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हैदराबाद संभाग / HYDERABAD REGION

QUESTION BANK OF MULTIPLE CHOICE QUESTIONS 2021-22

Class XII Subject: - INFORMATICS PRACTICES (065)

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MCQs

Q.1 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]] C. df.[[0-1]]

Ans. A

Q.2 If df is a dataframe then print(df) will print

A. The first ten rows B. The first five rows
C. The first five and last five rows D. The first ten and the last ten rows

Ans. C

Q.3 The following table shows the python code and its expected output. Choose the correct word for blank space in line 3 for printing the column:

A. index B. column C. col D. heads

Python code	**Output**
1 import pandas as pd 2 x = [10, 20 30] 3 ser = pd.Series(x, _____=["r1", "r2", "r3"]) 4 print(ser)	r1 10 r2 20 r3 30

Ans. A

Q.4 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
dtype: int64
```

B.
```
Marks1    90
Marks2    95
Marks3    97
dtype: int16
```

C.
```
Marks1  Marks2  Marks3
90      95      97
```

D.
```
Marks1  Marks2  Marks3
90      95      97
dtype: int64
```

Ans. B

Q.5 Pandas Series can be created from:

A. Scalar values B. NumPy arrays
C. dictionary D. All of the above

Ans D

Q.6. Which is the best analogy of digital footprint:

A. Our foot print when we walk over sand of sea beach

B. Our foot print when we walk over the cement road constructed few minutes back
C. our foot print when we enter inside our home with dirty feets.
D. All of the above

Ans B (since after drying, foot prints are retained for years)

Q.7 . Digital footprint are not created :
A. when we do online shopping
B. when we create our e-mail address
C. when we watch youtube videos
D. When we send e-mail
Ans C

Assertion and Reason based questions

Q. 8:
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
E. Both A and R are false
Ans A

Q. 9:
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
Ans B

Q. 10:
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
E. Both A and R are false
Ans B

Q. 11:
Assertion (A) : An Internet troll is a person who deliberately sows discord on the Internet by starting quarrels or upsetting people.
Reason (R) : We can download and use any material available on the Internet.

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
Ans C

Q. 12:
Assertion (A) : Social media are websites or applications that enable their users to participate in social networking but they cannot create and share content with others in the community.
Reason (R) : We should not waste precious time in responding to unnecessary emails or comments unless they have some relevance for us.

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
Ans D

Case Study based questions

Q.13 ABC Enterprises is selling its products through three salesmen and keeping the records of sales done quarterly of each salesman as shown below:

	Quarter 1	**Quarter 2**	**Quarter 3**	**Quarter 4**
Salesman 1	23000	18000	30000	35000
Salesman 2	11000	15000	20000	22000
Salesman 3	60000	40000	35000	55000

Company is storing the above information in a CSV file "Qtrly_Sales.csv". Mr. Rohit is a programmer. Company has given him the responsibility to create the program to visualise the above data. He wrote Python code but he is facing some difficulties. Help him by giving the solutions of following situation:

Python code:

```
1 import pandas as pd
2 import _________________ as plt
3 df=___________("Qtrly_Sales.csv")
4 df.plot(___________='bar', color=['red','blue','brown','green'])
```

```
5 plt._____('Quarterly Report')
6 plt.xlabel('Salesman')
7 plt.ylabel('Sales')
8 plt._____()
```

1. Choose the correct Python library out of following options in line 2

   A. **matplotlib** **B. matplotlib.plot**

   C. py.plot **D. matplotlib.pyplot**

   Ans. D

2. Choose the correct option to read the csv file in line 3

   A. **read_csv** **B. pd.read_csv**

   C. pd.get_csv **D. get_csv**

   Ans B

3. Choose the correct option to select the type of graph in line 4

   A. **type** **B. kind**

   C. style **D. graph**

   Ans B

4. Choose the correct word to give the heading in line 5

   A. **label** **B. heading**

   C. title **D. caption**

   Ans C

5. Choose the correct word to display the graph in line 8

   A. **plot()** **B. display()**

   C. showgraph() **D. show()**

   Ans D

Q.14. Abhishek uses computer and mobile for his personal use. Study the following cases and answer the questions given below.

(1) Once he got the message in Whatsapp that CBSE is announcing the result of class XII tomorrow at 12:00 pm. He forwarded the message to his few friends. But later he came to know that no such announcement was there in CBSE official web-site.
(2) He is visiting several web-sites.
(3) He is getting abuse messages from an unknown number due to which he is thinking of quarreling with that person.
(4) He registered himself in one website by giving his email id and phone number but later his friend told him about the concept of digital footprint. He is now thinking about canceling the registration so that his personal information can be deleted from that website.
(5) He uploaded one video in his youtube channel where he used one background music downloaded from somewhere on Internet

a. In case (1), he is violating :

   A. net etiquettes B. Communication etiquettes
   C. copy right D. None of the above
   Ans B

b. In case (2) , he is leaving:
A. Active digital footprint B. Passive digital footprint
C. There is no chance of any digital footprint
D. None of the above
Ans B

c. In case (3), the unknown person can be called as:
A. Cyber buller B. Internet troll
C. Hacker D. Cracker
Ans B

d. In case (4) which one is correct:
A. His data will be deleted forever after cancelling the registration.
B. His data will be deleted after 30 days since it is a digital footprint.
C. His data will never be deleted since it became the digital footprint.
D. As per the terms and condition of that website, data will be deleted.
Ans C

e. In case (5), he may be violating:
A. copyright B. Intellectual property right
C. plagiarism D. None of the above
Ans A

MCQ for Term 1

Name of the teacher prepared: Ajitha PGT CS Name of the teacher vetted: Prabhod PGt CS

Sub: Informatics Practices

Topics: Data structures in Pandas - Series and data frames. Series: Creation of series from dictionary, scalar value; mathematical operations; series attributes, head and tail functions; selection, indexing and slicing.

1. Consider the following python code and write the output for statement S1:

```
import pandas as pd
K=pd.Series([2,4,6,8,10,12,14])
print(K.quantile([0.50,0.75])     #S1
```

   a. 0.50 8.0
   b. 0.75 11.0
   c. 0.50 8.0
      0.75 11.0
   d. 0.75 11.0
      0.50 8.0

2. Which of the following statements about Pandas and Numpy are True?

a. A Numpy array requires homogeneous data, while a Pandas DataFrame can have different data types.
b. Pandas is used when data is in Tabular Format, whereas Numpy is used for numeric array based data manipulation.
   a. Both are true.
   b. A is true, B is false
   c. Ais false, B is true
   d. Both are false

3. Consider the given python program:

```
import _______ as pd              #S1
series1 = _______.Series([10,20,30])   #S2
print(series1)
```

Fill the blank in S1 with the correct option:

a. Matplotlib
b. Matplotllib.pyplot
c. Numpy
d. Pandas

4. Fill the blank in S2 with the correct option:
   a. pd
   b. series1
   c. Series
   d. Pyplot
5. What will be the output of the code in Q.no. 6?
   a. [10,20,30]
   b. 0 10
      1 20
      2 30
   c. 10
      20
      30
   d. 10 1
      20 2
      30 3
6. 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

7. Choose the correct match from the given two columns:

Column A	Column B

A. `import pandas as pd`
`series1 = pd.Series([10,20,30])`
`print(series1)`
	1.Creating series from dictionary

B. `import pandas as pd`
`import numpy`
`series1 = pd.Series(numpy.array([1,2,3,4])`
`print(series1)`
	2. Creating series from scalar values

C. `series1 = pd.Series({'India': 'NewDelhi',`
`'UK':'London', 'Japan': 'Tokyo'})`
`print(series1)`
	3. Creating series from array

a. A-1, B-2 C-3
b. A-2, B-3, C-1
c. A-2, B-1, C-3
d. A-1, B-3, C-2

8. What will be produced by the following python code? [Assuming that all necessary libraries and modules are imported]

```
series1 = pd.Series(np.array([31,28,31,30]), index = ["Jan", "Feb", "Mar"])
print(series1)
```

a. Error: Length of passed values is 4, index implies 3
b. No output
c.
```
Jan   31
Feb   28
Mar   31
```
d.
```
Jan   31
Feb   28
Mar   31
Apr   NaN
```

9. Answer the following based on the series given below:

```
import pandas as pd
list1=[1,2,3,4,5,6,7,8]
list2=['swimming','tt','skating','kho kho', 'bb', 'chess', 'football',"cricket"]
school=pd.Series(list1,index=list2)
school.name=("little")
print (school*2)          #statement 1
print (school.tail(3))    # statement 2
print (school["tt"])      # statement 3
print (school[2:4])       # statement 4
```

i. Choose the correct name of the series object given above:
   a. list1
   b. list2
   c. school
   d. little

ii. Choose the correct output for the statement:

```
print (school.tail(3))    # statement 2
```

a.
```
swimming   1
tt         2
skating    3
```
b.
```
chess      6
football   7
cricket    8
```
c. 4
d.
```
kho kho    4
bb         5
chess      6
football   7
cricket    8
```

iii. Choose the correct output for the statement:
print (school["tt"]). # statement 3

a. 2
b. 3
c. tt 2
d. true

iv. Identify the correct output for:
print (school[2:4]) # statement 4.

a. skating 3
kho kho 4
b. tt 2
skating 3
kho kho 4
c. skating 3
kho kho 4
bb 5
d. skating 3
kho kho 4
bb 5
chess 6
football 7
cricket 8

v. The correct output of the following statement will be:
print (school*2) # statement 1

a. swimming 3
tt 4
skating 5
kho kho 6
bb 7
chess 8
football 9
cricket 10
b. swimming 2
tt 4
skating 6
kho kho 8
bb 10
chess 12
football 14
cricket 16
c. swimming False
tt False
skating True
kho kho True
bb True
chess True
football True
cricket True

d. swimming 1
tt 4
skating 9
kho kho 16
bb 25
chess 36
football 49
cricket 64

10. Pushp, a student of class-XII, has been assigned a code to create a pandas series S1, as shown below.

a 100
b 200
c 300
d 400
e 500
dtype: int64

With reference to the above, answer the given questions:

i. Choose the command that will give the following output:

b 200
c 300
dtype: int64

a. print(S1[:3])
b. print(S1[0:3])
c. print(S1[2:4])
d. print(S1[1:3])

ii. Help him to identify the correct statement that can be used to extract the value with the index 'c':
a. print(S1[c])
b. print(S1(c))
c. print('S1' ['c'])
d. print(S1 ['c'])

iii. Which of the following command will give the following output:

b 200
d 400
dtype: int64

a. print(S1.iloc[1:4])
b. print(S1.iloc[2:4])
c. print(S1.iloc(1:4))
d. print(S1.iloc[1:4:2])

iv. Which of the following command will display the series by adding 10 in eachvalue.
a. print(S1 [+10])
b. print(S1+10)
c. print(S1)+10
d. print(S1)+print(10)

v. Pushp wants to delete the value against index 'd'. Help him to choose the suitable option to do so:
a. S1=S1.drop(d)
b. S1=S1.drop('d')
c. S1=drop('d')
d. S1=S1.drop['d']

11. Answer the question based on the Assertion A and Reason R given.
A:A Series is a one-dimensional array containing a sequence of values of any data type (int, float, list, string, etc).
R:Pandas Series can be imagined as a column in a spreadsheet.
    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.

12. _____ takes an integer value that corresponds to its position in the series starting from 0.
    a. Positional index
    b. Labelled index
    c. Both
    d. None of the above
13. 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.
14. What will be the output of the following?

```
>>> seriesMnths = pd.Series([2,3,4],index=["Feb","Mar","Apr"])
>>> seriesMnths[1]
```

    a. 2
    b. Mar
    c. Feb
    d. 3
15. Choose the correct output of the following code:

```
>>> seriesCapCntry = pd.Series(['NewDelhi', 'WashingtonDC', 'London', 'Paris'],index=['India', 'USA', 'UK', 'France'])
>>> seriesCapCntry[[3,2]]
```

    a. France Paris
       France Paris
    b. USA WashingtonDC
       France Paris
    c. France Paris
       UK London
    d. USA WashingtonDC
       UK London
16. 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

17. Choose the codes with their outputs:

Column A	Column B
A. S1=pd.Series(range(5)) print(S1)	1. a 1 b 4 c 7 d 10 e 13
B. S2=pd.Series(np.arange(3, 13, 3.5)) print(S2)	2. 1 10 3 10 5 10
C. S3=pd.Series(10, index=range(1, 6, 2)) print(S3)	3. 0 0 1 1 2 2 3 3 4 4
D. S4=pd.Series(range(1, 15, 3), index=[x for x in 'abcde']) print(S4)	4. 0 3.0 1 6.5 2 10.0

a. A-4, B-3, C-2, D-1
b. A-3, B-4, C-2, D-1
c. A-3, B-4, C-1, D-2
d. A-4, B-3, C-1, D-2

18. Choose the correct code that produces the output 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

19. Choose the correct code that produces the output below:

```
0   9
1   10
2   11
3   12
4   9
5   10
6   11
7   12
```

a. a=np.arange(9, 13)
   s1=pd.Series(data=a*2)
   print(s1)
b. a=[9, 10, 11, 12]
   s1=pd.Series(data=a*2)
   print(s1)
c. Both the above
d. None of the above

20. Choose the correct Series attributes for the given description:
   i. I return True if there are any NaN values, otherwise return False
   ii. I return the number of dimensions of the underlying data
   iii. I return the number of elements in the underlying data
   iv. I return True if the Series object is empty, false otherwise

   a. isnans, dim, size, isempty
   b. hasnan, ndimension, shape, empty
   c. hasnans, ndim, size, empty
   d. None of the above

---------xxxxxxxxx----------

MARKING SCHEME

Topics: Data structures in Pandas - Series and data frames; Series: Creation of series from dictionary, scalar value; mathematical operations; series attributes, head and tail functions; selection, indexing and slicing.

1. (c) 0.50 8.0
   0.75 11.0
2. (a) Both are true
3. (d) pandas
4. (a) pd
5. (b) 0 10
   1 20
   2 30
6. (b) A, B
7. (b) A-2, B-3, C-1
8. (a) Error: Length of passed values is 4, index implies 3
9. (i) (c) school
   (ii) (b)
   chess 6
   football 7
   cricket 8
   (iii) (a) 2
   (iv) (a) skating 3
   kho kho 4

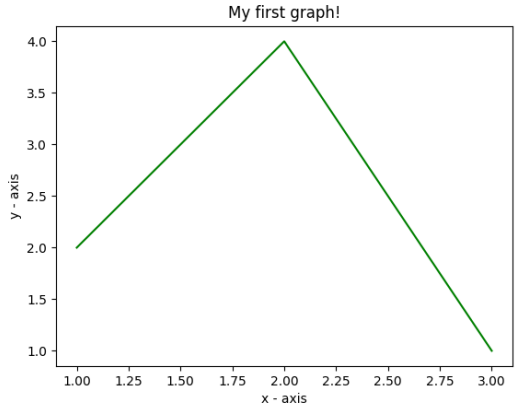
   (v) (b)
   swimming 2
   tt 4
   skating 6

kho kho 8
bb 10
chess 12
football 14
cricket 16

10. i. (c) print(s1[1:3])
    ii. (d) print(S1 ['c'])
    iii.(d) print(S1.iloc[1:4:2])
    iv.(b) print(S1+10)
    v. (b) S1=S1.drop('d')

11. (a) Both A and R are true and R is the correct explanation of A.
12. (a) Positional Index
13. (d) All are correct.
14. (d) 3
15. (c) France Paris
    UK London
16. (c) Both of the above
17. (b) A-3, B-4, C-2, D-1
18. (a) a=np.arange(9, 13)
    s1=pd.Series(index=a, data=a*2)
    print(s1)
19. (b) a=[9, 10, 11, 12]
    s1=pd.Series(data=a*2)
    print(s1)
20. (c) hasnans, ndim, size, empty

	Data Visualization **(Case study Based Question)**	

Q1.	Mr.Sharma is trying to write a code to plot line graph 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(x, y, color='g') #statement 4`
	
	`_____ # statement 5`
	`_____ # statement 6`
		5

```
# giving a title to my graph
plt._____________('My first graph!')       # statement 7

# function to show the plot
_________________                          # statement 8
```

i) Which of the above statement is responsible for plotting the values on canvas.

a) Statement 8
b) Statement 4
c) Statement 1
d) None of the above

ii) Statements 5 & 6 are used to give names to x-axis and y-axis as shown in fig.1. Which of the following can fill those two gaps

a) plt.xlabel('x - axis') plt.ylabel('y - axis')
b) plt.xtitle('x - axis') plt.ytitle('y - axis')
c) plt.xlable('x - axis') plt.ylable('x - axis')
d) plt.xlabel('x axis') plt.ylabel('y axis')

iii) Raman has executed code with first 7 statements. But No output displayed. which of the following statements will display the graph?

a) plt.display()
b) plt.show()
c) matplotlib.pyplot.show()
d) Both b & c

iv) The number of markers in the above line chart are

a) zero
b) three
c) Infinite
d) One

v) Which of the following methods will result in displaying 'My first graph!' in the above graph

a) legend()
b) label()
c) title()
d) Both a & c

Q 2 — As per the reports of NDTV on Coronavirus outbreak Live statistics on 22/08/2021, 7-day average cases in different states of India is as follows: — 5

State	7-Day Average (Average_cases)	Total number of cases till dated in lacs (Total_cases)
Andhra Pradesh	1295	20
Tamil Nadu	1767	25
Kerala	18909	38

Maharastra	4663	64
Telangana	375	6

In order to present the above statistical data, Raghav has decided to plot a bar graph. Suggest him suitable solution to complete his work. The above data has been taken as a dictionary with state name as keys and total number of cases as values.

covid_cases= {"AP": 20,"TN":25, "Kerala":38, "MH":64,"TN":6}
average_cases={"AP": 1295,"TN":1767, "Kerala":18909, "MH":4663,"TN":375}

i) Which of the following statements will create a bar chart with states and corresponding total number of cases

a)
```
import matplotlib.pyplot as plt
States=list(covid_cases.keys())
Total_cases=list(covid_cases.values())
plt.bar(States,Total_cases)
plt.show()
```

b)
```
import matplotlib.pyplot as plt
States=list(covid_cases.keys())
Total_cases=list(covid_cases.values())
plt.plot(States,Total_cases)
plt.show()
```

c)
```
import matplotlib.pyplot as plt
States=covid_cases.keys()
Total_cases=covid_cases.values()
plt.bar(States,Total_cases)
plt.show()
```

d) Both a & b

ii) Which of the following statement will apply different colours to different bars with each bar of width 0.5

a) plt.bar(States,Total_cases,color=["Red","Blue","Green"],width=0.5)
b) plt.bar(States,Total_cases,color=["Red"],width=0.5)
c) plt.bar(States,Total_cases,color=['r','g','b','m','c'],width=0.5)
d) plt.bar(States,Total_cases,width=0.5)

iii) Which of the following is not a valid parameter for customizing the bar graph

a) width
b) edgecolor
c) legend
d) linecolor

iv) Which of the following option is used to display horizontal bars with states on y axis and 7-day average on x-axis

a) plt.bar(Average_cases,states)
b) plt.barh(Average_cases, states)
c) plt.bar(states,Average_cases)
d) plt.barh(states,Average_cases)

	v) Which of the following is not a valid method associated with plotting bar graph a) legend() **b) color()** c) title() d) savefig()	
	ASSERTION BASED QUESTIONS: **In each of the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below:** (A) A is true but R is false. (B) Both A and R are true (C) A is false but R is true. (D) Both A and R are false.	10
Q 3	***ASSERTION(A)*** :A histogram is basically used to represent data provided in the form of groups spread in non-continuous ranges ***REASON(R)*** : matplotlib.pyplot.hist() function is used to compute and create histogram of a variable. Ans: C	1
Q 4	***ASSERTION(A)*** : legend (labels = ['Text']) is used to give title to the graph ***REASON(R)*** : plt.savefig("path") will save the current graph in png or jpeg format Ans: C	1
Q 5:	***ASSERTION(A)*** : plt.plot(x,y,'g',label="Students participating in CCA competition") will plot a Line chart ***REASON(R)*** : 'g' in plot() function is colour of the marker Ans: A	1
Q6	***ASSERTION(A)*** : linestyle, linewidth are used to customize line graph ***REASON(R)*** : In the following example markers, line style and colour are mentioned exclusively *emp_count = [3, 20, 50, 200, 350, 400]* *year = [2014, 2015, 2016, 2017, 2018, 2019]* *plt.plot(year, emp_count, 'o', '-', 'g')* Ans: B	1
Q7	***ASSERTION(A)*** : In histogram X-axis is about bin ranges where Y-axis talks about frequency ***REASON(R)*** : The bins (intervals) must be adjacent, and are often (but are not required to be) of equal size. Ans: B	1
Q8	***ASSERTION(A)*** : matplotlib.pyplot.show() is a method used to plot a line graph ***REASON(R) :*** show() is method is defined in the library matplotlib.pip Ans: D	
Q9	***ASSERTION(A)*** : pyplot is a sub-library of matplotlib ***REASON(R)*** : line() is not a valid plotting function of pyplot Ans: B	
Q10	***ASSERTION(A)*** : Marker has different elements i.e., style, color, size etc ***REASON(R)*** : we can customize line of a line chart by using marker property of plot() function Ans: A	

Q11	***ASSERTION(A)*** : legend of the graph reflects the data displayed on the graph's Y-axis ***REASON(R)*** : Location of the legend can be changed by using loc attribute Ans: B	
Q12	***ASSERTION(A)***: Bar graph and histogram are same ***REASON(R)***: A bar graph represents categorical data using rectangular bars. A histogram represents data which is grouped into continuous number ranges and each range correspond to a vertical bar. Ans: C	

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	Data Frame **(Question based on Reasoning/logic)**	
Q1.	Which function is used to find values from a DataFrame D using the index number? a) D.loc **b) D.iloc** c) D.index d) None of these	1
Q 2	Which attribute of a dataframe is used to convert rowa into columns and columns into rows in a dataframe? **a) T** b) ndim c) empty d) shape	1
Q 3	A DataFrame has two axes **a) True** b) False	1
Q 4	. _____parameter is used to ignore row labels in concatenation operation. **a) ignore_index=True** b) ignore_index=False c) ignoreindex='true' d) index_ignore='False'	1
Q 5	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**	1
Q 6	Which of the following function is used to create DataFrame? **a) DataFrame( )** b) NewFrame( ) c) CreateDataFrame( ) d) None of the Above	1

<table>
<tr><td>Q 7</td><td>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</td><td>1</td></tr>
<tr><td></td><td>(Assertion Reasoning based questions)</td><td></td></tr>
<tr><td>Q 8</td><td>Assertion (A):
Nidhi has create dataframe Df1
Df1<table><tr><th></th><th>Student</th><th>Marks</th><th>Sports</th></tr><tr><td>I</td><td>ABC</td><td>24.5</td><td>Cricket</td></tr><tr><td>II</td><td>DEF</td><td>27.5</td><td>Badminton</td></tr><tr><td>III</td><td>GHI</td><td>30.0</td><td>Football</td></tr></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.</td><td>1</td></tr>
<tr><td>Q9</td><td>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</td><td>1</td></tr>
</table>

Case Based Question

Que 10 **Nidhi has created dataframe df1 as following , help her to perform following tasks and write the code to help her to**

df1

	Student	Marks	Sports
I	Abc	24.5	Cricket
II	Def	27.5	Badminton
III	Ghi	Np.Nan	Football

10 a) Displays the index (row labels) of DataFrame

a) print(df1.index)
b) print(df1.name)
c) print(df1.row)
d) print(df1.index,row='values)

1

10 b) Remove the null value rows

a) df1.rowdelete()
b) Df1.del(np.nan)
c) Df1.drop(np.nan)
d) **df1.dropna()**

1

Returns True/False to show if the DataFrame is empty

a) Print(df1.nan)
b) Print(df1.null)
c) print(df1.empty)
d) print(df1.NULL)

10 c)

1

Que 11 Consider the following code and answer questions:
Riyaz is creating an application using pandas library in his program , his code is mentioned below. Fill in the blanks to help him

```
import _____ as pd            #Statement A
d={'a':[1,2],'b':[2,3]}
d2={'a':[4,5],'b':[6,7]}
df1=pd.DataFrame(d)
df2=pd._____(d2)        # Statement B
df3=pd._____([df1,df2])    # Statement C
```

11 a) Choose the right code from the following for statement A.

a) pandas
b) df
c) data
d) pd

1

11 b) Choose the right code from the following for the statement B.

a) Dataframe
b) DataFrame
c) Series
d) Dictionary

1

11 c) Choose the right code from the following for the statement C.

a) df.index
b) df.shape()
c) df.appenddf()
d) **df.concat()**

1

Que 12	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)	
12 a)	Choose the right code from the following for statement 1. **i. pd** ii. df iii. data iv. p	1
12 b)	Choose the right code from the following for the statement 2. i. Dataframe **ii. DataFrame** iii. Series iv. Dictionary	1
12 c)	Choose the correct statement/ method for the required output: (5,3) i. df.index ii. df.shape() **iii. df.shape** iv. df.size	1
12 d)	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 | i. df.loc[['Month','Passengers']][df['Month']=='Jan'] **ii. df[['Month','Passengers']][df['Month']=='Jan']** iii. df.iloc[['Month','Passengers']][df['Month']=='Jan'] iv. df(['Month','Passengers']][df['Month']=='Jan')	1
		1

12 e)	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 | Passenger | | Air India | 2010 | Jan | 25 | | Indigo | 2010 | Mar | 50 | | Spice Jet | 2012 | Jan | 35 | | Jet | 2010 | Dec | 55 | | Emirates | 2012 | Dec | 65 | i. df.index[]=["Air India","Indigo","Spicejet","Jet","Emirates"] ii. df.index["Air India","Indigo","Spicejet","Jet","Emirates"] **iii. df.index=["Air India","Indigo","Spicejet","Jet","Emirates"]** iv. df.index()=["Air India","Indigo","Spicejet","Jet","Emirates"]	

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	(Assertion Reasoning based questions)	
Q1.	**Assertion (A**): sorting is the operation to arrange data in a specific order , sort_values () function used to perform the operation **Reasoning (R):** Row wise shorting cannot be performed in python dataframe objects a) Both A and R are true and R is the correct explanation of A. b) Both A and R are Ture and R is not the correct explanation of R . **c) A is True but R is false.** d) Both A and R are false	**2**
Q 2	**Assertion (A):** Boolean indexing is a type of indexing. **Reasoning (R) :** DataFrame.loc(False) function can be used to find the relative values where index value is False **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	**2**
Q 3	**Assertion (A):** Some time we want to combine the two dataframes using the merge() function **Reasoning (R):** Merging operation can be performed only with common values of column not with specific column	**2**

	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	
Q 4	**Case Study Based Question**	
a) b)	**Records of the employees are given below in tabular form write code for the following task(5)** **SNO** | **name** | **Test** | **marks** 1 | rohit | 1 | 200 2 | rohit | 2 | 250 3 | mohit | 1 | 200 4 | mohit | 2 | 155 5 | Ranu | 1 | 100 6 | Ranu | 2 | 165 Add a column percent with data:[55,56,59,90,56,48] a) Student=[55,56,59,90,56,48] b) Student.add=[55,56,59,90,56,48] c) Student[per]= [55,56,59,90,56,48] **d) student[“per”]=[55,56,59,90,56,48]** Delete the name and marks columns **a) student.drop([‘name’,’marks’])** b) studet.delete(([‘name’,’marks’]) c) student.erase([‘name’,’marks’]) **d)** deletion of column is not permitted in dataframe	**1** **1**

Q 5 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

5a) **Choose the correct function to rename city columns to location using rename() function:** **1**

a. df.rename(columns={'City':'Location'})
b. df.rename(columns={'City'='Location'})
c. df.rename('City'='Location')
d. df.rename(df.columns('City','Location'))

5b) **Which of the following statement(s) is/are correct with respect to df.columns properties to rename columns** **1**

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

5c) **df.index properties can be used to** **1**

i. **rename rows**
ii. rename columns
iii. rename rows and columns both
iv. None of these

5d) **To display 2 rows from the top in the dataframe, which of the following statement is correct:** **1**

i. df.head()=2
ii. **df.head(n=2)**
iii. df.head(range(2))
iv. All of the above

	Data Frame **(Question based on Reasoning/logic)**	
Q6.	Which of the following is the correct syntax to select or access columns from the dataframe using column names? a) df(col1,col2,…,coln) **b) df[[col1,col2,…,coln]]** c) df[col1,col2,…,coln] d) df{col1:col2:…,:coln}	1
Q 7	Ms. Kavitha wants to print a single column from the dataframe, which of the following is correct syntax for her? a) df(col) b) df<col> **c) df[col]** d) df{df:col}	1

Q 8	Observe the following dataframe code:
	`dt=({'Name':['Akshit','Bharat','Chetan','Dhaval','Gaurang'],`
	`'InternalMarks':[18,19,20,18,19],`
	`'AnnualExam':[76,78,80,76,73]})`
	`df=p`
	
	`d.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
		1

Q 9	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
		1

	c)
	`Name InternalMarks AnnualExam`
	`0 Akshit 18 76`
	`1 Bharat 19 78`
	
	d)
	`Empty DataFrame`
	`Columns: [Name, InternalMarks, AnnualExam]`
	`Index: []`	

Q 10	**Consider the folloowing dataframe and do as directed:** import pandas as pd d={'Mouse':[150,200,300,400], 'Keyboard':[180,200,190,300], 'Scanner':[200,280,330,450]} df=pd.DataFrame(d,index=['Jan','Feb','March','April'])	
10 a)	Write code to access data of Mouse and Scanner columns. **print(df[['Mouse','Scanner']])**	1
10 b)	Write code to access data of scanners using loc[]. **print(df.loc[:,'Scanner'])**	1
10 c)	Write code to access data of rows of jan and march for scanner and keyboard. **print(df.loc[['Jan','March'],['Scanner','Keyboard']])**	1

MCQs for IP class XII

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MCQs:

Q.1 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]] C. df.[[0-1]]
Ans. A

Q.2 If df is a dataframe then print(df) will print

A. The first ten rows B. The first five rows
C. The first five and last five rows D. The first ten and the last ten rows
Ans. C

Q.3 The following table shows the python code and its expected output. Choose the correct word for blank space in line 3 for printing the column:

A. index B. column C. col D. heads

Python code	**Output**
1 import pandas as pd 2 x = [10, 20 30] 3 ser = pd.Series(x, _____=["r1", "r2", "r3"]) 4 print(ser)	r1 10 r2 20 r3 30

Ans. A

Q.4 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
dtype: int64
```

B.
```
Marks1    90
Marks2    95
Marks3    97
dtype: int16
```

C.
```
Marks1  Marks2  Marks3
90      95      97
```

D.
```
Marks1  Marks2  Marks3
90      95      97
dtype: int64
```

Ans. B

Q.5 Pandas Series can be created from:

A. Scalar values B. NumPy arrays
C. dictionary D. All of the above

Ans D

Q.6. 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
Ans B (since after drying, footprints are retained for years)

Q.7 . Digital footprint are not created :

A. when we do online shopping
B. when we create our email address
C. when we watch youtube videos
D. When we send e-mail
Ans C

Q.8: Why we should express greeting on telephone:

A. It express your happiness
B. It shows that you are polite
C. It is the first impression
D. It is the culture.
Ans B

Q.9: As soon we get any good news from any source in social media:

A. We should forward to many people so that they can be benefited.
B. We should never forward to anyone.
C. We should confirm the news from any reliable source before forwarding.
D. We should forward to our family and friends only.

Q.10: While keeping the password:

A. It should not contain any character other than alphabets and numbers.
B. It should contain name, date of birth etc. so that it should be easy to remember.
C. It should contain alphabets (both uppercase and lowercase), numbers and special characters.

Case Study based questions:

Case 1:

ABC Enterprises is selling its products through three salesmen and keeping the records of sales done quarterly of each salesman as shown below:

	Quarter 1	**Quarter 2**	**Quarter 3**	**Quarter 4**
Salesman 1	23000	18000	30000	35000
Salesman 2	11000	15000	20000	22000
Salesman 3	60000	40000	35000	55000

Company is storing the above information in a CSV file "Qtrly_Sales.csv". Mr. Rohit is a programmer. Company has given him the responsibility to create the program to visualise the above data. He wrote Python code but he is facing some difficulties. Help him by giving the solutions of following situation:

Python code:

```
1 import pandas as pd
2 import _________________ as plt
3 df=__________("Qtrly_Sales.csv")
4 df.plot(__________='bar', color=['red','blue','brown','green'])
5 plt.___________('Quarterly Report')
6 plt.xlabel('Salesman')
7 plt.ylabel('Sales')
8 plt._________()
```

Q.11: Choose the correct Python library out of following options in line 2

A. **matplotlib** **B. matplotlib.plot**
C. py.plot **D. matplotlib.pyplot**
Ans. D

Q.12: Choose the correct option to read the csv file in line 3

A. **read_csv** **B. pd.read_csv**
C. pd.get_csv **D. get_csv**

Ans B

Q.13: Choose the correct option to select the type of graph in line 4

A. **type** **B. kind**
C. style **D. graph**

Ans B

Q.14: Choose the correct word to give the heading in line 5

A. **label** **B. heading**
C. title **D. caption**

Ans C

Q.15: Choose the correct word to display the graph in line 8

A. **plot()** **B. display()**
C. showgraph() **D. show()**

Ans D

Case 2:

Abhishek uses computer and mobile for his personal use. Study the following cases and answer the questions given below.

(1) Once he got the message in Whatsapp that CBSE is announcing the result of class XII tomorrow at 12:00 pm. He forwarded the message to his few friends. But later he came to know that no such announcement was there in CBSE official web-site.
(2) He is visiting several web-sites.
(3) He is getting abuse messages from an unknown number due to which he is thinking of quarreling with that person.
(4) He registered himself in one website by giving his email id and phone number but later his friend told him about the concept of digital footprint. He is now thinking about canceling the registration so that his personal information can be deleted from that website.
(5) He uploaded one video in his youtube channel where he used one background music downloaded from somewhere on Internet

Q.16: In case (1), he is violating :

A. net etiquettes B. Communication etiquettes
C. copyright D. None of the above
Ans B

Q.17: In case (2) , he is leaving:

A. Active digital footprint B. Passive digital footprint
C. There is no chance of any digital footprint
D. None of the above
Ans B

Q.18: In case (3), the unknown person can be called as:

A. Cyber buller B. Internet troll
C. Hacker D. Cracker
Ans B

Q.19: In case (4) which one is correct:

A. His data will be deleted forever after cancelling the registration.
B. His data will be deleted after 30 days since it is a digital footprint.
C. His data will never be deleted since it became the digital footprint.
D. As per the terms and condition of that website, data will be deleted.
Ans C

Q.20: In case (5), he may be violating:

A. copyright B. Intellectual property right
C. plagiarism D. None of the above
Ans A

Q. 21:

Statement A : *pandas* is an open source Python library which offers high performance, easy-to-use data structures and data analysis tools.

Statement B : Professionals and developers are using the pandas library in data science and machine learning.

a. Both statements are correct.
b. Both statements are incorrect.
c. Statement A is correct, but Statement B is incorrect
d. Statement A is incorrect, but Statement B is correct
Ans A

Q. 22:

Statement A : Data visualization refers to the graphical representation of information and data using visual elements like charts, graphs and maps etc.

Statement B : To install matplotlib library we can use the command

```
pip install matplotlib.
```

a. Both statements are correct.
b. Both statements are incorrect.
c. Statement A is correct, but Statement B is incorrect
d. Statement A is incorrect, but Statement B is correct
Ans A

Q. 23:

Statement 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.

Statement B : 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 statements are correct.
b. Both statements are incorrect.
c. Statement A is correct, but Statement B is incorrect
d. Statement A is incorrect, but Statement B is correct
Ans A

Q. 24:

Statement A : An Internet troll is a person who deliberately sows discord on the Internet by starting quarrels or upsetting people.

Statement B : We can download and use any material available on the Internet.

a. Both statements are correct.
b. Both statements are incorrect.
c. Statement A is correct, but Statement B is incorrect
d. Statement A is incorrect, but Statement B is correct
Ans C

Q. 25:

Statement A : Social media are websites or applications that enable their users to participate in social networking but they cannot create and share content with others in the community.

Statement B : We should not waste precious time in responding to unnecessary emails or comments unless they have some relevance for us.

a. Both statements are correct. b. Both statements are incorrect
c. Statement A is correct, but Statement B is incorrect
d. Statement A is incorrect, but Statement B is correct **Ans D**

Q.No		Marks
1.	Ms. Hanu is a young girl who is on internet and social media. We need to help her to understand the netiquettes to be followed. Answer the following regarding this.	
i)	While creating a password for her mail which of the following is need to be strictly prohibited a) Using names and date of birth in the password b) Using mixture of Capital letters, numbers and special characters c) Use passwords of at least eight characters or more d) A strong password should look like a series of random characters. Ans. a)	1
ii)	Which of the following is suggested while browsing internet? a) Don't click on unknown links b) Don't save passwords c) Don't share personal information d) All the above Ans. d)	1
iii)	Which of the following can be called as cyber-crime? a) Stealing someone's computer b) Harassing someone over internet c) Downloading copyright free movies over internet d) Sending emails to known people Ans. b)	1
iv)	To avoid Digital footprint she should keep track of _____ a) Sites you visit b) links you click c) Browser history d) All the above Ans. d)	1
2.	Ms. Anu has invented a software to help blind people to read the books. But she is unaware of how to acquire ownership on the product. Answer the following to help her understand the basics of Intellectual Property Rights (IPR)	
i)	A person who is authorized keep or transfer rights to use/distribute the software is known as _____ a) Trademark b) Patent c) Copyright holder d) Plagiarism Ans. c)	1
ii)	____ gives you right to exclude others from making, selling, using or importing a particular product or service. a) Trademark b) Patent c) Copyright d) Plagiarism Ans. b)	1
iii)	A symbol, word, phrase, sound, color and design that is used to identify a product or an organization is _____ a) Trademark b) Patent c) Copyright d) Plagiarism Ans. a)	1

iv)	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 Ans. b)	1
v)	Suggest any one licensing organization to provide license to the software developed by Anu. a) GNU Lesser b) IEEE c) ISI d) ISO Ans. a)	1
vi)	FLOSS stands for _____ a) Free Liable Open Source Systems b) Free Libre Open Source Software c) Free License for Open Source Software d) Final License for Open Systems Software Ans. b)	1
3. i)	Mr. JK is writing a document on Cyber Crime. While writing he came to know about Plagiarism. Which of the following statements is/are true. Statement I: Plagiarism is using someone's work and not giving credit for it Statement II: Plagiarism is entering into someone's computer to steal data Statement III: Plagiarism is Criminal offence a) Statement I only True b) Both Statements I and III are True c) Statement II and III are False d) Statements I, II, III are True Ans. b)	1
ii)	To maintain Internet etiquette choose from the following options: Statement I: Use respectful language over chatting etc., Statement II: Share others personal information and photos Statement III: Fact check before reposting anything Statement IV: Never spam (Don't post something repeatedly) a) Statements I and II only True b) Statement III only True c) Statements I, III and IV are True d) Statements I, II are False Ans. c)	1
Iii)	Mr. Vasu has designed a Open source software which must comply with some criteria. Choose right statement in respect of above. Statement I: No restriction on re-distribution of the software as a part or whole Statement II: The integrity of the Author's source code must be maintained Statement III: The software can be sold after distribution a) Statement I is False b) Statements I and II are True c) Statements II and III are True d) Statements I, II and III are True Ans. b)	1

4	Choose from the following to help Mr. Vasu to understand about Cyber Security	
i)	Which of the following is True. Statement I: Phishing is catching fish in a game Statement II: Phishing is sending an email or text message sent to steal user's information such as Credit card data, Login credentials, Personal information Statement III: Phishing need not be targeted to a specific person or organization a) Statement I and II are only True b) Statement II only True c) Statements III only True d) Statements I, II and III are all True Ans. b)	1
II)	FSF Stands for_____ a) Free Software Foundation b) Free System Formation c) Final Software Freeware d) Final System Formation Ans. a)	1
5.	Ms. Anu who was browsing through a computer, and was hacked. Now she is investigating what might have happened. Answer the following to give her better understanding.	
i)	Which of the following statements are true. Statement I: Digital foot print is created due to sending emails, posting on social media etc., Statement II: Digital foot print is the one which follow your physical actions Statement III: Digital foot print lasts forever. a) Statement I only true b) Statements I & III are true c) Statement II only true d) All are true Ans. B)	1
ii)	Which of the following is true? Statement I: Hacking is compromising security on digital devices Statement II: Hacking is unauthorized copying of someone's literary work Statement III: Browser hijack is one type of Hacking Statement IV: Hacking involves stealing password and other digital information a) Statement I only true b) Statements I & II are true c) Statement II only true d) Statements I, III, and IV are True Ans. d)	1
iii)	Which of the following is true? Statement I: Firewall protects from unauthorized incoming traffic Statement II: Firewall can be implemented as both Software and Hardware Statement III: Firewall grants access to work with a device a) Statement I and II are only True b) Statement II is only True c) Statement I is only True d) Statements I, II and III are True Ans. a)	1
		1

iv)	Which of the following is True in case of Cyber stalkers Statement I: Cyber stalkers collect all personal information of the victim Statement II: Cyber stalkers keep on sending emails to threaten the victim Statement III: Cyber stalkers are people who save us from hackers Statement IV: Cyber stalkers post the email of victim on numerous filthy, obscene or illegal websites a) Statements I, II are True b) Statements I is only True c) Statements I, II and IV are True d) None of the above are True Ans. c)	
v)	Which of the following is true in case of Child Pornography Statement I: Images/movies or texts that depicts sexual activity of anyone under 18 years of age is Child pornography Statement II: IT ACT 2000 does not protect from Child Pornography Statement III: IT ACT section 67 is amended that browsing sites of Child Pornography is also an offence a) Statements I and III are True b) Statement II is only True c) Statement III is only True d) Statements II and III are True Ans. a)	1

Vetted By: Mahender Singh , PGT CS (KV NFC)

PREPARED BY: AVD PRASAD, PGT CS (KV No1 Vijayawada)

SECTION A: (Q NO 1 TO 10)

01. Which of the following is/are threats for electronic payment systems?
   a). Computer worms
   b). Computer virus
   c). Trojan horse
   d). All of the above

02. Firewalls are used to protect against --------
   a). data driven attacks
   b) fire attacks
   c) virus attacks
   d) unauthorized access

03. the act of copying another person's ideas, words or work and pretending they are your own is known as
   a. Plagiarism
   b. Licensing
   c. Open Source
   d. Bullying

04. Denoting software for which the original source code is made freely available and may be redistributed and modified is known as
   a. Proprietary S/W
   b. Open Source S/W
   c. Freeware
   d. Custom S/W

05. The practice of sending fraudulent communications that appear to come from a reputable source. It is usually done through email. The goal is to steal sensitive data like credit card and login information.

a. Bullying
b. Plagiarism
c. Phishing.
d. Licensing

06. 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.

07. Which of the following comes under cyber crime?

a. Theft of a brand new sealed Laptop
b. Access to a bank account for an unauthorized money transaction
c. Modification in a company's data with unauthorized access.
d. Photocopying a printed report.

08. Which is not a measure to recycle your e- waste safely.

a. Use certified e-waste recycler
b. Visit Civic institutions for recycling options.
c. Through it in water or dig them in earth.
d. Donate your electronics.

09. _____ is an electronic discovery technique used to determine and reveal technical criminal evidence.

a). Cyber forensics
b).. Auction Fraud
c) Identity theft
d) . Spoofing

10. Open source S/w out of the following.

a. Python
b. MS office
c. Windows
d. Kaspersk

Q11.

Statement 1: Digital footprint can be created and used with or without our knowledge

S**tatement 2**:Whenever we surf the Internet using smartphones, tablets, computers, etc., we leave a trail of data reflecting the activities performed by us online, which is our digital footprint

A) Both Statement 1 and 2 are True
B) Statement 1 is True but Statement 2 is False
C) Both Statement 1 and 2 are False
D) Statement 1 is False but Statement 2 is True

Q12.

Statement 1:The data taken from a digital footprint can be used for Hacking

Statement 2: Through Digital foot prints we leave our personnel signatures in websites.

A) Both Statement 1 and 2 are True
B) Statement 1 is True but Statement 2 is False
C) Both Statement 1 and 2 are False
D) Statement 1 is False but Statement 2 is True

Q13.

Statement 1: There are two kinds of digital footprints we leave behind when we use websites.

Statement 2: Active digital footprints which includes data that we intentionally submit online. passive digital footprints are the digital data trail we leave online unintentionally.

A) Both Statement 1 and 2 are True
B) Statement 1 is True but Statement 2 is False
C) Both Statement 1 and 2 are False
D) Statement 1 is False but Statement 2 is True

Q14.

Statement 1: Everyone who is connected to the Internet may not have a digital footprint.

Statement 2: As digital footprint will be saved in the Download folder.

A) Both Statement 1 and 2 are True
B) Statement 1 is True but Statement 2 is False
C) Both Statement 1 and 2 are False
D) Statement 1 is False but Statement 2 is True

Q15.

Statement 1: our society is inclined towards using more and more digital technologies, we end up managing most of our tasks digitally.

Statement 2: In this era of digital society, our daily activities like communication, social networking, banking, shopping, entertainment, education, transportation, etc., are increasingly being driven by online transactions.

A) Both Statement 1 and 2 are True
B) Statement 1 is True but Statement 2 is False
C) Both Statement 1 and 2 are False
D) Statement 1 is False but Statement 2 is True

SECTION C(Q NO 16 TO 20)

Case based Questions :Section B

Shreya is studying in class 12 in KV No1 Vijayawada. Due to pandemic she was unable to come to Vodyalaya physically. To attend the online classes her father has given his mobile phone to her with Internet connection.. Her father is a bank employee and used to his online transactions through the same mobile. After started using the smart phone and with Internet connection Shreya started creating her own accounts in different social web sites by using the same mail ID , which is used for Online classes. She has created her new login accounts in Face book , Twitter etc .with same Email Id , which she has to use for her Vidyalaya exams also. She use to upload her personnel photos in Social media and never log out from the social websites.She use to keep same password for all her Login IDs to remember easily. She use to Post and comment on Social web sites and after some time she use to remove it. Through out the day time she use to use her fathers Smart phone and during night times her father is using the same mobile for his office Transactions.

16. Which type of Digital Footprints Shreya is leaving in Websites.
A. Active Digital Foot prints.
B. Passive Digital Foot prints.
C. both of them .
D. None of the above.

17. Shreya is following all the social etiquettes as
A. She is Ethical
B. She is Responsible
C. She is Respectful.
D. None of the above

18. 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.

19. Shreya is getting repeated mails from unknown people. Everytime she goes online, he finds someone chasing him online.,Shreya is a victim of ……. :
A. Eavesdropping
B. Stolen identity
C. Phishing
D. Cyber stalking

20. Which is not a Network Etiquette .
A. Be Ethical
B. Be reliable
C. Be Responsible
D. Be Respectful

----------**X**----------

MARKING SCHEME:

XIII IP

Q NO.	SECTION : A	Q NO	SECTION: B SECTION: C Q11TO 15 Q16 TO 20
1	d). All of the above	11	A) Both Statement 1 and 2 are True
2	d) unauthorized access	12	B) Statement 1 is True but Statement 2 is False
3	a. Plagiarism	13	A) Both Statement 1 and 2 are True
4	b. Open Source S/W	14	C) Both Statement 1 and 2 are False
5	c. Phishing.	15	A) Both Statement 1 and 2 are True
6	c. Phishing.	16	B). Passive Digital Foot prints.
7	b and c	17	D)None of the above
8	c. Through it in water or dig them in earth.	18	A).Choose password wisely it should be the combination of Capital, small letters , numbers and special characters .
9	c. Through it in water or dig them in earth.	19	D).Cyber stalking
10	c. Through it in water or dig them in earth.	20	B).Be reliable

Assertion Based Questions

1. Assertion(A): The term “FREE SOFTWARE" means Freedom to use it
   Reason(R) : Sometimes you need to make payments for FREE Software

   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.

   Answer: c

2. Assertion(A): Open source software source code is available and the user can make modifications as per their need
   Reason(R) : Sometimes you need to make payments for open source Software

   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.

   Answer: a

3. Assertion(A): FLOSS is Open Source
   Reason(R) : FLOSS Source code is available for Free of cost

   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.

   Answer: a

4. Assertion(A): Permission given to use a product by the copyright holder is License
   Reason(R) : One should not use the copyrighted product without taking license

   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.

   Answer: a

5. Assertion(A): FSF is Non-Profit organisation to support free software development
   Reason(R) : FSF supports open software development also

   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.

   Answer: c

6. Assertion(A): **Intellectual property rights** are the rights given to persons over the creations of their minds.
   Reason(R) : **Intellectual Property Rights** protect the use of information and ideas that are of commercial value

   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.

   Answer: a

7. Assertion(A): The violation of **Intellectual property rights(IPR)** is called IPR infringement
   Reason(R) : Plagiarism is the form of IPR infringement

   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.

   Answer: a

8. Assertion(A): Copyright is the rights of the creator of work
   Reason(R) : Patent is rights given to inventor for inventions

   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.

   Answer: b

9. Assertion(A): The act of presenting someone else's work or idea as your own is Plagiarism
   Reason(R): Accessing someone's information without their permission is Plagiarism

   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.

   Answer: c

10. Assertion(A): Trademark generally protect logos, names and brands
    Reason(R) : Plagiarism is unethical because it is a form of theft

    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.

    Answer: a

CASE STUDY BASED QUESTIONS

CASE STUDY-1:

A School has taken 5 different software's for school management. The First software is available for free of cost and can be distributed any no of copies. For second software school has paid some money, in third software if necessary school can make some modifications if necessary and it may not be free, fourth software is freely available up to stipulated time after certain period school has to make payments and in Fifth Software school can make some modifications for free of cost.

11. First software is an example of
    a. Open Source b. Proprietary c. Free Software d. FLOSS
    Answer: c
12. Second software is an example of
    a. Open Source b. Proprietary c. Free Software d. Shareware
    Answer: b
13. Third software is an example of
    a. Shareware b. Proprietary c. Free Software d. FLOSS
    Answer: b
14. Fourth software is an example of
    a. Open Source b. Shareware c. Free Software d. FLOSS
    Answer: b
15. Fifth software is an example of
    a. Open Source b. Shareware c. Freeware d. FLOSS
    Answer: d

CASE STUDY-2:

In a school five students are doing different projects. **Anil** has done the project simply by copying someone's work and submitted as his own work. **Kumar** did all his work by using his own ideas & created new concept. While doing his work **Ravi** used someone's copyrighted material without their permission. **Tarun** has invented a new concept and applied for rights to the government. **Ramesh** has designed a new logo for his organisation.

16. What type of rights KUMAR gets automatically
    a. Patent b. Copyright c. Plagiarism d. Ownership
    Answer: b

17. What type of offence ANIL did ?
    a. Copyright Infringement b. Copyright c. Plagiarism d. Ownership
    Answer: c
18. What type of offence RAVI did ?
    a. Copyright Infringement b. Copyright c. Plagiarism d. Ownership
    Answer: a
19. Which type of rights TARUN will get from government?
    a. Trademark b. Copyright c. Patent d. Ownership
    Answer: c
20. What type of work RAMESH did for his organisation?
    a. Trademark b. Copyright c. Patent d. Ownership
    Answer: a

Name of the Teacher Prepared: T Sreenivasa Rao, KV Waltair
Name of the Teacher Vetted: J Kiran Kumar, KV NAD

PART-A

1.The garbage of electronic gadgets such as computer peripherals, laptop accessories, mobiles is known as _____.
(a) Electronic waste
(b) Electrical waste
(c) Garbage of Goods
(d)None of the above
2. In India, E-Waste management assumes greater significance because
(a) generation of own e-waste
(b)dumping of e-waste from developed countries
(c)lack of awareness
(d)All of these
3. WEEE stands for _____.
(a)Waste electrical and electronic equipment
(b) warehouse equipment of electrical and electronics.
(c)world explosion of electrical and electronics.
(d)none of the above.
4. Which of the following is one of the impacts of e-waste on the environment?
(a) Global Warming
(b) deforestation
(c)soil erosion
(d)emission of gases
5. Polluters pay Principle means
(a) anyone causing the pollution will pay for the damage caused
(b) polluters paid well by NGOs
(c) polluters may get a bonus
(d) polluters are not the cause of pollution
6. When circuits are burnt for disposals, it creates which of the following harmful chemicals?
(a) beryllium
(b) lead
(c)copper
(d) mercury

7. The _____ has issued guidelines for the proper handling and disposal of e-waste.
(a) central pollution control board
(b) central e waste management board
(c)waste management and maintenance authority
(d)all of the above
8. Which of the following reduces e-waste?
(a) purchasing more and more gadgets
(b) using them for a short time and then discarded
(c)good maintenance
(d) all of these
9. The plastic used in the electronic gadgets causes
(a) skin disease or allergies or increase the risk of lung cancer
(b) damages the immune system of the body and leads to stress and anxiety
(c)neurological disorders
(d)damage live and bones
10. The insulated wire has copper which causes _____
(a) skin disease or allergies or increase the risk of lung cancer
(b) can damage human's kidney, brain and human nervous system
(c)neurological disorders
(d) damage liver and bones

PART-B

1.While sitting in front of a computer always keep in mind
(a) Always take care of viewing distance and viewing angle
(b) Knee Angle and Seat Back angle should be a 90-degree angle
(c) The right position should be straight and with a 90 degree
(d) ALL OF THE ABOVE
2. Which of the following is feasible method to manage e- waste?
a) Reduce b) Reuse c) Recycle **d) All the above**
3. Which of the following is the effect of mismanaged e-waste
a) Global warming b) Air pollution c) Sea Pollution d) **All the above**
4.Which of the following are not contributors of e-waste in the world?
a) Refrigerators/freezers, washing machines, dishwashers
b) Personal computers, mobile phones
c) Gas cylinder
d) Televisions
5.Which of the following is relavant 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). None of the above
6.The cadmium used in semiconductors and registers can damage a human's
a). kidney, heart
b) Liver, bones & kidney
c) Neurological system
d) Human eyes
7.Who is responsible for the disposal of the product when it becomes e-waste?
a) The sellers
b) the producers
c) the customers
d) the vendors

8. Which department has issued a comprehensive technical guide on "Environmental Management for Information Technology Industry in India.

a) Department of Information Technology (DIT)

b) Department of Education

c) Department of Telecommunications

d) Department of Science & Technology

9. Management of E-Waste includes

I. Reduce the purchase of electronic devices

II. The discarded devices can be supplied or sold to someone who can use them

III. The e-waste which cannot be recycled can be repaired, refurbished or re-used.

A. Only I & III is correct

B. Only II & I is correct

C. Only I, II & III is correct

D. None of the above is correct

10.The techniques used in India for E-waste management?

I. According to Environmental Protection Act, 1986, anyone causing the pollution will pay for the damage caused.

II. The Central Pollution Control Board issues the guideline for proper disposal of E-Waste.

III. The guideline says that the manufacturer of the product will be responsible for the disposal of the product when it becomes e-waste.

A. ONLY I is correct
B. ONLY II is correct
C. BOTH I, II & III CORRECT
D. ONLY III is correct

ASSERTION REASON BASED TYPE QUESTIONS

Name of the Teacher Prepared: PRABHOD DINAKR P , PGT (CS)KV AFS SURYALANKA

Name of the Teacher Vetted : KURUVA KARUN,PGT (CS) KV KURNOOL

TOPICS: Data Protection, IPR, Plagiarism, licensing and copyrights

Question 1:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):

Assertion (A): Privacy of sensitive data can be implemented by encryption.

Reason(R): Encryption hides (Encodes) the details of the Actual data.

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

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true. (R) Is False

(4) (A) is False. (R) Is True

Answer is: (1)

Question 2:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):

Assertion (A): Privacy of sensitive data can be implemented by Authentication.

Reason(R): Authentication is the process of giving access to the data for all the users.

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

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true. (R) Is False

(4) (A) is False. (R) Is True

Answer is: (3)

Question 3:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):

Assertion (A): Intellectual Property refers to the inventions, literary and artistic expressions, designs and symbols, names and logos.

Reason(R): Intellectual Property is legally protected through copyrights.

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

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true. (R) Is False

(4) (A) is False. (R) Is True

Answer is: (2)

Question 4:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):

Assertion (A): Code of the software will be protected by a copyright

Reason(R): Copyright grants legal rights to creators for their original works like writing, photograph, audio recordings, video, sculptures, architectural works, computer software, and other creative works like literary and artistic work.

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

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true. (R) Is False

(4) (A) is False. (R) Is True

Answer is: (1)

Question 5:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):

Assertion (A): When a patent is granted, the owner gets an exclusive right to prevent others from using, selling, or distributing the protected invention.

Reason(R): A patent is usually granted for inventions.

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

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true. (R) Is False

(4) (A) is False. (R) Is True

Answer is: (2)

Question 6:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):

Assertion (A): apple symbol in IOS software will come under a registered trademark.

Reason(R): Trademark includes any visual symbol, word, name, design, slogan, label, etc., that distinguishes the brand or commercial enterprise, from other brands or commercial enterprises.

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

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true. (R) Is False

(4) (A) is False. (R) Is True

Answer is: (1)

Question 7:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):

Assertion (A): Plagiarism is Presenting someone else's idea or work as one's own idea or work.

Reason(R): Plagiarism is the one of the way of violation of intellectual property rights (IPR).

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

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true. (R) Is False

(4) (A) is False. (R) Is True

Answer is: (2)

Question 8:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):

Assertion (A): Users or companies who distribute GPL license works may charge a fee for copies or give them free of charge.

Reason(R): The GNU General public license (GPL) is a popular category of public licenses.

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

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true. (R) Is False

(4) (A) is False. (R) Is True

Answer is: (1)

Question 9:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):

Assertion (A): XYZ company making copies of the new movie DVD and send selling the copies without movie producer's permissions. XYZ Company was seized by the cyber police on complaint given by movie producer.

Reason(R): piracy of the content comes under cyber crime.

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

(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)

(3) (A) is true. (R) Is False

(4) (A) is False. (R) Is True

Answer is: (1)

Question 10:

Given below are two statements- one is labelled as Assertion (A) and another are labelled as Reason(R):
Assertion (A): Free and open source software (FOSS) has a large community of users and developers who are contributing continuously towards adding new features or improving the existing features.
Reason(R): Windows operating system comes under FOSS.
(1)Both (A) and (R) are true and (R) is the correct explanation of (A)
(2) Both (A) and (R) are true and (R) is not the correct explanation of (A)
(3) (A) is true. (R) Is False
(4) (A) is False. (R) Is True
Answer is: (3)

Case based Questions:

XYZ Company developed software, related to face recognition with a team of 15 software developers. XYZ company Registered the software with a face symbol to easily recognize their software. Before approval of software by the registering firm, Rohit one of the team member of the software published the same software in internet under different name as it is his own development.XYZ firm recognized this activity and informed to the police. The police people arrested the Rohit and removed the software from the internet. Police advice the XYZ firm to apply for patent as the software is a new invention.

11. XYZ firm registered the software with face symbol to easily recognize their software .in this context face symbol is called
(1) Copyright (2) IPR (3) Trademark (4) None of the above
Answer is: (3)
12 .The activities done by the Rohit is called as
(1) Plagiarism (2) copyright Infringement (3) Trademark Infringement (4) None of the above
Answer is: (1)
13. among the following options which is automatically granted to XYZ Company
(1)Trade mark (2) patent (3) Copyright (4) None of the above
Answer is 3:
14. Rohit activity comes under
(1) Hate Crime (2) Cyber crime (3) Fraud (4) none of the above
Answer is 2.

15. Patents are valid for how many years.
(1)10 (2) 12 (3)15 (4) 20
Answer is: 4

General MCQs

16. Match the following:

Column A	Column B
(a)Plagiarism	(i)Fakers, by offering special rewards or money prize asked for personal information, such as bank account information
(b) Hacking	(ii)Copy and paste information from the Internet into your report and then organise it
(c) Credit card fraud	(iii)The trail that is created when a person uses the Internet.
(d) Digital Foot Print	(iv)Breaking into computers to read private emails and other files

(1) a-i,b-iii,c-ii,d-iv

(2) a-ii,b-iii,c-i,d-iv

(3) a-ii,b-iv,c-i,d-iii

(4) a-ii,b-iii,c-iv,d-i

Answer is: 3

17. Intellectual Property is legally protected through

(1) Copyrights (2) patents (3) trademarks (4) All the above

Answer is: 4

18. Violation of intellectual property right may happen by

(1) Plagiarism (2) Copyright Infringement (3) Trademark Infringement (4) All the above

Answer is: 4

19. Which of the following Operating systems does not comes under FOSS

(1) Ubuntu (2) Fedora (3) Mac OS (4) Bharat OS

Answer is: 3

20. GPL is

(1) Government public license (2) Green public license (3) General public license (4) General Private license

Answer is: 3

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Name of the Teacher vetted: T SREENIVASA RAO ,PGT CS,K V WALTAIR VISAKHAPATNAM

PART 1 -ASSERTION AND REASONING QUESTIONS

Question no . 1

Assertion (A) : Pandas is a library of Python.

Reason (R) : Yes, we import pandas and can use functions of pandas like Series() and DataFrame() etc in python.

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

(B) Both A and R are true and 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.

Question no . 2

Assertion (A) : Pandas.head() is used to display first/top 5 records of any series/dataframe.

Reason (R) : It displays the last 3 rows.

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

(B) Both A and R are true and 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.

Question no . 3

Assertion (A) : import pandas as pd is used to import pandas library.

Reason (R) : It is a python library so it is to be imported for using its function.

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

(B) Both A and R are true and 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.

Question no . 4

Assertion (A) : Elements of Series can be accessed using positional index.

Reason (R) : positional index values ranges from 1 to n if n is the size of the series.

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

(B) Both A and R are true and 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.

Question no . 5

Assertion (A) : Dictionaries cannot be used to create a Series object.

Reason (R) : Dictionaries have key,value pairs and Series is a one dimensional data structure.

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

(B) Both A and R are true and 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.

Question no . 6

Assertion (A) : We cannot access more than one element of Series without slicing .

Reason (R) :More than one element of series can be accessed using a list of positional index or labeled index.

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

(B) Both A and R are true and 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.

Question no . 7

Assertion (A) : We cannot modify the values of Series elements once created .

Reason (R) : Series is an immutable object.

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

(B) Both A and R are true and 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.

Question no . 8

Assertion (A) : size attribute of Series objects returns length of series .

Reason (R) : count() will ignore the nan values in returning the output.

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

(B) Both A and R are true and 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.

Question no . 9

Assertion (A) : We can add two series objects using addition operator(+) or calling explicit function add() .

Reason (R) : While adding two series objects index matching is implemented and missing values are filled with NaN by default.

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

(B) Both A and R are true and 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.

Question no . 10

Assertion (A) : We can perform mathematical operations on two series objects of different size but not on two 1 D arrays of different size.

Reason (R) : if two series are not aligned NaN are generated but in case of arrays no concept of NaN and hence operations fail to perform.

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

(B) Both A and R are true and 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.

PART 2 –CASE BASED QUESTIONS

Consider the following two series objects S1 , S2

0 10
1 18

a 5
b 6

11. What will be the output of S1+S2

(A) 0 NaN
1 NaN
a NaN
b NaN

(B) 0 10
1 18
a 5
b 6

(C) 0 15
1 24

(D) a 15
b 24

12. Find the output of the given code.

```
import pandas as pd
s=pd.Series(['a','s','r'],index=[2,6,9])
print(s>='s')
```

(A) 2 False
6 False
9 True

(B) 2 False
6 True
9 False

(C) 2 False
6 False
9 False

(D) 2 True
6 False
9 True

Swaroop has created the following Series 'S'. He is facing problems to implement various operations as mentioned in following questions. Help him .

A	1002
B	545
C	688
D	2091
E	1428

13. How can he display the largest value for a given Series 'S'.

(A) print(S.sort_values(head(1)))

(B) print(S.sort_values.head(1))

(C) print(S.sort_values().tail(1))

(D) print(S.sort_values().tail())

14. How can he rename the index of the above Series 'S'.

(A) S.rename(index=['a','b','c','d','e'])

(B) S.renameindex=['a','b','c','d','e']

(C) S.index=['a','b','c','d','e']

(D) S.index(=['a','b','c','d','e'])

Rahul has created the following Series 'Sale' .

1	40.0
2	32.0
3	NaN
4	44.0
5	28.0
6	NaN
7	50

15.His manager asked him to count the missing or unknown values.choose the appropriate command for doing the same.

(A) Sale.size – Sale.count()

(B) len(Sale)-Sale.count()

(C) both are correct

(D) both are incorrect

16. How to alter the index of Series Sale to weekday names like sun,mon..etc.

(A) Sale.rename(index=['sun','mon','tue','wed','thu','fri','sat'])

(B) Sale.renameindex=['sun','mon','tue','wed','thu','fri','sat']

(C) Sale.index=['sun','mon','tue','wed','thu','fri','sat']

(D) Sale.index(['sun','mon','tue','wed','thu','fri','sat'])

17. How to reset sale to 0 in Series 'Sale'.

(A) Sale[::]=0

(B) Sale[:]=0

(C) Both A and B

(D) None of the above

18. How to display the sale between Tuesday to Friday

(A) print(Sale['tue':'fri'])

(B) print(Sale['tue':])

(C) print(Sale['tue':'sat'])

(D) print(Sale['tue' to 'fri'])

Consider the following Series 'S' and answer the questions below

0	8
1	4
2	12
3	16
4	15

19. What will be the correct command to display the following elements of 'S'.

0	8
2	12
4	15

(A) print(S[S%2==0])
(B) print(S[::2])
(C) print(S[S.index%2==0])
(D) Both C and B

20. How can we create a Series S1 based on S with all its elements doubled.

(A) S1=pd.Series(S*2)

(B) S1=pd.Series(data=S*2)

(C) S1=S*2

(D) All of the above

KEY

QNO	ANSWER	QNO	ANSWER
1	A	11	A
2	C	12	B
3	A	13	C
4	C	14	C
5	D	15	C
6	D	16	C
7	E	17	C
8	B	18	A
9	A	19	D
10	A	20	D

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[DATA VISUALIZATION]

Q1.	**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.	Ans
	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Both Statement A and B is correct.	4

Q2.	**Statement (A):** program to plot a quadratic equation using dashed line chart: -
	`import matplotlib.pyplot as plt`
	`import numpy as np`
	`xval=np.arange(-2,1,0.01)`
	`newyval=1-0.5*xval**2`
	`plt.plot(xval,newyval,'b--')`
	`plt.title('Example Plot')`
	`plt.xlabel('Input')`
	`plt.ylabel('Function value')`
	`plt.show()`
	Statement (B): 'b--' argument in plot function denotes that the line which will be displayed shall be of dashed type with blue colour.	

	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Both Statement A and B is correct.	4
Q3.	**Statement (A):** A Matplotlib figure can be categories into several parts as Axis, Artist, Labels, Title and Legend etc. **Statement (B):** Data is only as good as it is represented.	
	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Both Statement A and B is correct.	4
Q4.	**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.	
	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Both Statement A and B is correct.	3
Q5.	**Statement (A):** Bin are usually represented using rectangular bars with the length proportional to the values that they represent. **Statement (B):** They show what portion of the dataset falls into each category.	
	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Statement A is incorrect, but Statement B is correct	4

Q6.	**Statement (A):** The active figure can be saved to file using plt.savefig() method. **Statement (B):** The histogram created can not be saved through the GUI Panel.	
	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Statement A is incorrect, but Statement B is correct	3
Q7.	**Statement (A):** A line chart displays information as many series of data points called "Markers" connected by straight line segments. **Statement (B):** plot (), can not plot multiple lines in the same plot with different colour by default.	
	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Statement A is incorrect, but Statement B is correct	3

Q8.	**Statement (A):** This code will output chart with four bars
	`a=[3,6,9,12]`
	`b=[30,48,54,49]`
	`plt.xlim(-3,5)`
	`plt.bar(a,b)`
	`plt.show()`
	Statement (B): Limits to x axis have been set to -3 to 5 using plt.xlim().	

	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Both Statement A and B is incorrect.	4

Q9.	**Statement (A):** The following code does produce an error
	`import matplotlib.pyplot as plt`
	`data_std=[5,15,25,35,45,55]`
	`plt.hist(data_std,bins=[10,20,30,40,50,60],weights=[20,10,45,32,6,5,7],edgecolor='red')`
	`plt.show()`
	Statement (B): Data_std array and bins are of same size in the argument of hist() function.	

	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Statement A is incorrect, but Statement B is correct	4
Q10.	**Statement (A):** Matplotlib allows us to use different line style and colours. **Statement (B):** we specify colour and line style as the first argument of plot () function.	
	1. Statement A is correct. 2. Statement B is correct. 3. Statement A is correct, but Statement B is incorrect. 4. Statement A is incorrect, but Statement B is correct	3

CASE STUDY BASED QUESTIONS [DATA VISUALIZATION]		
Q. No.		**Ans**
1	Data visualization tools provide an accessible way to see and understand…….in data. a) Trends b) Outliers c) Patterns d) All of these	d
2	Which Python library programmer can use to create chart? a) pyplot b) pandas c) numpy d) None of these	a
3	A chart created using python library can be exported to image form or not? a) Yes b) No	a
4	Can the same data series be used to draw multiple charts? a) Yes B) No	a
5	If manager asks to create a chart with explode feature, which chart can be created by programmer in that case? a) Bar Graph b) Line Chart c) Pie Chart d) All of these	c
6	Which of the following method can be used to plot a Pie chart of the given case? a) Pl. Plot() b) Pl. Pie() c) Pl. Chart() d) Pl. Disc ()	b
7	Which of the following function can be used to set the title of the pie chart? a) plt. set Title() b) plt. heading() c) plt. title() d) none of these	c
8	School have 6 sections in Class XI Namely A, B, C, D, E and F. Students have voluntarily decided to collect amount section wise separately. Amounts collected by sections A to F are 5000, 6000, 5600, 7000, 6500 and 4900. Which of the data types can be used to arrange the collection amount and sections to be used with plotting function a) list b) dictionary c) stack d) none of these	a
9	Which of the following method can be used to add formatted slice percentage to Pie Chart? a) autopct b) slice c) labels d) colors	a
10	Which attribute of Pie chart is used to set the color of each slice? a) color b) colors c. cols d. autocolor	b

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Assertion and Reason based Questions [Cyber Security]		
Given below are two questions-One is labelled as Assertion (A) and other is labelled as Reason (R). In view of these statements' students need to choose the correct answer:		
1.	Read Statements 1 and 2 and select correct option Statement 1: Harassing using modern technologies like internet etc., is called **Cyber Bullying** Statement 2: **Cyber Bullying** is not a **Cybercrime** A) Both Statements 1 and 2 are True B) Statement 1 is True but Statement 2 is False C) Both Statements 1 and 2 are False D) Statement 1 is False but Statement 2 is True Ans) B	1
2.	Which of the following practices ensure confidentiality of information? Statement 1: Use of firewall where ever possible Statement 2: Browse privately where ever possible A) Both Statements 1 and 2 B) Statement 1 but not Statement 2 C) Neither Statement 1 nor 2 D) Statement 2 but not Statement 1 Ans) A	1

3.	What is correct about **Incognito browsing?** Statement 1: It opens up a version of the browser that will track your activity Statement 2: It is useful when entering sensitive data A) Both Statements 1 and 2 are correct B) Statement 1 is correct but not Statement 2 C) Both Statements 1 and 2 are not correct D) Statement 2 is correct but not Statement 1 Ans) D	1
4.	Which of the following you can use to safeguard Phishing and Pharming Attacks? Statement 1: Take your computer offline Statement 2: Do not click on links embedded in suspect messages A) Both Statements 1 and 2 B) Statement 1 but not Statement 2 C) Neither Statement 1 nor 2 D) Statement 2 but not Statement 1 Ans) A	1
5.	What is True about **virus** and **worm?** Statement 1: A virus does not need a host where as a worm needs a host Statement 2: Both virus and worm are not malicious programs A) Both Statements 1 and 2 are correct B) Statement 1 is correct but not Statement 2 C) Both Statements 1 and 2 are not correct D) Statement 2 is correct but not Statement 1 Ans) C	1
6.	A student who is a victim of cybercrime - Statement 1: Must report firstly to parents, school authorities and then to police Statement 2: Should keep it secret not to report anyone A) Both Statements 1 and 2 are True B) Statement 1 is True but Statement 2 is False C) Both Statements 1 and 2 are False D) Statement 1 is False but Statement 2 is True Ans) B	1
7.	What is true about India's IT Act and IT (Amendment) Act? Statement 1: IT Act 2000 provided legal recognition to electronic commerce Statement 2: IT (Amendment) Act 2008 provided additional focus on information security A) Both Statements 1 and 2 are True B) Statement 1 is True but Statement 2 is False C) Both Statements 1 and 2 are False D) Statement 1 is False but Statement 2 is True Ans) A	1
8.	Read Statements 1 and 2 and select correct option: *Statement 1:* ***Hacking*** is an attempt to exploit a computer system or a private network inside a computer **S**tatement 2: **Hacking** is the authorised access to or control over computer network security systems for some illicit purpose. A) Both Statements 1 and 2 are True B) Statement 1 is True but Statement 2 is False C) Both Statements 1 and 2 are False D) Statement 1 is False but Statement 2 is True Ans) B	1

9.	Read Statements 1 and 2 and select correct option: Statement 1: Cyberlaw is a generic term which refers to all the legal and regulatory aspects of Internet and the world wide web. Statement 2: Cyberlaw covers all aspects of transactions and activities on and concerning the Internet, the World Wide Web and Cyberspace. A) Statement 1 is False but Statement 2 is True B) Both Statements 1 and 2 are False C) Both Statements 1 and 2 are True D) Statement 1 is True but Statement 2 is False Ans) C	1
10.	Read Statements 1 and 2 and select correct option: Statement 1: Phishing is the practice of attempting to acquire sensitive information in a legal way Statement 2: Phishing acquires sensitive information without deception A) Statement 1 is False but Statement 2 is True B) Both Statements 1 and 2 are False C) Both Statements 1 and 2 are True D) Statement 1 is True but Statement 2 is False Ans) B	1
11.	Mr. Manoj who is a business man by profession faced following situations. Identify the type of crime for each situation/incident happened to him? (i) He was constantly receiving abusive emails (ii) He clicked on an unknown link received as a result his personal sensitive information was acquired by someone (iii) Derogatory messages were posted on him online (iv) His identity was used by someone to steal money (v) His laptop was controlled by somebody in an unauthorised way Ans) (i) Cyber Bullying (ii) Phishing (iii) Cyber Trolls (iv) Identity Theft (v) Hacking	5
	CASE STUDY BASED QUESTIONS [Cyber Security]	
12.	Mr. Vinod is the administrator of a school computer network. Help him to take appropriate decision to achieve computer security and safe online access. (i) Suggest a device to be used to filter network traffic to/from school network to provide network security (ii) Which software he can use to get protection from Viruses and Spyware (iii) Tell him what he has to disable if possible in browser so that online patterns are not tracked (iv) Suggest an active protection mechanism so that he can find a solution to spam (v) Suggest one active protection solution to PC Intrusion Ans) (i) Firewall (ii) Anti-Virus and Anti-Spyware software (iii) Cookies (iv) Anti-Spam software (v) Authorization/Authentication/Firewall	5