

KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION**Sample Question Paper (Term-I)****Class : XII****Time Allowed : 90 Minutes****Subject : (065) Informatics Practices****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 (0.77 mark per question).

Section – A**Section A consists of 25 questions, attempt any 20 questions**

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| <p>1. Which of the following is NOT a data structure under PANDAS:</p> <ol style="list-style-type: none"> Panel Dataframe Series All the above are data structure under Pandas <p>2. Default datatype of an empty series is</p> <ol style="list-style-type: none"> int64 float64 int32 float32 <p>3. 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</p> <ol style="list-style-type: none"> S= pd.Series(range(3,13, 3.5)) S=Spd.Series(np.arange(3,13,3.5)) S= pd.Series(range(3:13:3.5)) S=Spd.Series(np.arange(3:13:3.5)) <p>4. Consider a series S=pd.Series(). Which of the following statement will return True?</p> <ol style="list-style-type: none"> print(s.empty) print(s.size) print(s.values) print(s.index) | <p>5. Consider a series
S=pd.Series([10,20, 30, [40, 50], 60]).
What will be output of the following commands?</p> <pre>>>> print(S.count())</pre> <ol style="list-style-type: none"> 4 5 6 Error <p>6. Let a series S contain 5 elements. What will be the result of S.head(8)?</p> <ol style="list-style-type: none"> Display all the five element of the series. Display eight elements with last 3 as None Produce an error None of the above <p>7. Assume 2 Series S1 containing 5 elements, and S2 containing 7 elements, What will the result of
S3 = S1+ S3</p> <ol style="list-style-type: none"> Pandas does not allow addition of Series Will produce error as both series are not of same size Will join the S2 after S1 and the total number of elements in S3 will be 12. Add the corresponding elements of series but will put NaN as result where elements of smaller series not found |
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8. Which of the following statement will give the exact number of values in each column of the data frame?
- `print(df.count())`
 - `print(df.count)`
 - `print(df.count(1))`
 - `print(df.count(axis='index'))`
9. Consider a series
`S= pd.Series(10, index=[10, 20, 30]).`
 What will be output of the following command?
`>>> print(S[2])`
- error
 - 10
 - 20
 - 30
10. It is possible to have a series with duplicate index.
- True
 - False
 - True but duplicate indexes will be ignored
 - None of the above
11. Sohan created a DataFrame, using the following command
`df1=pd.DataFrame({'a':[10], 'b':[2], 'c':[3]})`
 How many columns will be there in the resulting data frame?
- 3
 - 1
 - 2
 - Data Frame will not get created
12. Function used to delete a row from a DataFrame is
- `remove()`
 - `delete()`
 - `del`
 - `drop()`
13. Assume a DataFrame created using the following command:
`df1=pd.DataFrame({'a':[10,20], 'b':[20,30], 'c':[30,40]})`
 What error will the following command generate?
`>>> df1.loc[2]`
- Run time error
 - Value error
 - Index error
 - Key error
14. Assume an empty DataFrame `df`. The command, `df.loc['a']=['A', 'B', 'C']`, will add a new
- Row to the DataFarme
 - A new column to the DataFrame
 - Will generate an error
 - None
15. The function used to iterate over vertical subset of dataset of a DataFrame is :
- `iterrows()`
 - `itercols()`
 - `iteritems()`
 - None of the above
16. Pandas support which of the following types of indexes?
- Positional and Labelled Indexing
 - Iterrow and IterCols
 - Numeric and Non-Numeric
 - Pandas does not support indices
17. 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.
- Line chart
 - Bar chart
 - Pie chart
 - Scatter plot

18. Write the output of the following statement sequence:

```
import pandas as pd
S1=pd.Series([10, 20, 30, 40],['a', 'b', 'c', 'd'])
S2=pd.Series([5, 6, 7, 8, 9],['c', 'd', 'e', 'a', 'b'])
print(S1*S2)
```

- a. a 50.0
b 120.0
c 210.0
d 320.0
- b. a 80.0
b 180.0
c 150.0
d 240.0
e NaN
- c. Error
- d. None of the above

19. Consider a DataFrame- df as below :

	City	MinTemp	MaxTemp	WindSpeed
C1	Delhi	9	41	5
C2	Jaipur	11	43	7
C3	Kanpur	6	40	6
C4	Ratlam	18	36	6

What will the output of the following command?

df.shape

- a. (4,4)
- b. [4,4]
- c. 16
- d. None of the above

20. Consider the statement below to append a DataFrame df2 below a DataFrame d1:

```
df1.append(df2, ignore_index = True)
```

What is the purpose of ignore_index argument in the above statement?

- a. A continuous index value will be maintained across the rows in the new appended data frame.
- b. There will be no index
- c. The new DataFrame will have zero index across all rows
- d. The new DataFrame will be filled with random numbers

21. Function that helps to add a new column in a DataFrame is

- a. addCol()
- b. add ()
- c. ins ()
- d. insert()

22. Naina wrote the following code , what would be the output of the code:

```
import pandas as pd
S1= pd.Series()
print(pd.Series().empty)
```

- a. True
- b. False
- c. Error
- d. None of the above

23. 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)

24. Which of the following is an incorrect example of savefig() function?

- a. plt.savefig("bar1.pdf")
- b. plt.savefig("bar1.png")
- c. plt.savefig("bar1.eps")
- d. plt.savefig("bar1.ppt")

25. Consider the snippet given below:

```
import matplotlib.pyplot as plt
sizes = [50, 120, 220, 150, 80]
plt.plot(sizes, marker = "s")
```

With reference to the above code, what will be the shape of marker?

- a. square
- b. circle
- c. star
- a. diamond

Section – B

Section B consists of 24 questions, attempt any 20 questions.

26. Which argument of bar() lets you set the thickness of bar ?
- thick
 - thickness
 - width
 - barwidth
27. **Assertion** : In a DataFrame, Axis=1 present the column element
Reason: DataFrame always has two axis, one for Column and other for Row
- Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
 - The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
 - Our Assertion is true but the Reason is false.
 - The statement of the Assertion is false but the Reason is True
28. **Assertion** : To specify datatype for a series object, dtype argument is used.
Reason: Series is a one-Dimensional Data Structure having Homogeneous type of elements.
- Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
 - The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
 - Our Assertion is true but the Reason is false.
 - The statement of the Assertion is false but the Reason is True
29. Which graph should be used where each column represents a range of values, and the height of a column corresponds to how many values are in that range?
- plot
 - line
 - bar
 - histogram
30. Pushpa the student of class 12th has created a Pandas series S1 as shown below
- 110
 - 200
 - 300
 - 400
 - 500
- Choose the command that will give the output
- 200
 - 300
 - 400
 - 500
31. The part of chart which identify different set of data plotted on plot by using different colors is called
- legends
 - title
 - axes
 - figure
32. Which attribute of plot() function is used to set the different color of bars in bar chart?
- color
 - barcolor
 - colorbar
 - none of the above

33. Sukriti build the following database to keep a track of prizes won by the various houses on the sports day.

	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	Sutlej	10	5	3

Write python code to display the house name where the number of second prizes are in the range of 12 to 20. Assume DataFrame Name to be DF

- DF['house'][(DF['Second']>=12) and (DF['Second']<=20)]
 - DF['house'][(DF['Second']>=12) & (DF['Second']<=20)]
 - DF[Name][(DF[Second]>=12 and DF[Second]<=20)]
 - DF[Name][(DF['Second']>=12 and <=20)]
34. Zeenat has created the following data frame DF1 to keep track of data RNO Name Marks1 Marks2 for various student of a class where row index are taken as the default values.

RNO	Name	Marks1	Marks2
1	Swapnil Sharma	30	50
2	Raj Jainpatra	75	45
3	Krishan Kumar	85	95
4	Gopal Jan	90	95

She need to know the marks scored by RNO 2. Help her identify the correct statement from the given options:

- print(DF1[DF1['RNO']==2])
- print(DF1['RNO']==2)
- print(DF1[DF1.RNO==2])
- print(DF1(DF1.RNO==2))

35. Naman has created the following data frame 'Climate' to record the data about climatic condition of four years.

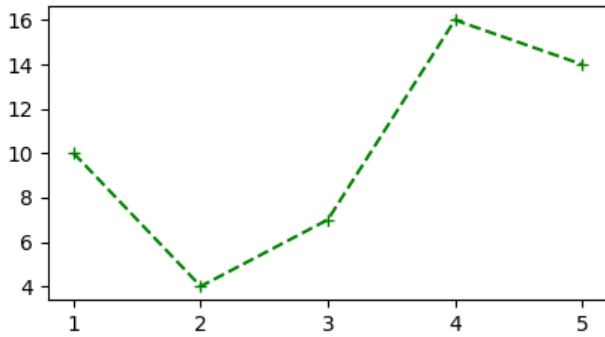
Year	MaxTemp	MinTemp	Rainfall
2017	32	21	123
2018	33	22	140
2019	35	21	135
2020	34	23	160

Which of the following code snippet will return the maximum temperature and Rainfall in the year 2018 and 2019?

- Climate[['MaxTemp','Rainfall']][1 : 3]
 - Climate['MaxTemp','Rainfall'][1 : 3]
 - Climate.iloc[1 : 3]
 - Climate.iloc[1 : 3, 1 : 4 : 2]
36. The following statement will create line plot of _____ color.
pl.plot(a, b, 'g') #a and b are list
- black
 - yellow
 - green
 - magenta
37. How long is your digital footprint visible for?
- It creates a permanent record.
 - It depends on the website you spend most time on
 - Digital footprints are removed after a year
 - Digital footprints are cleaned as soon as we clear our browser history
38. Which one of the following is NOT an example of 'Passive digital footprint'?
- Browsing History
 - Search history.
 - Tagged photos,
 - Likes on sites like Facebook and Instagram.

39. Kajal wants to plot and display the following graphs:

The sequence of commands for the same are



- `import pyplot as plt`
`plt.plot([10, 4, 7, 16, 14], marker='+')`
`plt.show()`
 - `import matplotlib.pyplot as plt`
`plot([1, 2, 3, 4, 5], [10, 4, 7, 16, 14],`
`marker='+', linestyle='--')`
`plt.show()`
 - `import matplotlib.pyplot as plt`
`plt.plot([1, 2, 3, 4, 5], [10, 4, 7, 16, 14],`
`marker='+', linestyle='--')`
`plt.show()`
 - `import pyplot as plt`
`plt.plot([1, 2, 3, 4, 5], [10, 4, 7, 16, 14],`
`marker='+', linestyle='--')`
`plt.show()`
40. Name the cyber law enforced in India to provide legal recognition to electronic commerce and to facilitate filing of electronic records with the Government ____
- IT(Information Technology) Act 2000
 - DIT(Digital Information technology) Act 2000
 - IIT (Indian Information Technology) Act 2000
 - EnC (Electronic and Commerce) Act 2000
41. Siddhant received an email from an unknown source claiming that he has won a reward of Rs. 1 lakh from a repeated lottery firm. To claim his award he need to click on a link and provide his bank. What should he do:
- Click on the link and provide the bank details as soon as possible.
 - Open a new bank account and provide its details.
 - Ignore the email.
 - Report the matter to local police station or a nearby police IT cell.
42. Which of the following is NOT a cybercrime?
- Cyber trolling
 - Asking of ransom over internet
 - Hacking
 - All the above are cybercrimes
43. Which of them is an OSS?
- Adobe Reader
 - MS Word
 - Linux
 - Google Chrome
44. A _____ is an exclusive right granted for an invention
- Impact
 - Patent
 - Copyright
 - Plagiarism
45. Find the odd one out
- Logs of IP addresses
 - Geo-locations
 - Facebook Posts
 - Data Collected by cookies
46. Which of them is a method to reduce E-Waste:
- try repairing the electronic device before getting a new one
 - Consider limiting the number of electronics
 - Recycle
 - All of the above

47. Which is/are harmful consequence of excessive use of Internet?
- Sleep deprived
 - Social isolation
 - Depression
 - All of the above
48. Data which has no restriction on usage and is freely available to everyone under intellectual property rights is categorized as:
- Open source
 - Open data
 - Open content
 - Open education

49. **Assertion:** Stealing money from someone's wallet is a type of cybercrime.
Reason: Cybercrime is a crime that involves a computer and a network.
- Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
 - The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
 - Our Assertion is true but the Reason is false.
 - The statement of the Assertion is false but the Reason is True

Section – C

Section C consists of 06 questions, attempt any 05 questions.

Anuradha is a Physics teacher. She is very keen to keen to analyze the performance of her students in various unit tests. For this purpose she has developed the following dataframe – df. Help her perform few tasks as given in questions

Rno	Name	UT1	UT2	UT3	UT4
1	Prerna Singh	24	24	20	22
2	Manish Arora	18	17	19	22
3	Tanish Goel	20	22	18	24
4	Falguni Jain	22	20	24	20
5	Kanika Bhatt	15	20	18	22
6	Ramandeep Jha	20	15	22	24

50. Write down the command that will give the following output.

```
Rno      6
Name     Tanish Goel
UT1      24
UT2      24
UT3      24
UT4      24
dtype: Object
```

- `print(df.max)`
- `print(df.max())`
- `print(df.max(axis=1))`
- `print(df.max, axis=1)`

51. The teacher needs to know the marks scored by the student with roll number 4. Help her to identify the correct set of statement/s from the given options :

- `df1=df[df['Rno']==4]`
`print(df1)df1`
- `df1=df[rollno==4]`
`print(df1)`
- `df1=df[df.rollno=4]`
`print(df1)`
- `df1=df[df.rollno==4]`
`print(df1)`

52. Which of the following statement/s will give the exact number of values in each column of the DataFrame?

- `print(df.count())`
- `print(df.count(0))`
- `print(df.count)`
- `print(df.count(axis='index'))`

Choose the correct option:

- both (i) and (ii)
- only (ii)
- (i), (ii) and (iii)
- (i), (ii) and (iv)

53. 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)`

54. 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])`

55. Ms. Anuradha now desires to print average of each column 'UT1', 'UT2', 'UT3', and 'UT4' separately. Write an appropriate command for the purpose.

- a. `df[['UT1': 'UT4']].mean()`
- b. `df[['UT1', 'UT2', 'UT3', 'UT4']].average()`
- c. `df[['UT1', 'UT2', 'UT3', 'UT4']].mean()`
- d. It is not possible to find the mean of the column.

0-0-o- Best of Luck -o-0-0