of cyber crime? a. Data theft b. Forgery c. Damage to data and systems d. Plagiarise the content
16	Which of the following is an disadvantage of open source software? a. High quality software with lots of features b. Not as customizable c. May not have been tested as much as proprietary software, thus might have bugs d. You can edit the source code to customize it
17	_____refers to a type of malware that displays unwanted advertisement on your computer or device. a. Pharming b. Spyware c. Addware d. Malware
18	Ramya has written a poem. Under which of the following will it be protected? a. Patent b. Trademark c. Copyright d. Designs
19	GPL licence is given for a. Open Source Software b. Propriatary Software c. Inventions d. None of the above
20	_____ are websites or applications that enable users to participate by creating and sharing content with others in the community. a. Social media b. Social channel c. Social networking d. None of the above
21	A Series is created with 10 element including one missing value. How many elements would be displayed by the following command? print(s.count) a. 10 b. 9

	c. Error d. Can not predict as data type is not known
22	The axis 1 identifies a dataframe's a. rows b. columns c. values d. datatype
23	Which of the following parameters of the read_csv function is used to make one of the columns of the data in the csv file as index of the data frame. a. skiprows b. index_row c. nrows d. index_col
24	Code to create the dataframe: import pandas as pd df=pd.DataFrame([[21,22,19,22],[23,22,16,17],[30,25,26,21]],\ _____ =['S1','S2','S3'])#statement 1 Which of the following would correctly complete the statement 1? a. row b. column c. columns d. index
25	All Pandas' data structures are …… mutable but not always …… mutable. (a) size, value (b) semantic, size (c) value, size (d) none of these
	Section – B Section B consists of 24 Questions (26 to 49). Attempt any 20 questions.
26	Consider the following graph. Which of the following function is used to display the circled part of graph? a.  plt.xlabel( ) b. plt.ylabel c. plt.show d. plt.title

27	How many values will be there in array1, if given code is not returning any error? series4 = pd.Series(array1,index = [“Jan”, “Feb”, “Mar”, “Apr”]) a. 1 b. 2 c. 3 d. 4
28	Read the statements given below and identify the right option **Statement A**: A Line plot is a graph that shows the frequency of a data along a number line. **Statement B**: The legend is displayed by default associating the colours with the plotted data. a. Statement A and B are correct and Statement B is correct Explanation of statement A. b. Statement A and B are correct and Statement B is not correct Explanation of statement A. c. Statement A is correct, but Statement B is incorrect d. Statement A is incorrect, but Statement B is correct
29	What will be the output of the following code? import pandas as pd series1 = pd.Series([10,20,30]) print(series1) a. 0 10 1 20 2 30 dtype: int64 b. 10 10 20 20 30 30 dtype: int64 c. 1 10 2 20 3 30 dtype: int64 d. -1 10 -2 20 -3 30 dtype: int64
30	import pandas as pd Capital=['Delhi',’Beijing’,’Tokyo’,’Berlin”] Country=['India','China','Japan','Germany'] Which of the following will create a Series? a. S=df.Series(Capital,index=Country) b. S=df.series(capital,index=country) c. S=df.Series(capital,country) d. S=pd.Series(capital,index=country)
31	Read the statements given below and identify the right option **Statement A**: fill_value parameter in the add( ) function can be used to replace the NaN value during addition operation. **Statement B**: NaN in a Series represent missing data. a. Statement A and B are correct and Statement B is correct Explanation of statement A. b. Statement A and B are correct and Statement B is not correct Explanation of statement A. c. Statement A is correct, but Statement B is incorrect d. Statement A is incorrect, but Statement B is correct
32	Which of the following are NOT some common net etiquettes? a. Refrain from personal abuse b. Always spam c. Write clearly and concisely d. Do not plagiarize
33	Which of the following will NOT become a part of digital footprint ? a. Website visited by you b. Facebook comment

	c. Using google map for a destination d. Taking selfie
34	Read the statements given below and identify the right option **Statement A**: A phone call from someone purporting to represent a financial institution you do business with and are asked to provide or update personal or account information. **Statement B**: Identity theft is a serious cyber crime involving the using personal information to commit fraud. a. Statement A and B are correct and Statement B is correct Explanation of statement A. b. Statement A and B are correct and Statement B is not correct Explanation of statement A. c. Statement A is correct, but Statement B is incorrect d. Statement A is incorrect, but Statement B is correct
35	GPL stands for _____ a. General Public License b. GNU General Private License c. GNU General Public License d. GNU Public License
36	US $ 3,50,000 from accounts of four US customers were dishonestly transferred to bogus accounts. This will give a lot of ammunition to those lobbying against outsourcing in US. Such cases happen all over the world but when it happens in India it is a serious matter and we can not ignore it. The incidence given above is an example of.... a. Identity Theft b. Cyber Trolling c. Financial Fraud d. Phishing
37	_____ operating system come under FOSS. a. Ubuntu b. Unix c. Mac d. Windows
38	Which hazardous chemical is common in the discarded batteries? a. Lead b. Iron c. Arsenic d. Lithium
39	What will be the output for the following code ? import pandas as pd import numpy as np S = pd.Series (np.random.randint(2,size=(10,)) print (S.size) a. 0 b. 1 c. 10 d. None of the above
40	Consider the dataframe below as (df1) |	Name	Age	Marks | |---|---|---|---| | 0 | Amit | 15 | 90.0 | | 1 | Bhavdeep | 16 | NaN | | 2 | Reema | 17 | 87.0 | What will be the output produced by print df.Marks/2? a. 0 45.0 1 NaN 2 43.5 Name: Marks, dtype: float64 b. 0 45 1 NaN 2 43.5 Name: Marks, dtype: float64 c. 0 45.0 1 NaN d. 0 45.0 1 0

	2 43 Name: Marks, dtype: float64 2 43.5 Name: Marks, dtype: float64

41	Following code has syntax error.
	
	import pandas as pd # Line 1
	s = pd.series([1,2,3,4,5],index = ['a','b','c','d','e']) # Line 2
	print (s[[‘a’,'c','d']]) # Line 3
	Identify the line having the error.
	
	a. Line 1 b. Line 2 c. Line 3 d. Line 2 and Line 3

42	Consider the following DataFrame ‘df’. Name Age 0 Alex 10 1 Bob 12 2 Clarke 13 3 John 11 Which of the following command will add a column named ‘Marks’ with value 10. a. df.Marks = 10 b. df[Marks]=10 c. df[‘Marks’]=10 d. df.loc['Marks']=10
43	Which command will be used to delete 3 and 5 rows of the data frame? Assuming the data frame name as DF. a. DF.drop([2,4],axis=0) b. DF.drop([2,4],axis=1) c. DF.drop([3,5],axis=1) d. DF.drop([3,5])
44	Ritika is a new learner for the python pandas, and she is aware of some concepts of python. She has created some lists, but is unable to create the data frame from the same. Help her by identifying the statement which will create the data frame. import pandas as pd Name=['Manpreet','Kavil','Manu','Ria'] Phy=[70,60,76,89] Chem=[30,70,50,65] a. df=pd.DataFrame({"Name":Name,"Phy":Phy,"Chem":Chem}) b. d=("Name":Name,"Phy":Phy,"Chem":Chem) df=pd.DataFrame(d) c. df=pd.DataFrame([Name,Phy,Chem],columns=['Name',"Phy","Chem"]) d. df=pd.DataFrame({Name:"Name", Phy :"Phy",Chem: "Chem"})
45	Consider the following DataFrame ‘df’ with ‘ID’ as index. ID | Name | Age | Fav_Color | Points T01 | Rahul Anand | 32 | Blue | 73 T02 | MohakGirdhar | 25 | Green | 82 T03 | Rajeev Tyagi | 45 | Orange | 29 T04 | Rohini Malik | 30 | Pink | 39 Which of the following command will extract the complete row ‘T03’. a. df.loc[: , ‘ID’] b. df.loc[‘T03’ , ‘Name’] c. df.loc[‘T02’,’T03’] d. df.loc[‘T03’, :]
46	Write a command to display the rows of the DataFrame ‘df’.

	a. df.values() b. df.rows c. df.columns() d. df.values
47	Consider the DataFrame 'df' with following data. | | Name | Weight | Height | | S1 | Pawan | 50 | 153 | | S2 | Jeewan | 56 | 161 | | S3 | Dhawan | 59 | 149 | What will be the output of the following statement? df['Name'].max() a. Pawan b. Jeewan c. Dhawan d. Error
48	Consider the followng DataFrame 'contact'. | | Name | City | Email | Fees | | 0 | Aksh | Ahmedabad | aksh123@gmail.com | 15000 | | 1 | Bhavin | Baroda | bhavin000@gmail.com | 25000 | | 2 | Charu | Surat | charu123@gmail.com | 12000 | | 3 | Dhara | Anand | dhara174@gmail.com | 11000 | Choose the correct function to rename city columns to location. a. df.rename(columns={'City':'Location'}) b. df.rename(columns={'City'='Location'}) c. df.rename('City'='Location') d. df.rename(df.columns('City','Location'))
49	Consider the following Series object 'fur', Table 350 Chair 200 Sofa 800 Stool 150 What will be the output of the following command? print(fur>300) a. True False False False b. Table 350 c. 350 d. Table True Chair False Sofa False Stool False
	Section C, consists of 6 Question (50 to 55). Attempt any 5 questions.
	Case Study Consider the following Data Frame **df.** | | Name | Rollno | English | Hindi | Maths | Ssc | Science | | 0 | Anita | 1 | 55 | 45 | 87 | 67 | 70 |

	1 Sunita 2 67 65 90 87 56 2 Radha 3 78 76 98 90 78
50	What will be the output of the following command? df.loc[:,'English':'Hindi'] a. English 55 67 78 b. English Hindi 55 45 67 65 78 76 c. Error d. None of the above
51	Which function can be used to change the column label from 'Ssc' to 'SST'? a. reindex b. rename c. restore d. reset
52	The teacher needs to know the marks scored by 'Radha'. Help her to identify the correct set of statement/s from the given options : (a) df1=df[df['name']=='Radha'] print(df1) (b) df1=df[name=='Radha'] print(df1) (c) df1=df[df.name='Radha'] print(df1) (d) df1=df[df.name=='Radha'] print(df1)
53	Which of the following statement/s will delete column 'Rollno' from the dataframe? i. df.pop('Rollno') ii. del df['Rollno'] iii.del (df.Rollno) iv. df.del('Rollno') Choose the correct option: a. both (i) and (ii) b. only (ii) c. (i), (ii) and (iii) d. (i), (ii) and (iv)
54	Which of the following attribure can be used to find the number of students in the dataframe? a. index b. columns c. size d. dtype
55	Which of the following command will display the total marks scored by each student? a. df.sum(axis = 1) b. df.sum(axis = 0) c. df['English]+df['Hindi']+df['Maths']+df['Ssc']+df['Science'] d. None of the above

Kendriya Vidyalaya No.2 Tambaram, Chennai

Question Paper Term-I

Subject: Informatics Practices (Code-065) Time Allowed: 90 minutes

Class – XII Maximum Marks: 35

ANSWER KEY

Q.No	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans
1	B	12	A	23	D	34	B	45	D
2	C	13	C	24	C	35	A	46	D
3	D	14	C	25	C	36	C	47	A
4	B	15	D	26	D	37	A	48	A
5	C	16	C	27	D	38	D	49	D
6	C	17	C	28	D	39	C	50	B
7	D	18	C	29	A	40	A	51	B
8	C	19	A	30	A	41	B	52	A
9	C	20	A	31	A	42	C	53	A
10	D	21	A	32	B	43	D	54	C
11	C	22	B	33	D	44	A	55	A

KENDRIYA VIDYALAYA SANGATHAN, TINSUKIA REGION

Informatics Practices (065) (Theory)
Term 1 (Practice Test) Examination 2021 -2022

Class – XII

MARKING SCHEME

Max Marks: 35 **Max Time: 90 mins.**

General Instructions:

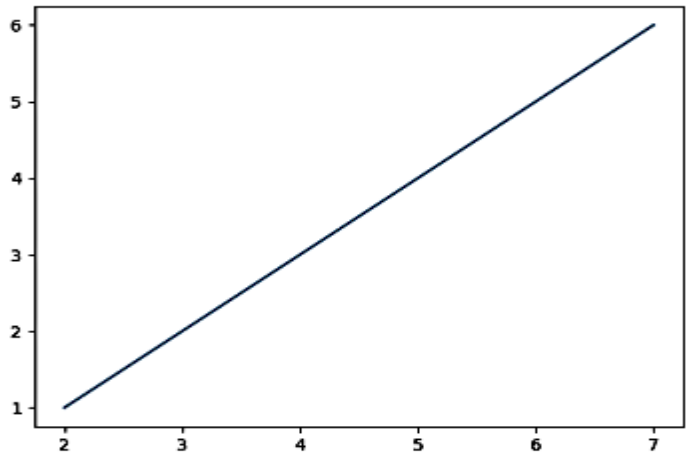
- The paper is divided into 3 Sections- A, B and C.
- Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
- Section B, consists of Question number 26 to 49 and student need to attempt 20 questions.
- Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
- All questions carry equal marks.

Q.No	**SECTION A** **Section A consists of 25 questions, attempt any 20 questions.**
1	What is the main purpose of using pandas library in Python? a) to create a GUI programming b) to create a Database **c) for data analysis** d) for numerical calculations
2	Which of the following is not Pandas data structure? a) Series b) Data Frame **c) Queue** d) Panel
3	In a Series, to know about the dimensions(number of axis), we use **a) <objectname>.ndim** b) <objectname>.dim c) <objectname>.nsize d) <objectname>.nbytes
4	Pandas series is a combination of a) Records arranged in row and column **b) Collection of 1 dimensional data and associated index** c) Collection of 2 dimensional data d) Collection of 3 dimensional data
5	Which of the following pandas attributes gives output in the form of tuple? (a) nbytes (b) ndim **(c) shape** (d) size
6	Ms Shaila want to display the monthly expenditure of a School using a bar graph. Which library she must import so that she can display the expenditure data using a bar graph.

	a) pandas b) plot.pyplot **c) matplotlib.pyplot** d) numpy.pyplot
7	Which of the following is not a valid line style in matplotlib? (a) '-' (b) '--' (c) '-.' **(d) '<'**
8	Using Python Matplotlib, out of the following which can be used to count how many values fall into each interval ? a) Line plot b) Bar graph c**) Histogram** d) Charts
9	Which of the following is not an attribute of a data frame? **a) value** b) size c) shape d) dtypes
10	Which of the following correct statement to import pyplot module? **a) import matplotlib.pyplot** b) import MatPlotLib.PyPlot c) import PyPlot as pl d) import pyplot.plot
11	Which of the following activity is an example of leaving Active digital footprints? a. Surfing internet b. Visiting a website **c. Sending an email to friend** d. None of the above
12	Rahul, owner of a movie parlour, produces and sells pirated CDs and DVDs to his customers. Identify the type of activity he is engaged in. a) Ethical hacking b) Helping people showing new movies c) Identity theft **d) Cybercrime**
13	Proprietary software is a software which is available _____ a) free of charge **b) on paying license fee** c) free for first year only d) d. none of the above
14	Consider a code df=pd.DataFrame([2,4,5,9],index=[True,False,False,True]) Which of the following is used to create the above dataframe? a) Created using Series b) Created using List of Dictionary **c) Created using Boolean indexing**

	d) Created using Strings
15	The name and logo of the software will be protected by _____ a) copyright b) patent **c) registered trademark** d) d. None of the above
16	_____ are websites or applications that enable users to participate by creating and sharing content with others in the community. **a) Social media** b) Social channel c) Social networking d) d. None of the above
17	Data Frame is having True and False as its boolean indexes. The command that can be used to access all the rows corresponding to True boolean index is (a) print(df.loc(True) (b) print(df.loc[:,True]) **(c) print(df.loc[True])** (d) print(df.loc(True,:)
18	_____ means using other's work and not giving adequate citation for use. **a. Plagiarism** b. Licensing c. Copyright d. None of the above
19	Function to display the last n rows in the DataFrame: **a. tail (n)** b. head (n) c. top (n) d. first (n)
20	The process of re-selling old electronic goods at lower prices is called ____ **a. refurbishing** b. recycle c. reuse d. reduce
21	Which of the following is not correct in respect of digital communication? a) Digital communication includes email. b) Digital communication includes instant messaging. **c) Digital communication includes face to face talking.** d) Digital communication includes talking over the cell phone.
22	What is the name of the IT law that India is having in the Indian legislature? a) India's Technology IT Act 2000 b) India's Digital information technology DIT Act, 2000 **c) India's Information Technology IT Act, 2000** d) d. The technology act, 2008.

23	Assume an empty DataFrame df. The command, df.loc[‘a’] = [‘A’, ’B’, ’C’] will add a new a) Row to the DataFarme b) A new column to the DataFrame **c) Will generate an error** d) None
24	Which of the following object you get after reading CSV file by using pandas? **a) DataFrame** b) Character Vector c) Panel d) All of the mentioned
25	In given code dataframe ‘D1’ has _____ rows and _____ columns. import pandas as pd LoD = [{‘a’:10, ‘b’:20}, {‘a’:5, ‘b’:10, ‘c’:20},{‘a’:7, ‘d’:10, ‘e’:20}] D1 = pd.DataFrame(LoD) a) 3, 3 b) 3, 4 **c) 3, 5** d) None of the above
	Section – B **Section B consists of 24 Questions (26 to 49). Attempt any 20 questions**
26	Select the correct statement to assign a new name MySeries to a series object named s ? a) s.Name(‘MySeries’) **b) s.name=’MySeries’** c) s(‘MySeries’) d) s.Name=’MySeries’
27	How many elements will be there in the series named “S1”? S1 = pd.Series(range(5)) print(S1) **a) 5** b) 4 c) 6 d) d. None of the mentioned
28	What will be the output of following code: import pandas as pd s=pd.Series([11,12,13,14,15,16]) s[1:4] = 20 s=list(s) print(l) Select the correct output: **a) [11, 20, 20, 20, 15, 16]** b) [20, 20, 20, 20, 15, 16] c) [20, 12, 13, 20, 15, 16] d) [11, 20, 13, 20, 15, 16]

29	_____ is a person who deliberately sows discord on the Internet by starting quarrels or upsetting people, by posting inflammatory or off topic messages in an online community. a) Netizen b) Digital Citizen **c) Internet troll** d) d. None of the above
30	Consider the following graph .  Identify the code to plot it. **a. import matplotlib.pyplot as plt** **plt.plot ([2,7],[1,6])** **plt.show( )** b. import matplotlib.pyplot as plt plt.plot([1,6],[2,7]) plt.show( ) c. import matplotlib.pyplot as plt plt.plot([2,3],[5,1]) plt.show( ) d. import matplotlib.pyplot as plt plt.plot([1,3],[4,1]) plt.show( )
31	In the questions given below there are two statements marked as Assertion (A) and Reason (R) . Read the statements and choose the correct option. **a. Both (A) and (R) are True, and (R) is the correct explanation of (A).** b. Both (A) and (R) are True, but (R) is not the correct explanation of (A). c. (A) is true, but (R) is false. d. (A) is false, but (R) is true. **Assertion (A):** Pandas offer a single and convenient place to plot graphs i.e. matplotlib for visualization and data analysis through graphs. **Reason (R):** Matplot is a 2-D plotting library that helps in visualizing figures.

32	Which function can be used to export generated graph in matplotlib to png ? a) savefigure b) **savefig** c) save d) export
33	Mala is confused about the free operating system available in the market. Few of her friends suggested a few operating systems. Help her in choosing free operating system for her device: a. **Ubuntu** b. Windows c. Mozilla Firefox d. Blender
34	Choose the correct code for the following statements being correct or incorrect. Statement I: Intellectual Property is a category of property that includes intangible creations of the human intellect. Statement II: IPR does not include trade secrets and moral rights. a) Both the Statements I and II are correct. b) Both the Statements I and II are incorrect. **c) Statement I is correct ,but II is incorrect.** d) Statement II is correct ,but I is correct.
35	Which of the following code will generate the following output? Jan 31 Feb 28 Mar 31 dtype: int64 a. import pandas S1 = pd.Series(data = [31,28,31], index=["Jan","Feb","Mar"]) print(S1) b. import pandas as pd S1 = p1.series([31,28,31], index=["Jan","Feb","Mar"]) print(S1) c. import pandas as pd S1 = pd.Series([31,28,31], columns=["Jan","Feb","Mar"]) print(S1) **d. import pandas as pd** **S1 = pd.Series([31,28,31], index=["Jan","Feb","Mar"])** **print(S1)**
36	After using his email id, Anubhav forgot to sign off from his email account. Later, his servant saw his computer open and started using it. His servant's activity is an example of which of the following cybercrime? a) Hacking **b) Identity theft** c) Cyber bullying d) Plagiarism
37	We can add a new row to a DataFrame using the _____ method ? a) rloc[ ] **b) loc[ ]** c) iloc[ ] d) None of the above

38	Which of the following is the correct related to E-waste? a) E-waste is a popular, informal name for electronic products nearing the end of their "useful life. b) Computers, televisions, VCRs, stereos, copiers, and fax machines are common electronic products. **c) Both A and B** d) (iv) None of the above
39	Which of the following are ways of indexing to access Data elements in a DataFrame? a. Label based indexing b. Boolean Indexing **c. Both (a) & (b)** d. None of the above
40	What will be the output of the following code: import pandas as pd s1=pd.Series([4,5,7,8,9],index=['a','b','c','d','e']) s2=pd.Series([1,3,6,4,2],index=['a','p','c','d','e']) print(s1-s2) a) a 3.0 b 0 c 1.0 d 4.0 e 7.0 p 0 dtype: float64 **b)** **a 3.0** **b NaN** **c 1.0** **d 4.0** **e 7.0** **p NaN** **dtype: float64** c) a 3.0 c 1.0 d 4.0 e 7.0 dtype: float64 d) a 3.0 b – c 1.0 d 4.0 e 7.0 p – dtype: float64
41	The fraudulent practice of directing internet users to a bogus website that mimics

	the appearance of legitimate one in order to obtain personal information such as passwords, accounts numbers etc. This is known as _____ a) Eavesdropping b**) Pharming** c) Bullying d) Trolling
42	Difference between loc() and iloc(): a. Both are Label indexed based functions. b. Both are Integer position-based functions. c. **loc() is label based function and iloc( ) integer position based function.** d. loc() is integer position based function and iloc( ) index position based function.
43	What will the output of the following code: import pandas as pd s1=pd.Series([4,5,7,8,9],index=['a','b','c','d','e']) s2=pd.Series([1,3,6,4,2],index=['a','p','c','d','e']) print(s1==s2) a) a True b False c True d False e True dtype: bool b) a False b False c False d False e False dtype: bool c) a True b True c True d True e True dtype: bool **d)** **Error**
44	Sheena is a new learner for the python pandas, and she is aware of some concepts of python. She has created a dataframe , Help her by identifying the correct output : import pandas as pd d = {'one' : pd.series([1., 2., 3.], index = ['a', 'b', 'c']), 'two' : pd.series([1., 2., 3., 4.], index = ['a', 'b', 'c', 'd'])} df = pd.Dataframe(d) print(df) **(a)** **one two** **a 1.0 1.0** **b 2.0 2.0** **c 3.0 3.0** **d NaN 4.0**

(b)

```
   one  two
d  NaN  4.0
b  2.0  2.0
a  1.0  1.0
```

(c)

```
   two three
d  4.0   NaN
a  1.0   NaN
```

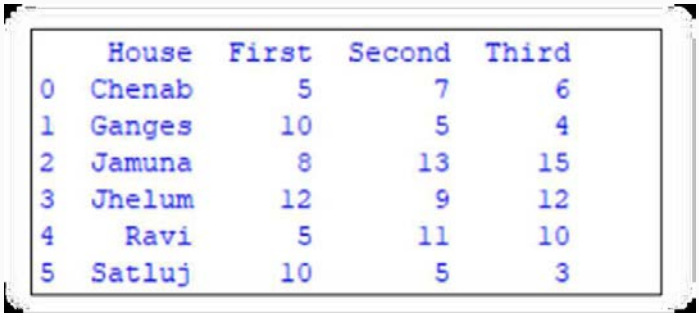
(d)

Error

45 Protecting computers and the information it contain against unwanted access, malicious code, destruction is called

a) computer monitoring
b) electric policy
c)audit control
d)**computer security**

46 Assuming the given structure, which command will give us the given output:



	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

Which command will give the output 24:

a) print(df.size)
b) print(df.shape)
c) print(df.index)
d) d. print(df.axes)

47 Consider the following DataFrame df and answer the question ?

	Fruits	Pulses	Rice	Wheat
Andhra p.	7830	931.0	7452.4	NaN
Gujarat	11950	818.0	1930.0	2737.0
Kerala	113.1	1.7	2604.8	NaN
Punjab	7152	33.	11586.2	16440.5
Tripura	44.1	23.2	814.6	0.5
Uttar p.	140169.2	2184.4	13754.0	30056.0

The output:

11950	818.0
113.1	1.7

will be produced by:

a) a.df.show[1:3,0:2]
b) b.df.at[1:3,0:2]

	c) c.df.loc[1:3,0:2] **d) df.iloc[1:3,0:2]**
48	Consider the following data frame – DF: SUBCODE Name 0 48 PHYSICAL EDUCATION 1 83 COMPUTER SCIENCE 2 65 INFORMATICS PRACTICES 3 29 GEOGRAPHY Which of the following Python statement can be used to rename the column Name as SubjectName of DF data frame. a) DF.Rename({'Name' : 'SubjectName'}, axis = 1, inplace='True') b) DF.rename({'Name' : 'SubjectName'}, axis = 0, inplace='True') c) DF.Rename({'Name' : 'SubjectName'}, axis = 0, inplace='True') **d) DF.rename({'Name' : 'SubjectName'}, axis = 1, inplace='True')**
49	Assertion (A): A Data frame is a two-dimensional labelled data structure like a table of MySQL. Reason (R): It contains rows and columns, and therefore has both a row and column index. Choose the correct option: a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A) **b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A)** c) Assertion (A) is true, but Reason (R) is false. d) Assertion (A) is false, but Reason (R) is true
	Section - C **Section C, consists of 6 Question (50 to 55). Attempt any 5 questions.** **Case Study**
	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:
50	Display the house names where the number of Second Prizes are in the range of 12 to 20. a) df['Name'][(df['Second']>=12) and (df['Second']<=20)] b) df[Name][(df['Second']>=12) & (df['Second']<=20)] **c) df['Name'][(df['Second']>=12) & (df['Second']<=20)]**

	d) d. df[(df['Second']>=12) & (df['Second']<=20)]
51	Display all the records in the reverse order. a) print(df[::1]) **b) print(df.iloc[::-1])** c) print(df[-1:]+df[:-1]) d) print(df.reverse())
52	Display the bottom 3 records a) df.last(3) b) df.bottom(3) c) df.next(3) **d) d. df.tail(3)**
53	Choose the correct output for the given statements x=df.columns[:1] print(x) a. 0 **b. House** c. First d. Error
54	She wants to add a new column with name "Total" in above data frame choose the right command to do so: a) df['Total']= ["First"] + ["Second"] + ["Third"] **b) df['Total']=df["First"] + df["Second"] + df["Third"]** c) df['Total']= "First" + "Second" + "Third" d) d. df['Sum']=[89,78,76]
55	She wants to delete the row of Ravi house : a) df.drop('Ravi', axis=1) **b) df.drop('Ravi', axis=0)** c) df.drop('Ravi', axis=-1) d) d. df.drop('Ravi', axis==0)

Please check total printed pages before start : 16

Roll No. : | | | |

I TERM PRE- BOARD EXAMINATION 2021-22

SUBJECT :– INFORMATICS PRACTICES

CLASS : XII

Time : 90 Min **Marks : 35**

General Instructions:

- The paper is divided into 3 Sections- A, B and C.
- Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
- Section B, consists of Question number 26 to 49 and student need to attempt 20 questions.
- Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
- All questions carry equal marks.

SECTION- A

Section A consist of 25 questions , Attempt any 20 Questions only

1. Which of the following can be data in Pandas?

(a) An ndarray (b) Scalar value

(c) Python Dictionary (d) All of the Above

2 What is a correct syntax to create a Pandas Data Frame?

(a) pd.dataframe(data) (b) pd.df(data)

(c) pd.DataFrame(data) (d) None of the Above

3 Python Pandas was developed in

(a) 2008 (b) 2009

(c) 2010 (d) 2012

4 Which of the following are feature of Python Pandas?

(a) Visualise (b) Handling of data

(c) Grouping (d) All of these

5 Pandas or Python Pandas is Python library for data analysis. Pandas has derived its name from .....

(a) Panel data analysis (b) Panel Series

(c) Panel Dataframe (d) NONE OF THE ABOVE

6 Which of the following attribute use to convert all rows of a dataframe to columns and all columns to rows.

(a) Transpose (b) T

(c) inverse (d) dim

7 To draw a line graph which function is used

(a) Line() (b) Plot()

(c) Hist() (d) Bar()

8 barh() function of pyplot is used to draw a:

(a) Bar graph (b) line graph

(c) horizontal Bar graph (d) Vertical Bar graph

9 The part of chart which identifies different sets of data plotted on plot by using different colours is called

(a) Legends (b) Title

(c) Axis (d) Figure

10 Which of the following correct statement to import pyplot module?

(a) import matplotlib.pyplot (b) import MatPlotLib. PyPlot

(c) import PyPlot aspl (d) import pyplot.plot

11 _____ means unauthorized use of other's trade mark on products and services.

a. Copy right Infringement b. Trademark Infringement

c. Plagiarism d. Patent

12 Intellectual Property is legally protected through

a. copyright b. patent

c. registered trademark d. All of the above

13 GNU stands for_____

a. General Public UNIX

b. GNU General Private License

c. GNU General Public License

d. GNU NOT UNIX

14. Which argument is used to change the linestyle in a line chart.

a. ls b. linestyle

c. both a and b d. none of these

15 Which of the following is example of Social media?

a. Facebook b. Twitter

c. Instagram d. All of the above

16 EULA stands for_

a. End User Leave Agreement b. End User License Aim

c. End User License Agreement d. None of the above

17 The axis 0 identifies a DataFrame's _____

a. Rows
b. Columns
c. Values
d. Datatype

18 Which of the following is cyber crime?

a. Hacking
b. Phishing
c. Spamming
d. All of the above

19 To extract row/column from a dataframe _____function may be used.

a. row()
b. column()
c. loc()
d. all of these

20 Which of the following constitute e-waste?

a. discarded computers
b. damaged printers
c. useless CDs
d. All of the above

21 _____is the attempt to acquire sensitive information such as usernames, passwords and credit card details by masquerading as a trustworthy entity in an electronic communication.

a. Pharming
b. Phishing
c. Attack
d. Malware

22 What is the name of the IT law that India is having in the Indian legislature?

a. India's Technology ITAct 2000
b. India's Digital information technology DIT Act, 2000
c. India's Information Technology IT Act, 2000
d. The technology act,2008.

23 Identify the correct statement :

a. Data Frame can change their size
b. Series act in a way similar to that of an array.

c. Both (a) and (b)

d. None of the above

24 To display first three elements of a Series object S, you may write

a. S[:3] b. S[3]

c. S[3rd] d. all of these

25 To get the number of elements in a Series object, attribute may be used.

a. index b. size

c. item size d. ndim

SECTION B

Section B consists of 24 Questions (26 to 49). Attempt any 20 questions

26. (A) Assertion: Pandas series can not be used to create DataFrame

(R) Reason: Every column of DataFrame is a pandas series.

a. Both A and R are correct but R is not correct explanation of A

b. Both A and R are correct and R is correct explanation of A

c. R is correct but A is incorrect

d. A is correct but R is Incorrect

27 Write the output of following code

```
import pandas as pd
S1=pd.Series([1,2,3,4])
S2=pd.Series([7,8])
S3=S1+S2
print(S3.size)
```

a. 6 b. 4

c. 5 d. 2

28 Consider the following data frame df. What will be the output of the command df.shape_____

	Name	Eng	IP	Maths
0	P	67	99	98
1	R	76	99	99
2	A	75	98	97
3	J	88	97	98
4	B	92	98	90

a. (5,4) b. (4,5)

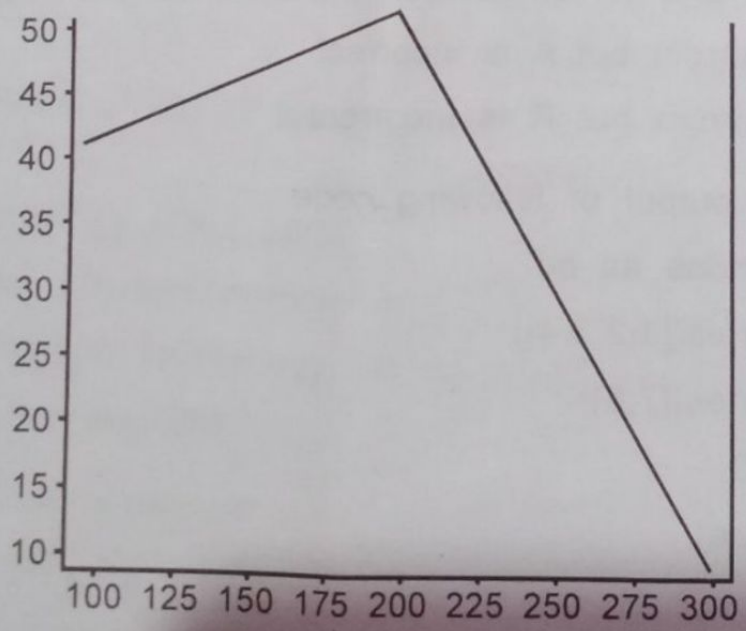
c. 5,4 d. 20

29. Using someone else's twitter handle to post something will be termed as

a. Fraud b. Identity Theft

c. Online stealing d. Violation

30 Observe the following figure. Identify the coding for obtaining this as output.



a. importmatplotlib.pyplot as
pltplt.plot([1,2],[4,5])
plt.show()

b. import matplotlib.pyplot as
pltplt.plot([1,2,3],[4,5,1])
plt.show()

c. importmatplotlib.pyplot as
pltplt.plot([2,3],[5,1])
plt.show()

d. import matplotlib.pyplot as
pltplt.plot([1,3],[4,1])
plt.show()

31 Assertion (A): A histogram is a graph showing frequency distributions.
Reason (R): It is similar to Bar graph

a. Both A and R are true and R is the correct explanation of A.

b. Both A and R are true but R is NOT the correct explanation of A.

c. A is true but R is false.

d. A is false but R is true.

32. Consider a dataframe sales

SALES

	Q1	Q2
2015	19.10	13.70
2016	19.90	14.20
2017	21.10	15.40
2018	21.80	15.90
2019	23.0	17.20

Which of the following statement will give the details of Q1 column only in respect of all years:

a. dfGER.Q1
b. dfGER["Q1"]
c. both i and ii
d. None of these

33 Which of the following is a/an open-source software?

a. Microsoft Windows
b. Adobe Photoshop
c. Mysql
d. Ms Powerpoint

34 Suhana left the computer laboratory but forgot to sign off from her email account. Later, her classmate Revaan started using the same computer. He is now logged in as Suhana. He sends inflammatory email messages to few of his classmates using Suhana's email account. Revaan's activity is an example of which of the following cyber crime?

a. Hacking
b. Identity theft
c. Cyber bullying
d. Plagiarism

35 Consider a Series S=pd.Series ([1,2,3,4,5]).

What will be the output of S[-3:]

(a) 2 3
3 4
4 5

(b) 0 1
1 2
2 3

(c) Error

(d) 3 4
4 5

36 Bhanu found a crumpled paper under his desk. He picked it up and opened it. It contained some text which was struck off thrice. But he could still figure out easily that the struck off text was the email

ID and password of Garvit, his classmate. What is ethically correct for Bhanu to do?

a. Inform Garvit so that he may change his password.

b. Give the password of Garvit's email ID to all other class mates.

c. Use Garvit's password to access his account

d. Keep the password with him to use his account in future.

37 Which method is used to access vertical subset of a data frame.?

a. iterrows() b. iteritems()

c. itertuples() d. itercols()

38 What are open-source softwares:

a. In which source code is available

b. Which are free

c. Both i and ii.

d. Softwares available on sourceforge.net

39 A Data Frame is having True and False as its Boolean indexes. The command that can be used to access all the rows corresponding to True Boolean index

a. print (df.loc(True) b. print (df.loc[: ,True])

c. print(df.loc[True]) d. print(df.loc([True,:])

40 Which argument is mandatory argument in Data Frame function

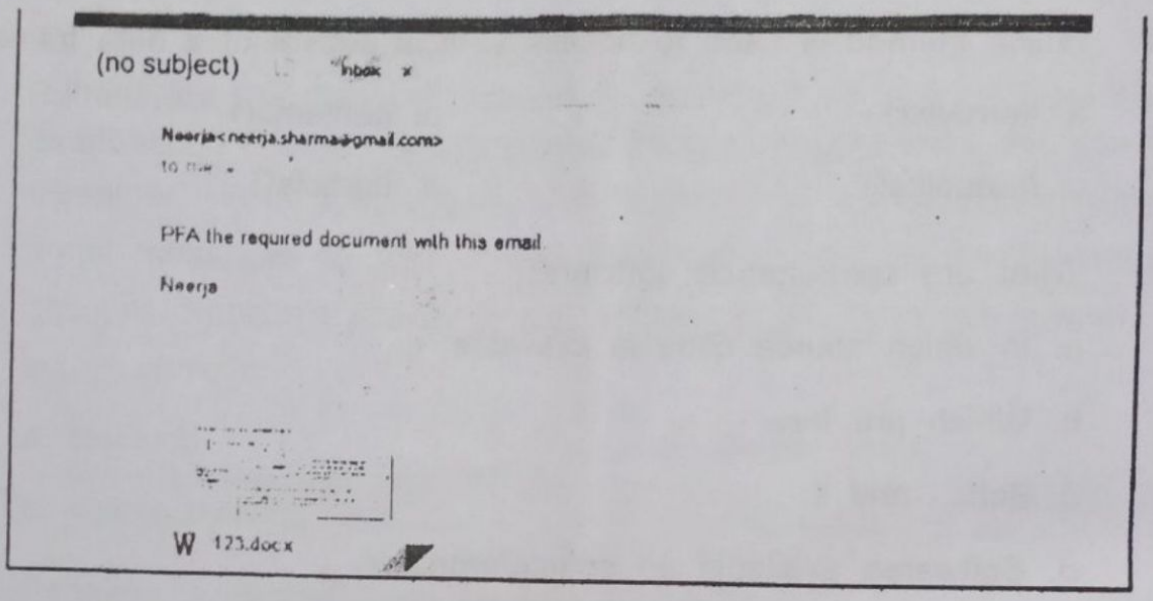
a. First argument specifying the data structure from which Dataframe will receive data.

b. Arguments for specifying row and column labels

c. No argument is mandatory

d. i and ii

41 Neerja is a student of Class XI. She has opted for Computer Science. Neerja prepared the project assigned to her. She mailed it to her teacher. The snapshot of that email is shown below.



Find out which of the following email etiquettes are missing in it.

a. Subject of the mail
b. Formal greeting
c. Self-explanatory terms
d. Identity of the sender.

42 Consider a Data Frame containing three rows R1, R2 and R3, which of the below given commands to delete the rows R1 and R2 is incorrect?

a. df=df.drop(['R1','R2'],1)

b. df=df.drop(['R1','R2'])

c. df=df.drop(['R1','R2'],0)

d. df=df.drop(['R1','R2'],axis='index')

43 Write the output of given Command.

```
import pandas as pd
s=pd.Series([2,3,4,5,6,7],index=["A","B","C","D","E","F"])
print(s[s%2==0])
```

(a)
```
A 2
C 4
E 6
dtype: int64
```

(b)
```
A 1
C 3
E 5
dtype: int64
```

(c)
```
A 1
C 2
E 3
dtype: int64
```

(d)
```
A 7
C 5
E 6
dtype: int64
```

44 Consider following code:

```
import pandas as pd
dict1=[{'eco':87,'bst':88},{'eco':90,'bst':98}]
df3 =pd.data frame (dict1, index=['student1', 'student2'])
```

Choose the correct command to add the total marks of 'eco' and 'bst' in a new column name 'Total'.

a. df3['Total'] = df3.eco + df3.bst

b. df3=['Total'] = eco + bst

c. df3= ('total') =(eco +bst)

d. None of these

45 MS office, windows 10 and Unix operating system comes under _____category.

a. FOSS

b. Shareware

c. Freeware

d. Proprietary

46 Consider the dataframe DF

	A	B
0	1	2
1	2	3
2	3	4

Which command will be used to change Column Name from A to One and B to Two

a. DF.rename(["A":"One","B":"Two"], axis=1)

b. DF.rename(columns={"A":"One","B":"Two"})

c. DF.rename({"A":"One","B":"Two"}, axis=1)

d. both b and c

47 Khushi 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 "Sports Day" 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

Help her by writing python statement to display the house names where the number of Second Prizes are in the range of 12to 20.

a. df['House'][(df['Second']>=12)and(df['Second']<=20)]

b. df[House][(df['Second']>=12)&(df['Second']<=20)]

c. df['House'][(df['Second']>=12)&(df['Second']<=20)]

d. df[(df['Second']>=12)&(df['Second']<=20)]

48. What will be output for the following code?

```
import pandas as pd1
data1 = [{'x':1, 'y': 2}, {'x': 4,'y': 5, 'z': 5}]
df1=pd1. Data Frame (data1)
print (df1)
```

(a)

	X	Y	Z
0	1	2	NaN
1	5	4	5.0

(b)

	X	Y	Z
	01	2	NaN
1	4	5	5.0

(c)

	X	Y	Z
0	2	2	NaN
1	4	5	5.0

(d) None

49. Consider the following code :

```
for (x,y) in df.iterrows():
print(x)
print(y)
```

What is the data type of y?

a. Series
b. Dataframe
c. Tuple
d. List

SECTION-C

Consists of 6 Question (50 to 55). Attempt any 5 questions

50 Suppose a dataframe Df1 contains information about student having four columns as given below. Answer the questions (50-53) based on Data frame Df1

Roll No	Name	Class	Section
1	Atul	II	A
2	Nilesh	III	B
3	Diya	IV	A

Write the code for adding one more column as fee

a. Df1['fee']=([100,200,300])
b. Df1['fee']=add([100,200,300])
c. Df1add['fee']=([100,200,300])
d. Df1['fee']=([100,200,300])

51 Write the code to delete column fee of data frame df1.

a. delete Df1['fee']
b. del Df1['fee']
c. del(Df1['fee'])
d. (d) delete(Df1['fee'])

52 Write the code to append Df2 with Df1

a. Df2=Df2. append data (Df1)

b. Df2=Df2. append column (Df1)

c. Df2=Df2. append row (Df1)

d. Df2=Df2. append (Df1)

53. Write the code to Display data of 1st to3rd rows

a. Df1.iloc[1:4]

b. Df1.loc[1:4]

c. Df1.loci[1:4]

d. Df1.iloci[1:4]

54 Consider the following Data Framed f and choose correct option to get the output shown below:

	Fruits	Pulses	Rice	Wheat
Andhrap.	7830	931.0	7452.4	NaN
Gujarat	11950	818.0	1930.0	2737.0
Kerala	113.1	1.7	2604.8	NaN
Punjab	7152	33.	11586.2	16440.5
Tripura	44.1	23.2	814.6	0.5
Uttarp.	140169.2	2184.4	13754.0	30056.0

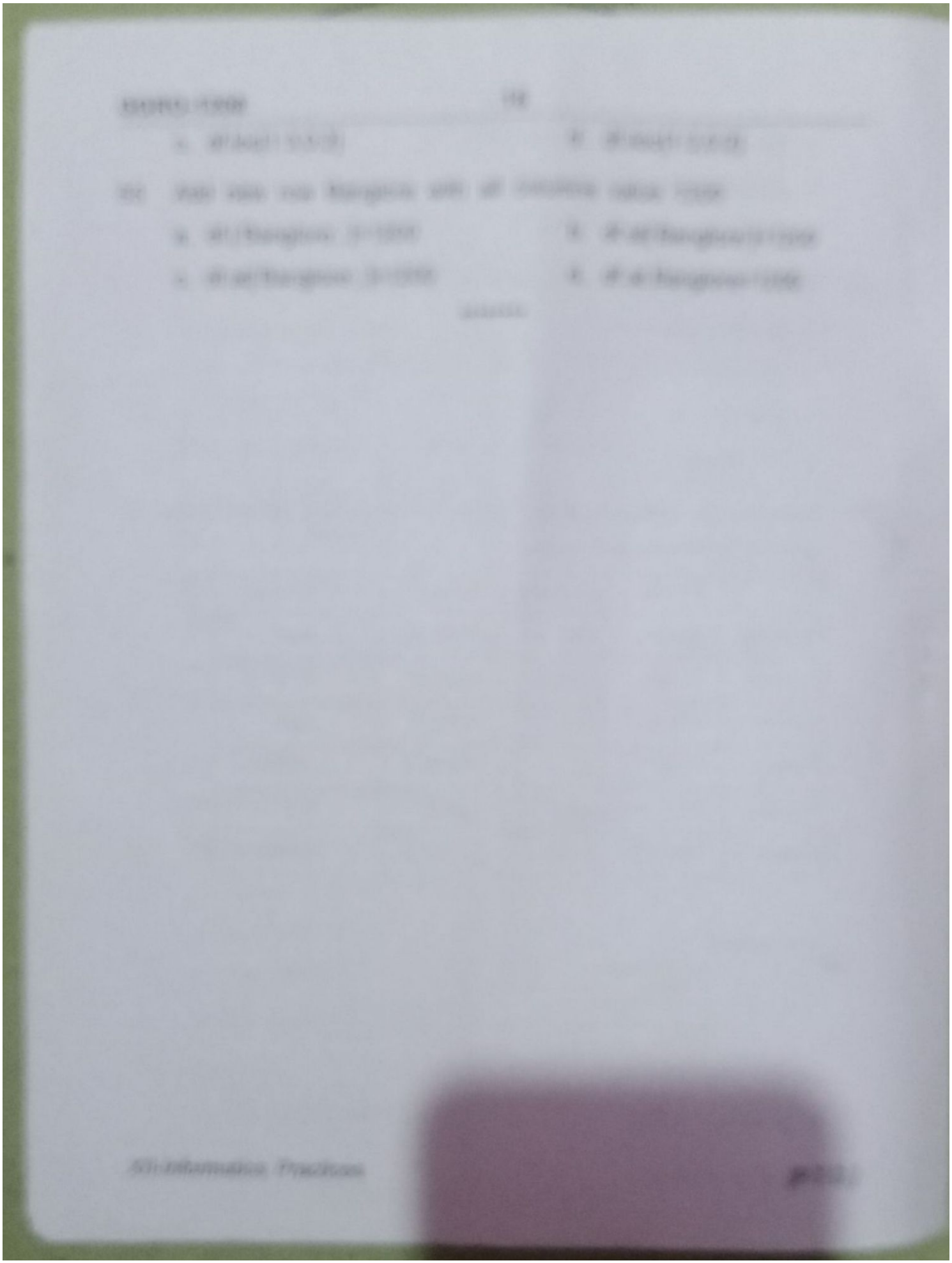
The output:

11950	818.0
113.1	1.7

will be produced by:

a. df.show[1:3,0:2]

b. df.at[1:3,0:2]



KENDRIYA VIDYALAYA SANGATHAN, AGRA REGION

Pre- Board Examination 2021-22 (Term-I)

Subject: Informatics Practices (Code-065)

Class – XII **SET - A**

Time: 90 Mins. Max. Marks.: 35

Marking Scheme

	SECTION- A Section A consist of 25 questions , Attempt any 20 Questions only	
Q.1.	d. All of the Above	
Q.2	(c).pd.DataFrame(data)	
Q.3	(a) 2008	
Q.4	(d) all of these	
Q.5	(a) Pane data anaysis	
Q.6	b. T	
Q.7	(b) Plot()	
Q.8	(c) horizontal Bar graph	
Q.9	(a)Legends	
Q.10	(a)importmatplotlib.pyplot	
Q.11	(b) TrademarkInfringement	
Q.12	(d) Allof theabove	
Q.13	(d)GNUNOT UNIX	
Q.14.	(c) both a and b	
Q.15	(d) Allof theabove	
Q.16	(c) EndUserLicense Agreement	
Q.17	(a) Rows	
Q.18	(d) Allof theabove	
Q.19	(c) loc()	
Q.20	(d)Allof theabove	
Q.21	(b) Phishing	
Q.22	(c) India's InformationTechnologyITAct,2000	
Q.23	(c)Both (a) and (b)	
Q.24	(a)S[:3]	
Q.25	(b) size	
	Section B Section B consists of 24 Questions (26 to 49). Attempt any 20 questions	
Q.26.	(c) R is correct but A is incorrect	
Q.27	(b) 4	
Q.28	(a)(5,4)	

Q.29	(b) Identity Theft	
Q.30	(b) import matplotlib.pyplot as pltplt.plot([1,2,3],[4,5,1]) plt.show()	
Q.31	b. Both A and R are true but R is NOT the correct explanation of A.	
Q.32	c. both i and ii	
Q.33	(c) Mysql	
Q.34	(b) Identity theft	
Q.35	(a)2 3 3 4 4 5	
Q.36	(a)InformGarvitso thathemaychangehispassword.	
Q.37	(b)Df.iteritems()	
Q.38	a. In which source code is available	
Q.39	(c)print(df.loc[True]	
Q.40	c. No argument is mandatory	
Q.41	(a)Subjectof themail.	
Q.42	(a)df=df.drop(['R1','R2'],1)	
Q.43	(a) A 2 C 4 E 6 dtype: int64	
Q.44	(a) df3['Total'] = df3.eco + df3.bst	
Q.45	(d)Proprietary	
Q.46	d) both b and c	
Q.47	c.df['House'][(df['Second']>=12)&(df['Second']<=20)]	
Q.48	(b) X Y Z 0 1 2 NaN 1 4 5 5.0	
Q.49	(a) Series	
	Case Study Questions (50-55)	
Q.50	(a) Df1['fee']=([100,200,300])	
Q.51	(b)del Df1['fee']	
Q.52	(d)Df2=Df2.append(Df1)	
Q.53	(a)Df1.iloc[1:4]	
Q.54	(d)df.iloc[1:3,0:2]	
Q.55	(c) df.at['banglore',:]=1200	

Please check total printed pages before start : 16

Roll No. : | | | |

PT-II EXAM (2021-2022)

SUBJECT : INFORMATICS PRACTICES

CLASS : XII

Time : 90 minutes Maximum Marks : 40

General Instructions:

- The paper is divided into 3 Sections- A, B and C.
- Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
- Section B, consists of Question number 26 to 49 and student need to attempt 20 questions.
- Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
- All questions carry equal marks.

SECTION – A

Section-A consist of 25 questions, attempt any 20 questions

1. _____ is an important library used for analyzing data.
   a. Math b. Random
   c. Pandas d. None of the above
2. Functional expression of the idea/invention will be protected by__
   a. copyright b. patent
   c. registered trademark d. None of the above
3. 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

4. Data trail that you unintentionally leave online _____

a. Active digital footprint b. Passive digital footprint

c. Web history d. Digital history

5. Write the output of the following :

```
>>> S1=pd.Series([10, 20, 30] ,index = range(1, 6, 2))
>>> print(S1)
```

a.

```
10 1
20 3
30 5
dtype: int64
```

b.

```
1 10
3 20
5 30
dtype: int64
```

c. Error

d. None of the above

6. Which of the following is not the parameter of pyplot's plot() method?

a. Marker
b. Lineheight
c. Linestyle
d. Color

7. _____ is an activity where fake websites or emails that look original or authentic are presented to the user.

a. Phishing
b. Hacking
c. Spamming
d. Identity theft

8. Which of the following statement is wrong?

a. We can create Series from Dictionary in Python.
b. Keys of dictionary become index of the series.
c. Order of indexes created from Keys may not be in the same order as typed in dictionary.
d. All are correct

9. Write the output of the following:

```
import pandas as pd
S1 = pd.Series(data = range(41, 12, -6), index = [x for x in "aeiou" ])
print(S1)
```

a.

```
a 41
e 35
i 29
o 23
u 17
dtype: int64
```

b.

a 41
e 35
i 29
o 23
dtype: int64

c. Error

d. None of the above

10. Which of the following is used to give user defined column index in DataFrame?

a. index
b. column
c. columns
d. colindex

11. How many values will be modified by last statement of given code ?

```
import pandas as pd
S1 = pd.Series(['NewDelhi', 'Washington DC', 'London', 'Paris'],
index=['A', 'B', 'C', 'D'])
S1['A' : 'C'] = 'ND'
```

a. 1
b. 2
c. 3
d. 4

12. The interface of Matplotlib used for data visualization is

a. Seaborn
b. Anaconda
c. matlab
d. pyplot

13. What will be the shape of given dataframe?

2	5	3	8
4	6	2	5

a. (2,4)
b. (4,2)
c. (2,)
d. (8,)

14. Which of the following statement shows first five values of Series 'S1'?

a. S1.head( ) b. S1.head(5)

c. Both of the above d. None of the above

15. When we create a series from dictionary then the keys of dictionary become _____

a. Index of the series b. Value of the series

c. Caption of the series d. None of the series

16. Given a dataframe 'df' a shown below:

	rollno	name	marks
0	1	Rohan	75
1	2	Robin	65
2	5	Ramesh	83
3	6	Rohit	NaN

What will be the output of the following code?

```
df.count()
```

a. rollno 4
name 4
marks 3

b. 4

c. rollno 4
name 4
marks 3

d. 12

17. Swati gas created a dataframe df which she want to manage according to given question

	EmpNo	Name	Did
0	E101	Ram	D01

1	E102	Sachin	D02
2	E103	Shadab	D03
3	E104	Manoj	D02

She wants to arrange and display data based on Name in descending order. What code She should write?

a. df.sort_values(by = 'Name', ascending = False)

b. df.sort_values(by = 'Name', asc = False)

c. df.sort_values(ascending = False)

d. df.sort_values('Name', asc = False)

18. Which method is used to delete row or column in DataFrame?

a. delete( ) b. del( )

c. drop( ) d. None of the above

19. We can use the _____ method to merge two DataFrames

a. merge( ) b. join( )

c. append( ) d. drop( )

20. The following code create a dataframe named 'D1' with _____ columns.

```
import pandas as pd
LoD = [{'a':10, 'b':20}, {'a':5, 'b':10, 'c':20}]
D1 = pd.DataFrame(LoD)
```

a. 1 b. 2

c. 3 d. 4

21. DF1.loc( ) method is used to _____ # DF1 is a DataFrame

a. Add new row in a DataFrame 'DF1'

b. To change the data values of a row to a particular value

c. Both of the above

d. None of the above

22. The process of re-selling old electronic goods at lower prices is called _____

a. refurbishing
b. recycle
c. reuse
d. All of the above

23. Which function would you use to set the limits for x-axis of the plot?

a. limits( )
b. xlimits( )
c. xlim()
d. lim( )

24. Which of the following is incorrect regarding Data Visualization?

a. Data visualization can be done using Matplotlib library in python.
b. Visualizing large and complex data does not produce effective result.
c. data visualization is immensely useful in data analysis.
d. Decision makers use data visualization to understand business problems easily and build strategies.

25. To display histogram with well define edge we can write

a. plt.plot(type= 'hist', edge = 'red')
b. plt.plot(type= 'hist', edgecolor = 'red')
c. plt.plot(type= 'hist', line = 'red')
d. plt.plot(type= 'hist', linecolor = 'red')

SECTION – B

Section-B, consist of 24 questions (26-49). Attempt any 20 questions.

26. In India _____ law provides guidelines to the user on the processing, storage and transmission of sensitive information.

a. Information Technology Act, 2000
b. Indian Technology Act, 2000
c. Inform Technology Act, 2000

d. Information Techware Act, 2000

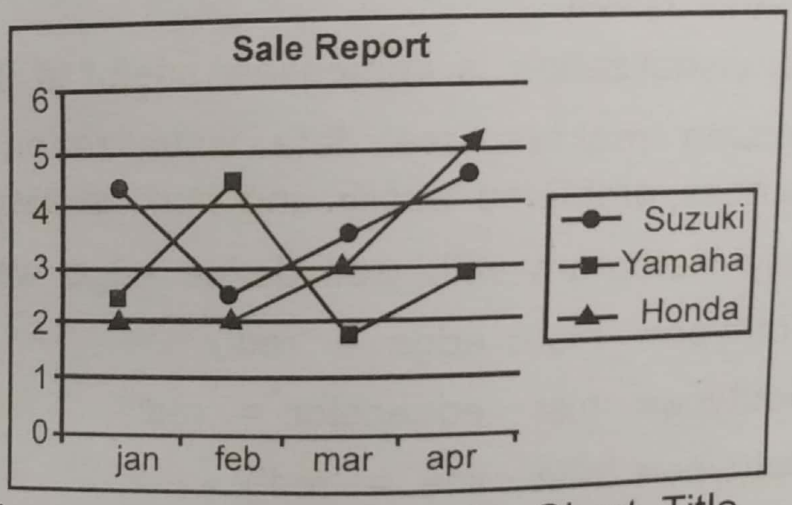
27. Pratibha develop software and she want to protect her code. She can protect by _____

a. copyright
b. patent
c. registered trademark
d. None of the above

28. EULA stands for _____

a. End User Leave Agreement
b. End User License Aim
c. End User License Agreement
d. None of the above

29. In the given chart, box containing values Suzuki, Yamaha and Honda



a. Data series
b. Chart Title
c. Markers
d. Legend

30. Which argument of bar() lets you set the thickness of bar ?

a. thick
b. thickness
c. width
d. barwidth

Q31. Which argument is used to change the width of line in line graph?

a. markersize
b. linestyle
c. linewidth
d. width

32. Rohan and Sachin are friends. They are making project by using Rohan laptop at his home. Rohan went to take some drink but forgot to sign off from his email account. Sachin sends inflammatory email messages to few of his classmates using Rohan's email account. Sachin's activity is an example of which of the following cybercrime?

a. Plagiarism
b. Hacking
c. Identity theft
d. Cyber bullying

33. Ram downloaded software from internet without paying anything and he is also able to access and modify its source code. Which Type of software is this?

a. Shareware
b. Freeware
c. FOSS
d. Malware

34. Being a responsible netizen, Hardik should _____

a. Choose password wisely
b. Think before upload anything online.
c. Change our password frequently.
d. All of the above

35. Which of the following are feasible methods of e-waste management?

a. Reduce
b. Reuse
c. Recycle
d. All of the above

Questions 36-46 consist of two Statements. Statement A is called Assertion (A) and Statement B is called Reason (R). Read the given Statements carefully and answer the questions by choosing one of the options given below:

36. **Statement A:** While creating series by specifying data as scalar value, index must be provided.

Statement B: The Scalar value repeated to match the length of index

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

37. **Statement A:** If Series is created by specifying integer and NaN value as:

S= pd.Series([10,NaN,15])

Will produce S as:

0 10.0

1 NaN

2 15.0

Statement B: pandas automatically convert Integer to floating type as NaN is not supported by integer type.

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

Q38. **Statement A:** When a comparison operator is directly applied on Series object, It return filtered result containing the value that return True.

Statement B: Applying comparison operator on series work on Victories way

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

39.

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

39. **Statement A:** For given series S1 and S2

0	10
1	20
2	30

S1

0	5
1	10
3	15

S2

Print (S1+S2) will produce

0	15
1	30
2	NaN
3	NaN

S1+S2

Statement B: Arithmetic operation is performed on series object regardless of their type and indices.

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

40. **Statement A :** Slicing can be also used to modify the series elements.

Statement B: Series elements can be modified with list of values respectively.

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

41. **Statement A**: CSV file are available to open in any spreadsheet program, including Google Sheet, Open Office and Microsoft Excel.

Statement B: Using a spreadsheet program can serve a user needs better since it has cells where data is stored in row and column

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

42. **Statement A**: Dataframe is a 2-dimensional labeled array, It column types can be heterogeneous i.e. of varying types.
Statement B: We need a Dataframe with a Boolean index to use the Boolean indexing

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

43. **Statement A: executing following code**

```
df= pd.Dataframe([40,50], index=[True,False])
print(df['True'])
```

will produce key error

Statement B: dataframe does not support Boolean Indexing

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

44. **Statement A:** Code written below to rename index of dataframe will be executed successfully but will not make change in index of original dataframe.

```
Df.rename(index={'col1':'c1','col2':'c2'})
```

Statement B: To make change in index /column name in original dataframe, we need to specify replace = True in rename()

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

45. Sarthak is developing a new website. He download the some content from internet and published in own website without giving reference / credit to the source website. And source website owner Era came to know that Sarthak has stolen content from her website and publish on his website without informing her.

Statement A: Era can fill FIR against Sarthak

Statement B: Plagiarism is offence under IT act

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

46 **Statement A:** Sam harass to Sophia via phone calls, text messages. He use abusing language over phone and send irrelevant message to Sophia even after refused by her. This is an example of Cyber bulling.

Statement B: Trolling is a cybercrime and is closely related to cyber bulling. In fact, it is form of cyber bulling.

(a) Both the statements are true and Statement B is the correct explanation of Statement A

(b) Both the statements are true and Statement B is not the correct explanation of Statement A

(c) Statement A is true, Statement B is false

(d) Statement A is false, Statement B is true

47. Read the statement given below an identify the right option

Statement A: Free software means the software is freely accessible and can be freely used, changed, improved, copied and distributed by all who wish to do so.

Statement B: Open Source Software, on the other hand, can be freely used (in term of making modification, constructing business models around the software and so on) but it does not have to be free of charge.

(a) Statement A is correct, but Statement B is incorrect.

(b) Statement B is correct, but Statement A is incorrect.

(c) Both Statement A and B are correct.

(d) Both Statement A and B are incorrect.

48. Read the statement given below an identify the right option

Statement A: Once digital data has been shared online, there is no guarantee you will ever be able to remove it from the Internet

Statement B: Digital data trail we leave behind while performing any online activity is stored as browsing history in our local system only.

(a) Statement A is correct, but Statement B is incorrect.

(b) Statement B is correct, but Statement A is incorrect.

(c) Both Statement A and B are correct.

(d) Both Statement A and B are incorrect.

49. Read the statement given below an identify the right option with respect to Hacking

Statement A: is an attempt to capture a user' login password and credit card details by including a URL in spam e-mail that link to a fake website controlled by the attacker as a trustworthy entry.

Statement B: Using password cracking algorithm to gain access to the system.

(a) Statement A is correct, but Statement B is incorrect.

(b) Statement B is correct, but Statement A is incorrect.

(c) Both Statement A and B are correct.

(d) Both Statement A and B are incorrect.

SECTION – C

SECTION-C, CONSIST OF 6 QUESTIONS (50-55). ATTEMPT ANY 5 QUESTIONS.

(CASE STUDY)

Consider the DataFrame 'DF' given below and answer the questions from Q50 to Q55. Following DataFrame 'DF' containing Average run scored by five Players in three cricket format.

	Rohit	Virat	Shikhar	Rahul	Rishab
ODI	75	84	65	60	90
T20	85	83	75	80	75
Test	60	65	55	70	60

50. Display the Average of Sikhar in T20 Subject.

a. print(DF.loc['T20', 'Shikhar']) b. print(DF.Loc['T20', 'Shikhar'])
c. print(DF.loc['T20', 'Shikhar')) d. None of the above

51. Display the Average run of Virat in all format
a. print(DF.loc['ODI' : 'Test', 'Virat']) b. print(DF['Virat'])
c. Both of the above d. None of the above

52. Display Average run of all Player in T20 and ODI.
a. print(DF.loc['T20' : 'ODI'])
b. print(DF.loc['ODI' : 'T20'])
c. Both of the above
d. None of the above

53. Write a statement to check that in which format Rohit Average score is more than 80.
a. DF.loc[: , 'Rohit'] >= 80
b. DF.loc[:, 'Rohit'] < 80
c. DF.loc[: , 'Rohit'] > 80
d. None of the above

54. Write a statement to remove column labelled as 'Rahul'
a. print(DF.drop('Rahul', axis = 0))
b. print(DF.drop('Rahul', axis = 1))
c. Both of the above
d. None of the above

55. Write a statement to increase average of 'Rishab' in 'Test' format by 5.
a. DF.loc['Test', 'Rishab']=DF.loc['Test', 'Rishab']+10
b. DF.loc['Rishab', 'Test']=DF.loc['Test', 'Rishab']+10
c. DF.loc['Rishab', 'Test']=DF.loc['Rishab', 'Test']+10
d. None of the above

KENDRIYA VIDYALAYA SANGATHAN, DELHI REGION

PT- II Marking Scheme (2021-22)

Subject: Informatics Practices (Code-065)

Class – XII

Note:

- **All questions carry equal marks.**
- **No Negative Marking**
- **Marks will be awarded to maximum 45 questions.**

Section – A

(Marks will be awarded to maximum 20 questions.)

Q1. Answer: c. Pandas

Q2. Answer: b. patent

Q3. Answer: a.
```
a 14
b 14
c 14
dtype: int64
```

Q4. Answer: b. Passive digital footprint

Q5. Answer: b.
```
1 10
3 20
5 30
dtype: int64
```

Q6. Answer: b. Lineheight

Q7. Answer. a. Phishing

Q8. Answer: d. All are correct

Q9. Answer: a.
```
a  41
e  35
i  29
o  23
u  17
dtype: int64
```

Q10. Answer: c. columns

Q11. Answer: c. 3

Q12. Answer: d. pyplot

Q13. Answer: a. (2,4)

Q14. Answer: c. Both of the above

Q15. Answer: a. Index of the series

Q16. Answer: a. **rollno 4**
name 4
marks 3

Q17. Answer: a. df.sort_values(by = 'name', ascending = False)

Q18. Answer: c. drop( )

Q19. Answer: c. append( )

Q20. Answer: c. 3

Q21. Answer: c. Both of the above

Q22. Answer: a. refurbishing

Q23. Answer: c. xlim()

Q24. Answer: b. Visualizing large and complex data does not produce effective result.

Q25. Answer: b. plt.plot(type= 'hist', edgecolor = 'red')

Section – B

(Assertion and Reason)

(Marks will be awarded to maximum 20 questions.)

Q26. Answer: a. Information Technology Act, 2000

Q27. Answer: a. copyright

Q28. Answer: c. End User License Agreement

Q29. Answer: d. Legend

Q30. Answer: c. width

Q31. Answer: c. linewidth

Q32. Answer: c. Identity theft

Q33 Answer: c. FOSS

Q34. Answer: d. All of the above

Q35. Answer: d. All of the above

Q36. Answer: (a)

Q37. Answer: (a)

Q38. Answer: (d)

Q39. Answer: (c)

Q40. Answer: (c)

Q41. Answer: (a)

Q42. Answer: (b)

Q43. Answer: (c)

Q44. Answer: (c)

Q45. Answer: (a)

Q46. Answer: (b)

Q47. Answer: (c)

Q48. Answer: (b)

Q49. Answer: (b)

Section – C

(Case Study)

(Marks will be awarded to maximum 5 questions.)

Q50. Answer. a. print(DF.loc[‘T20’, ‘Shikhar’])

Q51. Answer. c. Both of the above

Q52. Answer. b. print(DF.loc[‘ODI’ : ‘T20’])

Q53. Answer. c. DF.loc[: , ‘Rohit’] > 80

Q54. Answer. b. print(DF.drop(‘Rahul’, axis = 1))

Q55. Answer. a. DF.loc[‘Test’, ‘Rishab’]=DF.loc[‘Test’, ‘Rishab’]+10

Term-I
Subject: Informatics Practices (Code-065)
Class – XII

Time Allowed: 90 minutes **Maximum Marks: 35**

General Instructions:

- The paper is divided into 3 Sections- A, B and C.
- Section A, consists of Question 1 to 25 and student need to attempt 20 questions.
- Section B, consists of Question number 26 to 49 and student need to attempt 20 questions.
- Section C, consists of Question number 50 to 55 and student need to attempt 5 questions.
- All questions carry equal marks.

Section – A

Section A consists of 25 questions, attempt any 20 questions

1. Which of the following thing can be data in Pandas?
   a) Python Dictionary
   b) An ndarray
   c) A Scalar value
   d) All of the above

2. Which of the following data structure is required to analyze data in Pandas
   a) Series
   b) DataFrame
   c) Both of the above
   d) None of the above

3. Which of the following statement is correct for Series?
   a) We can create Series from Dictionary in Python.
   b) Keys of dictionary become index of the series.
   c) Order of indexes created from Keys may not be in the same order as typed in dictionary.
   d) All are correct

4. A DataFrame object can store _____ types of elements.
   a) Homogenous
   b) Heterogeneous
   c) Only String
   d) None of the above

5. The axis 0 in a data frame identifies _____ and axis 1 identifies _____.
   a)Columns, Rows
   b)Rows, Columns
   c)values, rows
   d)ndim, columns

6. Which of the following is true?
   a)If data is an ndarray, index must be the same length as data.
   b)Series is a one-dimensional labeled array capable of holding any data type.
   c)Both A and B
   d) None of the above

7. What is data visualization?
a) It is the numerical representation of information and data
b) It is the graphical representation of information and data
c) It is the character representation of information and data
d) None of the above

8. Which is a python package used for 2D graphics?
a) matplotlib.pyplot
b) matplotlib.pip
c) matplotlib.numpy
d) matplotlib.plt

9. Minimum number of arguments to pass in a pandas Series _____
a)0
b)1
c)2
d)3

10. To give a title to x-axis, which of the following method is used?
a) pl.xtitle("title")
b) pl.xlabel("title")
c) pl.xheader("title")
d) pl.xlabel.show("title")

11. How could you improve your digital footprint?
a) By checking your social media privacy setting to make sure that you are sharing with people you know and trust.
b) Share your personal information with a good friend and family member.
c) it's best not to post anything if want to stay safe,
d) its not necessary to think before you post.

12. Knowledge and understanding of netiquette is useful because
a) It will help you create a positive impression on those you meet in cyberspace
b) It explains some of the technical limitations of online communications
c) It explains the conventions already being used by millions of cybernauts.
d) All of the above.

13. The free software movement is headed by
a) Free Software foundation
b) Debian free software guidelines.
c) Brekely software distribution
d) Open source initiative

14. For what purpose pandas is used?
a)To create a GUI programming
b)To create a database
c)To create a high level array
d)All of the above

15. Which of the following would be creative work protected by copyright:
(a) A list of all Indian President names
(b) A portrait of your family

(c) A song you Wrote
(d) The name of your pet dog

16. Full name of GPL is_____
(a) GNU General Public license
(b) General Public License
(c) General Packet License
(d) All of above

17. How many values will be there in array1, if given code is not returning any error?
>>> series4 = pd.Series(array1, index = [“Jan”, “Feb”, “Mar”, “Apr”])
a) 1
b)2
c)3
d)4

18. Person who gains illegal access to computer is known as:
(a) Hacker
(b) Worm
(c) Pirate
(d) Thief

19. _____ is a 2-D data structure in pandas with row index and column index both.
a)Series
b)DataFrame
c)List
d)Tuple

20. Which of the following element/s is/are cause of e-waste?
a) Lead
b) Cadmium
c) Beryllium, or Brominates flame retardants
d) All of the above

21. You are planning to go for a vacation. You surfed the internet to get answers for the following queries:
(a) Weather conditions
(b) Availability of air tickets and fares
(c) Places to visit
(d) Best hotel deals
(e) All of these

Which of your above mentioned actions might have created a digital footprint?

22. Which of the following is not a type of a Cybercrime ?
(a) Data theft
(b) Forgery
(c) Damage to data
(d) Installing Antivirus for Protection

23. A DataFrame is _____ mutable and _____ mutable?
a)Row , column

b)Row index, column index
c)Size, shape
d)Size, value

24. In data science which of the python library is more popular?
a)Numpy
b)Pandas
c)Opencv
d)Django

25. when we create a DataFrame from single series, How many columns it has?
a)1
b)2
c)As many as number of elements in the series
d)None of the above

Section- B

Section B consists of 24 Questions (26 to 49) . Attempt any 20 questions

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

```
import pandas as p1
s1=p1.Series( [11,12,13,14])
print(s1.index)
```

a. Syntax Error
b. [0,1,2,3]
c. ['I','II','III','IV']
d. ['A','B','C','D']

27. Given are two objects, a list object namely lst1 and a series object namely ser1, both are having similar values i.e. 2,4,6,8. Find out the output produced by following statements:

```
print(lst1*2)
print(ser1*2)
```

a. [2,4,6,8,2,4,6,8] 1. 4
2. 8
3. 12
4. 16

b. [4,8,12,16] 1 2
2 4
3 6
4 8
5 2
6 4
7 6
8 8

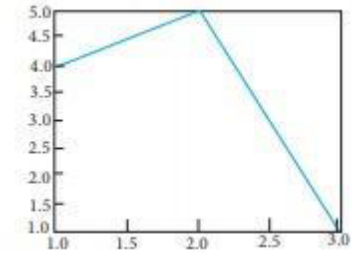
28. What will be the output of following code-

```
import pandas as pd
s1=pd.Series([1, 2, 2, 7, 'Sachin', 77.5])
print(s1.head())
```

a. Last data elements of series along with its indices i.e. -1.
b. First data element of series along with its indices i.e. 0.
c. Entire series
d. First five data elements of series along with its indices i.e. 0,1,2,3,4 respectively

29. Ravi has to prepare a project report on "Chemicals". He decides to take information from the internet. He downloads those webpages containing information on 'Chemicals'. Which of the following steps taken by Ravi is/are an example of plagiarism?

a)He read a paragraph and rewrite it in his own words and used in his project.
b) He downloaded different images and after making a collage paste in his report.
c) He downloaded a power point presentation from website and named it as his own.
d) All of the above.
30 Observe the output figure. Identify the coding for obtaining this output.



a) import matplotlib.pyplot as plt
plt.plot([1,2],[4,5])
plt.show()
b) import matplotlib.pyplot as plt
plt.plot([2,3],[5,1])
plt.show()
c) import matplotlib.pyplot as plt
plt.plot([1,2,3],[4,5,1])
plt.show()
d) import matplotlib.pyplot as plt
plt.plot([1,3],[4,1])
plt.show()

31. Choose correct option :
D1={ 'A':'CS', 'B':'IP'}
D2={ 'B':'IP', 'A':'CS'}
Statement 1: Output of print (D1==D2) is True.
Statement 2: Dictionary is a collection of key-value pairs. It is not a sequence.

a. Only Statement 1 is true.
b. Only Statement 2 is true.
c. Both Statement 1 and 2 are true, but Statement 2 is not correct reasoning of Statement 1.
d. Both Statement 1 and 2 are true, but Statement 2 is correct reasoning of Statement 1.

32. Identify the right type of chart using the following hints.
Hint 1: This chart is often used to visualize a trend in data over intervals of time.
Hint 2: The line in this type of chart is often drawn chronologically.
a) Line chart
b) Bar chart

c) Pie chart
d) Scatter plot

33. A software company purchases new computers every year and dumps the old ones into the local dumping yard . Write the name of the most appropriate category of waste that the organization is creating every year out of the following options :

i (i) Business waste
ii (ii) Commercial waste
iii (iii) Solid waste
iv (iv) E-waste

34. Choose the correct code for the following statements being correct or incorrect.
Statement I: Intellectual Property is a category of property that includes intangible creations of the human intellect.
Statement II: IPR does not include trade secrets and moral rights.
a) Both the Statements I and II are correct.
b) Both the Statements I and II are incorrect.
c) Statement I is correct ,but II is incorrect.
d) Statement II is correct ,but I is correct.

35. Consider the following series named s1 has given values and index

Index	**Elemennts**
I	15
II	20
III	25
IV	30

Then write the output of the command s1>20

a)

Index	Elements
I	False
II	False
III	True
IV	True

b)

Index	Elements
III	25
IV	30

c)

Index	Elements
II	20
III	25
IV	30

d. None of the above

36. Rita is reciving threatening emails from some unknown sender repeatedly. What should she do?
(a) Inform parents, teacher and go to Police station with parents.
(b) Ignore them
(c) Keep silent and not tell anybody about it
(d) Follow the instructions of the sender

37. What is a correct syntax to display first row of dataframe DF
(a) print(DF.head(1))

(b) print(DF[0 : 1])
(c)print(DF.iloc[0 : 1])
(d) All of the above

38. What is an example of e- waste ?
(a) A ripened banana
(b) An old computer
(c) Old clothes
(d) Empty soda cans

39. Write the code to append df2 with df1
a. Df2=Df2.append(Df1)
b. Df2=Df2+Df1
c. Df2=Df2.appendwith.Df1
d. Df2=Df1.append(Df1)

40. Write statement to transpose dataframe DF.
(a) DF.t
(b) DF.transpose
(c)DF.T
(d) DF.T( )

41A text taken from a source is placed in a report without providing reference is called as
a) Popularism
b) Phishing
c) Plagiarism
d)Cyber bullying

42. What will be the output of the following code?
```
import pandas as pd
s = pd.Series(6,index=range(0,5))
print(s)
```

a. An Error message

b.
```
0    9
1    9
2    9
3    9
4    9
dtype: int64
```

c.
```
1    6
2    6
3    6
4    6
5    6
dtype: int64
```

d.
```
0    6
1    6
2    6
3    6
4    6
dtype: int64
```

43. Given two Series created using below given statements :
import pandas as pd
ds1 = pd.Series([2, 4, 6, 8, 10])
ds2 = pd.Series([1, 3, 5, 7, 9])
choose the correct statement to find the product of ds1 and ds2.

a. print(ds1 x ds2)
b. print(product(ds1,ds2))
c. print(ds1 ** ds2)
d. print(ds1 * ds2)

44. Predict the output of the following code segment from the available options:

import pandas as pd
f1=pd.DataFrame([5,6,7])
f2=pd.DataFrame([5,6,7],index=['five','six','seven'])
print("Frame 1")
print(f1)
print("Frame 2")
print(f2).

a. An Error message

b.
```
Frame 1
   0
0  5
1  6
2  7
```

c.
```
Frame 2
         0
five     5
six      6
seven    7
```

d.
```
Frame 1
   0
0  5
1  6
2  7
Frame 2
         0
five     5
six      6
seven    7
```

45. A legal right created by the law of a country that grants the creator of an original work exclusive rights for its use and distribution is called

a) Copyright
b) Invention
c) Backup
d) Worm

46. Consider the following dataframe ***dtf*** then What will be the possible output of the statement :
dtf.shape

```
         Population  Avg Income  Per Captia income
Delhi          1001       45000          44.955045
Mumbai         2005       56000          27.930175
Chennai       30236       57000           1.885170
Kolkata        4662       46000           9.867010
```

a. (4,3)
b. (3,4)

c. 4,3
d. (4,4)

47. Which method is used to read the csv file content into data frame?
a. read_csv()
b. readcsv()
c. reading_csv()
d. Read_CSV()

48. Write down the command that will give the following output :-

	EMPID	DESIGNATION	SALARY
0	E01	PRT	30000
1	E02	PGT	60000
2	E03	TGT	45000

a. edf.Head(row=3)
b. edf.head(3)
c. edf.head(2)
d. edf.Head(3)

49. Choose correct option :
Reena created a series s1 having data elements as 12, 13, 14, 15 with index as I1, I2, I3,I4 respectively. She is using code either s1.loc ['I2':'I3'] or s1.iloc[1:3]
Statement 1: Both code will give identical output.
Statement 2: Both codes can be used to access data elements as 13,14,15 respectively.
a. Only Statement 1 is true.
b. Only Statement 2 is true.
c. Both Statement 1 and 2 are true, but Statement 2 is not correct reasoning of Statement 1.
d. Both Statement 1 and 2 are true, but Statement 2 is correct reasoning of Statement 1.

Section –C

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

Case Study

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

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

50. Write Python commands to Display the house names where the number of Second Prizes are in the range of 12 to 20.

a. df['Name'][(df['Second']>=12) and (df['Second']<=20)]
b. df[Name][(df['Second']>=12) & (df['Second']<=20)]
c. df['Name'][(df['Second']>=12) & (df['Second']<=20)]
d. df[(df['Second']>=12) & (df['Second']<=20)]
51.
Write Python commands to Display all the records in the reverse order.

a. print(df[::1])
b. print(df.iloc[::-1])
c. print(df[-1:]+df[:-1])
d. print(df.reverse())

52. Display the bottom 3 records

a. df.last(3)
b. df.bottom(3)
c. df.next(3)

53. Choose the correct output for the given statements
x=df.columns[:1]
print(x)

a. 0
b. Name
c. First
d. Error

54. Which command will give the output 24:
a. print(df.size)
b. print(df.shape)
c. print(df.index)
d. print(df.axes)

55. What will be the answer of df.shape() command

a.(4,6)
b(6,4)
c(5,4)
d(4,5)

ANSWER KEY --PRE TERM-I
Subject: Informatics Practices
Class–XII

1	d
2	c
3	a
4	b
5	a
6	d
7	b
8	c
9	d
10	c
11	b
12	d
13	c
14	c
15	c
16	c
17	c
18	a
19	**b**
20	a
21	b
22	a
23	a
24	b.
25	a.
26	d
27	c
28	a
29	a
30	b
31	d
32	c
33	c
34	c
35	a
36	d
37	c
38	a
39	a
40	b

41	d
42	a
43	b
44	a
45	d
46	a
47	c
48	a
49	a
50	c
51	b
52	d
53	c
54	a
55	d