# नवोदय विद्यालय समिति

## N A V O D A Y A  V I D Y A L A Y A  S A M I T I

### PRE-BOARD (TERM–I) EXAMINATION :: 2021–22

Class : **XII**                                                    Time        : **1½ Hrs**

Subject: **Informatics Practices (065)**          Max. Marks    : **35**

---

**General Instructions:**

1.  **This question paper contains 3 (A, B and C) sections.**

2.  **Section A, consists of  25 Questions (1-25). Attempt any 20 questions**

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

4.  **Section C, consists of  6 case study based Questions (50-55). Attempt any 5 questions**

5.  **All questions carry equal marks**

---

1. Python Pandas was developed by
   a. Wes McKinney
   b. Michael Widenius
   c. Guido Van Rossum
   d. James Gosling

2. What does the command "pip" stands for?
   a. pip installs python
   b. python installs pip
   c. pip installs pandas
   d. pandas installs pip

3. Pandas DataFrame is :
   a. 1 Dimensional
   b. 2 Dimensional
   c. 3 Dimensional
   d. All of these

4. Which of the following resemble, "A collection of data values arranged in a specific pattern and the functions / operations that can be applied on data"
   a. Function
   b. Datatype
   c. Data Structure
   d. Keyword

5. The following is a Series object
   1   24
   2   65
   3   34
   dtype: int64

   What does int64 refers to?

   a. Each Series integer data element will be stored in 64 Bits memory
   b. All Series integer data elements will be stored in 64 Bits memory
   c. Each Series integer index element will be stored in 64 Bits memory
   d. All Series integer index elements will be stored in 64 Bits memory

6. Consider the following Series objects

| >>> srs1 | >>> srs2 | >>> srs3 | >>> srs4 |
|----------|----------|----------|----------|
| 1    15 | 1    22 | 2    25 | 1    52 |
| 2    8 | 2    11 | 4    3 | 3    30 |
| 3    10 | 3    7 | 6    14 | 5    41 |
| 4    4 | 4    6 | 8    9 | 7    14 |
| dtype: int64 | dtype: int64 | dtype: int64 | dtype: int64 |

Which of the following does not generates any error

a. srs1 > srs3
b. srs2 < srs4
c. srs1 >= srs2
d. srs1 <= srs4

7. Missing data in Pandas object is represented through _____?
   a. Null
   b. None
   c. NA
   d. NaN

8. The following is a dataframe with object name "**traindf**"

| | From | To | KM | Fare |
|------|-----------|---------|-----|--------|
| 1354 | Bangalore | Chennai | 450 | 483.50 |
| 2358 | Agra | Delhi | 250 | 285.25 |

   Which of the following returns the datatype of the column "Fare"?

   a. traindf.dtype
   b. traindf.Fare.dtype
   c. traindf.dtypes
   d. traindf.Fare.dtypes

9. To get numpy representation of a dataframe, _____ attribute may be used?
   a. size
   b. shape
   c. values
   d. ndim

10. Which of the following argument is used to make changes permanent in a dataframe, while performing some operations?
    a. inplace=True
    b. save=True
    c. change=True
    d. alter=True

11. Which of the following can be used to delete a column from a dataframe?
    a. del
    b. drop( )
    c. pop( )
    d. All of these

12. What is full form of CSV?
    a. Comma Sided Values
    b. Comma Separated Variables
    c. Colon Separated Values
    d. Comma Separated Values

13. Which of the following is used iterate over horizontal subsets of a dataframe?
    a. iterrows( )
    b. iteritems( )
    c. itercolumns( )
    d. iterindex( )

14. Which argument must be set with plotting functions for legend( ) to display the legends?
    a. data
    b. label
    c. name
    d. sequence

15. Which of the following is **false** in respect of Histogram?
    a. Range = Maximum Value – Minimum Value
    b. Width of Bin = Range / No. of Bins
    c. Intervals are Left Open Except last interval
    d. Intervals are Right Open except last interval

16. In "Interactive Tool Bar", which of the following is used to configure spacing in subplots?
    a. 
    b. 
    c. 
    d. 

17. _____ is a set of moral principles that governs the behaviour of a group or individual and regulates the use of computers.
    a. Copyright

b. Computer ethics

c. Property rights

d. Privacy law

18. Identify the odd one from the following
    a. Google Chrome
    b. Microsoft Office
    c. Linux
    d. VLC Player

19. FOSS stands for _____ ?
    a. Free and Open Software Secured
    b. Free and Open Source Software
    c. Foreign and Open Software Secured
    d. Foreign and Open Source Software

20. Which of the following is not a violation of IPR?
    a. Patent
    b. Copyright Infringement
    c. Trademark Infringement
    d. Plagiarism

21. Which of the following is the Indian Act that deals with cyber menaces?
    a. Indian Technology (IT) Act, 2000
    b. India's Digital Information Technology (DIT) Act, 2000
    c. The Information Technology Act, 2000
    d. Information Techware Act, 2000

22. Ransomware is a _____ ?
    a. Trademark Infringement
    b. Intellectual Property Right
    c. Cyber Crime
    d. E–Waste

23. The Junk e-mail is referred as _____?
    a. Inbox
    b. Draft
    c. Spam
    d. Footprint

24. For how long does a Patent protect an invention?
    a. 10 Years
    b. 20 Years
    c. 30 Years
    d. For ever

25. Which of the following is not an impact of e–waste on the environment?
   a. Air Pollution
   b. Soil Pollution
   c. Water Pollution
   d. Sound Pollution

26. Which of the following is used to get the number of dimensions of a Series object?
    a. ndimension
    b. size
    c. itemsize
    d. ndim
    e.

27. Which of the following is the right syntax to be used to name an already created Series?
    a. <seriesobject>•name = <Series_name>
    b. <seriesobject>•set_name = <Series_name>
    c. <seriesobject>•title = <Series_name>
    d. <seriesobject>•set_title = <Series_name>
    e.

28. Consider the following series object **"primesrs"**
    | 0 | 2 |
    |---|---|
    | 1 | 3 |
    | 2 | 5 |
    | 3 | 7 |
    | 4 | 11 |
    | 5 | 13 |
    | 6 | 17 |
    | 7 | 19 |

    Identify the correct statement to create the above Series?

    a. primesrs = pd.Series([2, 3, 5, 7, 11, 13, 15, 17], [1, 2, 3, 4, 5, 6, 7])
    b. primesrs = pd.Series([2, 3, 5, 7, 11, 13, 15, 17], range(0, 7))
    c. primesrs = pd.Series([0, 1, 2, 3, 4, 5, 6, 7], [2, 3, 5, 7, 11, 13, 15, 17])
    d. primesrs = pd.Series([2, 3, 5, 7, 11, 13, 15, 17])

29. Consider the following series object "studentmarks"
    | Sunanda | 69 |
    |---------|----|
    | Madhava | 65 |
    | Sudhama | 96 |
    | Kiran | 67 |
    | Pavan | 79 |

    Which of the following displays values less than 75?

a. studentmarks < 75
b. studentmarks[studentmarks<75]
c. [studentmarks(studentmarks<75)]
d. studentmarks[<75]

30. Mas. Preetam created a Series called S1 is like below
    S1 = pd.Series([2,4,6,8,10], [1,2,3,4,5])
    Now, another series S2 is created using existing series S1, like below
    S2=pd.Series(S1)

    Now, Mas. Preetam has written the following statement
    S1[3]=100

    Identify the correct choice from the following

    a. S1[3] only will be changed and S2[3] will never be changed
    b. S1[3] and S2[3] both will be changed
    c. S1[3] will not be changed and S2[3] will be changed
    d. Changing S1[3] is not possible and results in error

31. The following code generates an error. Identify the most suitable answer from the choices

    import pandas as pnd
    price_srs = pnd.Series([7600, 5600, 7000, 7000])
    price_srs.index = range(0, 5)
    print(price_srs)

    a. Error with import statement
    b. Duplicate values provided for the series object "price_srs"
    c. index is being assigned after creating the object "price_srs"
    d. range( ) function generates indexes with length mismatch of data
    e.

32. Which of the following creates an Empty Series
    a. pd.Series(empty)
    b. pd.Series(numpy.NaN)
    c. pd.Series( )
    d. All of these

33. Consider the below two series SeriesA and SeriesB.  What will be the output of SeriesA + SeriesB?

| >>> seriesA | >>> seriesB |
| --- | --- |
| a   1 | z   10 |
| b   2 | y   20 |
| c   3 | a   -10 |
| d   4 | c   -50 |
| e   5 | e   100 |
| dtype: int64 | dtype: int64 |

   a.   >>>SeriesA + SeriesB

      a   11
      b   22
      c   –7
      d   –46
      e   105
      dtype: int64

   b.   >>>SeriesA + SeriesB

      z   11
      y   22
      a   –7
      c   –46
      e   105
      dtype: int64

   c.   >>>SeriesA + SeriesB

      0   11
      1   22
      2   –7
      3   –46
      4   105
      dtype: int64

   d.   >>>SeriesA + SeriesB

      a   –9.0
      b   NaN
      c   –47.0
      d   NaN
      e   105.0
      y   NaN
      z   NaN
      dtype: float64

34. Given a DataFrame df as below:

|   | A  | B  | D  |
|---|----|----|----|
| 0 | 15 | 17 | 19 |
| 1 | 16 | 18 | 20 |
| 2 | 20 | 21 | 22 |

Which of the following is used to change the index column to "A"?
a. df.change_index('A')
b. df.reindex('A')
c. df.set_index('A')
d. df.reset_index('A')

35. Consider the following dataframe '**onlineclass**', with Boolean indexes

|       | Name    | Class |
|-------|---------|-------|
| True  | Kiran   | 10    |
| False | Sunil   | 12    |
| True  | Shiva   | 9     |
| True  | Lakshmi | 10    |
| False | Rajani  | 12    |
| True  | Vinith  | 11    |

Which of the following statement displays the data with the Boolean index **True**?
a. onlineclass.loc['True ']
b. onlineclass['True ']
c. onlineclass.loc[True]
d. onlineclass[True]

36. Assuming the name of the DataFrame as **dfEmp**, what is the correct syntax to return the dataframe data in reverse order of rows?
a. dfEmp[::–1]
b. dfEmp.reverse( )
c. print(dfEmp, ascending=False)
d. dfEmp[–1::]

37. Given a DataFrame **studf** as below:

|   | Sub1 | Sub2 | Sub3 |
|---|------|------|------|
| 1 | 85   | 87   | 49   |
| 2 | 26   | 18   | 50   |
| 3 | 40   | 51   | 62   |

Which of the following replaces the value 18 with 33?

a. studf.loc['Sub2 ', 2] = 33
b. studf.iloc[2, 'Sub2 '] = 33
c. studf['Sub2 '][2] = 33
d. None of these

38. To display the details of 'January' month along with the number of passengers from the below dataframe 'df', identify the correct statement?

|   | Month | Passengers |
|---|-------|------------|
| 0 | Jan   | 25         |
| 2 | Feb   | 35         |

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

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

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

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

39. In the following statement a dataframe is being created using a CSV file
        student=pd.read_csv("d:\studf.csv")

In the above statement, which of the following is the DataFrame Object?

a. studf
b. read_csv
c. pd
d. student

40. In a line chart, to generate a dashed line style (– – – – –) which of the following is used?
a. –
b. – –
c. – .
d. :

41. While plotting, the colour code 'b' represents which of the following colour?
a. black
b. blue
c. brown
d. green

42. Which argument of bar( ) function, allows to set the thickness of bar?
    a. dense
    b. barwidth
    c. thickness
    d. width

43. Kum. Yasasvi is planning to go for a vacation.  She surfs the internet to get answers for the following queries

    (A) Weather Conditions      (B) Availability of Air Tickets and Fares
    (C) Places to visit          (D) Best hotel deals

    Which of the above actions might have created a digital foot print?

    a. A and B
    b. C and D
    c. All of these
    d. None of these

44. Smridh has recently changed his school so he is not aware of the people, but someone is posting negative, demeaning comments on his social media profile. He is also getting repeated mails from unknown people. Every time he goes online, he finds someone chasing him online.
    The action that Smridh should take:

    a. He should ONLY share with his friends
    b. He should NOT share with anyone as it can cause serious problem
    c. He should immediately report to the police
    d. He should bring to the notice of his parents and school authorities.

45. The act of fraudulently acquiring someone's personal and private information, such as online account names, login information and passwords is called as _____?
    a. Phishing
    b. Fraud
    c. Scam
    d. Plagiarism

46. Mr. A had downloaded some pictures of Mr. B from his facebook account and created a facebook account in the name of Mr. B, by providing Mr. B's photo as profile picture and sent friend requests to others.  This activity is referred as
    a. Digital Footprint

b. Plagiarism
c. Identity Theft
d. Eavesdropping

47. Suhana is down with fever. So, she decided not to go to school tomorrow. Next day, in the evening she called up her classmate, Shaurya and enquired about the computer class. She also requested him to explain the concept. Shaurya said, "Mam taught us how to use tuples in python". Further, he generously said, "Give me some time, I will email you the material which will help you to understand tuples in python". Shaurya quickly downloaded a 2-minute clip from theInternet explaining the concept of tuples in python. Using video editor, he added the text "Prepared by Shaurya" in the downloaded video clip. Then, he emailed the modified video clip to Suhana. This act of Shaurya is an example of _____?
a. Fair use
b. Hacking
c. Copyright infringement
d. Cyber crime

48. Sourabh has to prepare a project on "Digital India Initiatives". He decides to get information from the Internet. He downloads three web pages (webpage 1, webpage 2, webpage 3) containing information on Digital India Initiatives.

He downloaded three images of from webpage 2. He made a collage for his project using these images. Which of the following refers this act?
a. Plagiarism
b. Copyright Infringement
c. Intellectual Property Right
d. Digital Footprint

49. Mas. Vinay, is providing a password while creating his mail id. Which of the following is best one for setting password?

a. Providing his First Name or Last Name that was given while creating mail id
b. Providing his mobile number
c. Providing his family member(s) name(s)
d. Providing combination of Uppercase and Lowercase letters, digits and special symbols with considerable length

Consider the following DataFrame 'Sales' and answer the MCQs

|        | 2014  | 2015  | 2016   | 2017  |
|--------|-------|-------|--------|-------|
| Madhu  | 100.5 | 12000 | 20000  | 50000 |
| Kusum  | 150.8 | 18000 | 50000  | 60000 |
| Kinshuk| 200.9 | 22000 | 70000  | 70000 |
| Ankit  | 30000 | 30000 | 100000 | 80000 |
| Shruti | 40000 | 45000 | 125000 | 90000 |

50. Which of the following displays the first two columns of 'Sales'
    a. Sales.head(2)
    b. Sales[[2014, 2015]]
    c. Sales.columns(2)
    d. Sales[2014, 2015]

51. What will be output for the statement Sales.shape
    a. [5, 4]
    b. [5, 4)
    c. (5, 4]
    d. (5, 4)

52. Identify the statement that prints first two rows of the dataframe
    a. Sales.head(–3)
    b. Sales.tail(2)
    c. Sales.tail(–3)
    d. Sales.head(–2)

53. Identify the statement that changes the label 'Kinshuk' to 'Sridhar'
    a. Sales.rename(index={'Kinshuk' : 'Sridhar'})
    b. Sales.rename(index={'Sridhar' : 'Kinshuk'}
    c. Sales.rename(columns={'Sridhar' : 'Kinshuk'}
    d. Sales.rename(columns={'Kinshuk' : 'Sridhar'})

54. Which of the following statement is used to display the dataframe in descending order
    of the column 2016
    a. Sales.sort_values(2016, descending=True)
    b. Sales.sort_values(2016, ascending=False)

  c. Sales.sortvalues(2016, descending=True)
  d. Sales.sortvalues(2016, ascending=False)

55. Which of the following statement will adds a new row with the index 'Prem'
  a. Sales['Prem']=[50000, 60000, 70000, 80000]
  b. Sales.at['Prem']=[50000, 60000, 70000, 80000]
  c. Sales.['Prem']=[50000, 60000, 70000, 80000]
  d. Sales.iat['Prem']=[50000, 60000, 70000, 80000]