

**PreTerm-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. Series means-

- (a) One-dimensional array
- (b) Two-dimensional array
- (c) An array without index
- (d) None of the above

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

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

3. To display last element of a Series object S which is containing 10 elements, you will write

- (a) `S[10]`
- (b) `S[-10]`
- (c) `S[9]`
- (d) `S[0]`

4. 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.loc[[0,1]]`

5. What will be the output of the given code?

```
import pandas as pd
s = pd.Series([1,2,3,4,5], index=['akram','brijesh','charu','deepika','era'])
print(s['deepika'])
```

- (a) 1
- (b) 2
- (c) 3
- (d) 4

6. . \_\_\_\_\_ is the function to save the graph.

- (a) `Savefig()`
- (b) `Savefigure()`
- (c) `Savegraph()`
- (d) `Savechart()`

7. To get the number of dimensions of a Series object,  
 (a) index      (b) size attribute is displayed.      (c) itemsize      (d) ndim
8. To check if the Series object contains NaN values, attribute is displayed.  
 (a) hasnan      (b) nbytes      (c) ndim      (d) hasnans
9. To display last five rows of a Series object S, you may write  
 (a) head()      (b) head(5)      (c) tail()      (d) tail(-5)
10. 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
11. Stealing someone else's intellectual work and representing it as own, is called  
 (a) Intellectual steal      (b) Pluckism      (c) Plagiarism      (d) Pickism
12. Which of the following is not a cyber crime ?  
 (a) Scam      (b) Phishing  
 (c) Child pornography      (d) Down vote a social media post
13. Which of the following is the type of software that has self-replicating software that causes damage to files and system ?  
 (a) Trojans      (b) Viruses      (c) Worm      (d) Adware
14. To delete a row from a DataFrame, you may use  
 (a) remove      (b) del      (c) drop      (d) cancel
15. \_\_\_\_\_ is a grant of the inventor's exclusive right to prevent others from manufacturing, selling, using or importing a certain product or service.  
 (a) Trademark      (b) Patent      (iii) Digital right      (iv) Copyright infringement
16. What is an example of e-waste  
 (a) An old computer      (b) A ripened banana  
 (c) Old clothes      (d) Empty soda cans
17. Which of the following function will produce a horizontal bar chart ?  
 (a) plotbarh()      (b) hbar.plot()      (c) bar()      (d) barh()
18. You and your friend are working together on an IT project. Your friend copies some of the contents from the internet and pastes it in the project. Your teacher checks your project with plagiarism checker tool and finds that the project contains 45% plagiarized material. What is the conclusion of your teacher?  
 (a) Only your friend is guilty of plagiarism.  
 (b) Since only 45% of the content was copied, neither is guilty of plagiarism.  
 (c) Both have committed plagiarism as the evidence proves it.  
 (d) Since both have been doing a school project, they are allowed to copy content from the internet.

19. Which argument of bar() lets you set the thickness of bar ?  
 (a) thick            (b) thickness            (c) width            (d) barwidth
20. Prolonged and continuous use of technology may lead to  
 (a) Internet addiction            (b) Sleeping disorders  
 (c) Loss of attention and increased stress            (d) All of the above
21. Your best friend posted some photos on the social media she took with you on her birthday. However, you instructed her to remove the photos in which you are seen. Is it possible and how would she do that?  
 (a) She'll take the photographs down from her social media posts.  
 (b) She'll hire a professional to remove all your photos from her account.  
 (c) She'll track down everyone who viewed or copied the photos and remove photos from their accounts.  
 (d) She will never be able to delete such photographs since they may have been copied by someone else.
22. Which of the following is not a type of cybercrime?  
 (a) Data theft    (b) Identity theft            (c) Damage to data            (d) Installing antivirus for protection
23. 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
24. CSV stands for:  
 (a) Common Standard Values            (b) Comma Semicolon Values  
 (c) Comma Separated Values            (d) Comma Spreadsheet Values
25. PyPlot is an interface of Python's.  
 (a) seaborn    (b) plotly library.            (c) ggplot            (d) matplotlib

**Section – B**

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

26. Write the command in the blank to obtain the given output:

```
import pandas as pd
a=[10,20,30,40]
s1= _____
print(s1)
```

Output:

```
One    10
Two    20
Three  30
Four   40
```

- (a) `pd.Series(a,index=['One','Two','Three','Four'])`  
 (b) `pd.Series(a=['One','Two','Three','Four'],index)`

(c) pd.Series(a,index=['One','Two','Three','Four'])

(d) Create Series(a,index=['One','Two','Three','Four'])

27. Assuming the given series, named Salary, which command will be used to increase 2000 in every employee's salary?

Om 35000

Vinay 35000

Simi 50000

Nitin 54000

Nandi 60000

dtype: int64

(a) Salary\*2000      (b) Salary.add(2000)      (c) Salary+2000      (d) Salary.count()

28. Ananya wants to store her Term-I marks in a Series which is already stored in a NumPy array. Choose the statement which will create the series with Subjects as indexes and Marks as elements.

```
import pandas as pd
```

```
import numpy as np
```

```
Marks = np.array([30,32,34,28,30])
```

```
subjects = ['English','Maths','Chemistry','Physics','IP']
```

```
Series1= _____
```

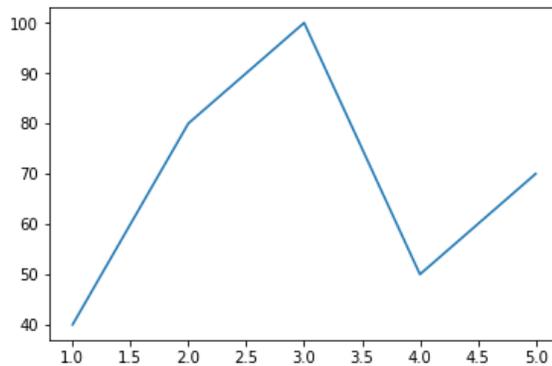
(a) pd.Series(Marks,index=subjects)      (b) pd.Series(np.Marks,index=subjects)

(c) PD.Series(index=Marks, subjects)      (d) Pd.Series(Marks,index)

29. \_\_\_\_\_ is a security device that can help protect your network by filtering traffic and blocking outsiders from gaining unauthorized access to private data on your computer.

(a) Protocol    (b) Firewall    (c) Cracker    (d) Spam Filter

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



(a) import matplotlib.pyplot as plt

```
x=[40,80,100,50,70]
```

```
y= [1,2,3,4,5]
```

```
plt.plot(x,y)
```

```
plt.show()
```

(b) import matplotlib.pyplot as plt

```
x=[1,2,3,4,5]
y=[40,80,100,50,70]
plt.plot(x,y)
plt.show()
```

(c) `import matplotlib.pyplot as plt`

```
x=[-1,-2,-3,-4,-5]
y=[40,80,100,50,70]
plt.plot(x,y)
plt.show()
```

(d) All of the above

31. Consider the two statements given below:

Statement 1: Matplotlib is a 2-D plotting library that helps in visualizing figures.

Statement 2: Calling `plot()` function from Matplotlib library will automatically create the necessary figure and axes of the graph.

- (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.

32. Which of the following statements is incorrect regarding graph in matplotlib?

- (a) A bar chart is created using `bar()` and `barh()` functions of pyplot module.
- (b) A line chart is created using `line()` function of pyplot module.
- (c) A histogram plot is created using `hist()` function of pyplot module.
- (d) A line chart is created using `plot()` function of pyplot module.

33. Mohit needs to create a spreadsheet document for an IT project. However, he does not have Excel software installed on his computer. What free software can he get from the internet to finish his project?

- (a) OpenOffice Calc   (b) Python   (c) OpenOffice Document   (d) MySQL

34. Consider the following statements regarding sending of emails.

**Statement 1:** Write your personal information such as name, bank account number, credit cards details, etc.

**Statement 2:** Be respectful and use appropriate greetings such as Hi, Hello, Dear, etc.

**Statement 3:** Use emoticons as often as possible instead of text.

**Statement 4:** Use suitable closing phrases such as Regards, Sincerely, etc.

Identify the correct statements.

- (a) Statement 1 and 4
- (b) Statement 2 and 4
- (c) Statement 3 and 4
- (d) Statement 1 and 2

35. Consider the following series named color:

## Color

- 1 Red
- 2 Green
- 3 Orange
- 4 Yellow
- 5 Black

### dtype: object

Write the command that generates the output as:

- 1 Red
- 3 Orange

### dtype: object

- (a) color[0:4]            (b) color[1:3:2]            (c) color[:4:2]            (d) color[1,3]

36. Which of the following acts is not considered as cyber bullying?

- (a) Harassing a user over instant messaging sessions.
- (b) Circulating rumours about another on social networking sites.
- (c) Posting derogatory messages on a user's social networking pages.
- (d) Playing online games on the internet.

37. What is the correct syntax to access 1 to 3 rows (both inclusive) and first 3 columns from a dataframe Amt?

- (a) Amt.iloc[1:3,0:3]            (b) Amt.loc[1:3,0:2]  
(c) Amt.iloc[2:4,1:3]            (d) Amt.loc[0:3,0:4]

38. Which of the following is not an example of e-waste?

- (a) Discarded smartphones, laptops, etc.
- (b) Broken computer monitors, LCDs, etc.
- (c) Leftover food
- (d) Non-functioning keyboards, printers, etc

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([3,6,9,12],index=['a','b','c','e'])
```

```
S2=pd.Series([2,4,6,8],index=['c','d','b','f'])
```

```
print(S1*S2)
```

- (a) a 6.0
- b 24.0
- c 54.0
- d 96.0
- e NaN
- f NaN

- dtype: float64
- (b) a NaN  
 b 36.0  
 c 18.0  
 d NaN  
 e NaN  
 f NaN  
 dtype: float64
- (c) a 6.0  
 b 36.0  
 c 18.0  
 d 24.0  
 e NaN  
 f NaN  
 dtype: float64

(d) No output.

41. Which command will be used to delete 3 and 5 columns 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])

42. Write the output of the given command:

```
import pandas as pd
s1=pd.Series([13,36,19,42],index=['a','b','c','4'])
print(s1[s1>=30])
```

- (a) b 36  
 D 42  
 dtype: int64
- (b) b 36  
 4 42  
 dtype: int64
- (c) b 30  
 d 30  
 dtype: int64
- (d) a 36  
 b 42  
 dtype: int64

43. Write the output of the given command:

```
import pandas as pd
Ser1=pd.Series([12,33,46,63])
```

```
Ser2=Ser1.sort_values()
print(Ser2.head())
```

(a) 0 12

dtype: int64

(b) 0 12

1 33

2 46

3 63

4 NaN

dtype: int64

(c) 0 12

1 33

2 46

3 63

dtype: int64

(d) 0 NaN

1 12

2 33

3 46

4 63

dtype: int64

44. Nikita is working in an IT company. She is trying to store details of 5 employees in a dataframe. She has collected data and stores it in different lists but is facing problem in creating a dataframe. She has given the following command but is not getting the desired output. Help her.

```
import pandas as pd
```

```
EmpName=['Rohit','Vinay','Sahil','Kailash','Dipika']
```

```
Desig=['Manager','Sales Head','IT Manager','Marketing head','Admin Head']
```

```
Salary =[50000,40000,70000,55000,35000]
```

```
data={EmpName,Desig,Salary}
```

```
Record=pd.DataFrame(data)
```

```
print(Record)
```

(i) data=[EmpName,Desig,Salary]

(ii) data={Name:EmpName,Designation:Desig,Salary:Salary}

(iii) data={'Name':EmpName,'Designation':Desig,'Salary':Salary}

(iv) data=['EmpName','Desig','Salary']

45. Which of the following statements is false regarding OSS?

(a) Its source code is available.

(b) Its source code is editable.

(c) It can be distributed only 10 times.

(d) It comes with a free or nominal charge.

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

Apple Mango Orange

Order1 10 12 8  
Order2 20 10 6  
Order3 20 10 6

Output Required: (3,3)

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

47. Consider the given dataframe 'Record' and identify the output of the given command:

Record	Name	Age	Dose1	Dose2
0	Rakshi	28	June	September
1	Rahul	30	June	September
2	Chetan	46	July	October
3	Shagun	38	May	August
4	Charu	36	August	November

print(Record.loc[2:4,'Name'])

(a) 2 Chetan 3 Shagun Name: Name, dtype: object

(b) 2 Chetan 3 Shagun 4 Charu Name: Name, dtype: object

(c) Name Age Dose1 Dose2 2 Chetan 46 July October 3 Shagun 38 May August 4 Charu 36 August November

(d) Name Age Dose1 Dose2 2 Chetan 46 July October 3 Shagun 38 May August

48. Consider the following dataframe 'Rank':

Rank	Name	Marks	Rank
Student1	Aisha	90.0	I
Student2	Amisha	82.0	II
Student3	Jai	NaN	NaN

Identify the output of the following command:

print(Rank.Marks>80)

(a) Student1 True  
Student2 True  
Student3 False

Name: Marks, dtype: bool

(b) Student1 True  
Student2 True  
Student3 True

Name: Marks, dtype: bool

(c) Student1 False  
Student2 False  
Student3 False

Name: Marks, dtype: bool

(d) Error

49. Consider the two statements given below:

Statement 1: The missing data in Pandas is represented by NaN.

Statement 2: NaN is equivalent to 0.

- (a) Both statements are true.
- (b) Both statements are false.
- (c) Statement 1 is true but Statement 2 is false.
- (d) Statement 2 is true but Statement 1 is false.

### Section - C

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

#### Case Study

Ms. Nandini is working in a school as an IT head. She has been assigned the task to analyze the performance of the students of Class X. She has written a snippet for maintaining student details using a dataframe for all the classes but is facing some problem with it. Help her to rectify the code so as to obtain the desired results.

```
import pandas as pd
StuName=['Kirti','Gunjan','Neetu','Pranjal','Kamal']
AdmNo=[101,102,103,104,105]
Eng=[87,76,68,90,88]
Hindi=[80,79,75,59,60]
Maths=[90,76,66,78,86]
Science=[65,65,68,97,68]
SST=[68,70,60,50,66]
data={'AdmNo':AdmNo,'StudName':StuName,'English':Eng,'Hindi':Hindi,
'Maths':Maths,'Science':Science,'SST':SST}
Record=pd.DataFrame(data)
print(Record)
```

*Output:-*

	AdmNo	StudName	English	Hindi	Maths	Science	SST
0	101	Kirti	87	80	90	65	68
1	102	Gunjan	76	79	76	65	70
2	103	Neetu	68	75	66	68	60
3	104	Pranjal	90	59	78	97	50
4	105	Kamal	88	60	86	68	66

50. She wants to add a new column with name of subject 'Computer' in above data frame choose the right command to do so:

- (a) `Computer("Record")=[67,90,78,88,79]`
- (b) `Record["Computer"]=[67,90,78,88,79]`
- (c) `Computer["Record"]=[67,90,78,88,79]`
- (d) `Record("Computer")=[67,90,78,88,79]`



(Answers)

1	a		
2		c	
3		c	
4			d
5			d
6	a		
7			d
8			d
9		c	
10	b		
11		c	
12			d
13		c	
14		c	
15	b		
16	a		
17			d
18		c	
19		c	
20			d

21			d
22			d
23		c	
24		c	
25			d
26	a		
27		c	
28	a		
29	b		
30	b		
31		c	
32	b		
33	a		
34	b		
35		c	
36			d
37	b		
38		c	
39		c	
40	b		

41		c	
42	b		
43		c	
44		c	
45		c	
46	b		
47	b		
48	a		
49		c	
50		c	
51		c	
52		c	
53	b		
54	a		
55		c	