TEST LINK: https://forms.gle/FkUXUGizD14UWxym6

1. Python is a ?
    a. Compiler Based Language
    b. JVM Based Language
    c. Interpreter Based Language

2. Why do we prefer python for machine learning?
    a. Easy data base access
    b. Large Community to support
    c. Easy to learn
    d. Readily available libraries
    e. Others

3. Find the Output of the following:

```
import numpy as np
a = np.arange(10)
print(a[2:])
```

4. Write Code to retrieve only the state column?

```
import pandas as pd
data_1 = {'state' : ['VA', 'VA', 'VA', 'MD', 'MD'],
          'year' : [2012, 2013, 2014, 2014, 2015],
          'pop' : [5.0, 5.1, 5.2, 4.0, 4.1]}
df_1 = pd.DataFrame(data_1)
df_1
```

	state	year	pop
0	VA	2012	5.0
1	VA	2013	5.1
2	VA	2014	5.2
3	MD	2014	4.0
4	MD	2015	4.1

5. What is the output of the following?

```
x = ['ab', 'cd']
for i in x:
  x.append(i.upper())
  print(x)
```

    a. [‘AB’, ‘CD’]
    b. [‘ab’, ‘cd’, ‘AB’, ‘CD’]
    c. [‘ab’, ‘cd’]

d. none of the mentioned

6. What is the output of the following?

```
i = 1
while True:
  if i%3 == 0:
    break
    print(i)
    i + = 1
```

a. 1 2
b. 1 2 3
c. Error
d. none of the mentioned

7. What is the output of the following?

```
i = 1
while True:
  if i%2 == 0:
    break
    print(i)
  i += 2
```

a. 1
b. 1 2
c. 1 2 3 4 5 6 …
d. 1 3 5 7 9 11 …

8. What is the output of the following?

```
True = False
while True:
  print(True)
  break
```

a. True
b. False
c. NaN
d. none of the mentioned

9. What is the output of the following?

```
print('*', "abcde".center(6), '*', sep='')
```

a. * acde *
b. * abcde
c. *abcde *
d. * abcde*

10. Which of the following is an invalid statement?

a. abc = 1,000,000
b. a b c = 1000 2000 3000
c. a,b,c = 1000, 2000, 3000
d. a_b_c = 1,000,000

11. What is the output of the following?

```
x = "abcdef"
i = "a"
while i in x[1:]:
  print(i, end = " ")
```

a. a a a a a a
b. a
c. error
d. no output

12. Suppose list1 is [2, 33, 222, 14, 25],
What is list1[-2] ?
a. 33
b. 2
c. 222
d. 25
e. none of the above

13. What is the output of the following?

```
X=['ab','cd']
print(len(map(list, x)))
```

a. 2
b. A TypeError occurs as map has no len().
c. 4
d. No Error but no output

14. What is the output of the following?

```
x = ['ab', 'cd']
print(len(list(map(list, x))))
```

a. 2
b. 4
c. 0
d. A TypeError occurs as map has no len().
e. None of the above

15. Which of the following is not the correct syntax for creating a set?
a. set([[1,2],[3,4]])
b. set([1,2,2,3,4])
c. set((1,2,3,4))
d. {1,2,3,4}

16. Which of the following is the output of the statement below?

```
list(filter(lambda x:x>5,range(8)))
```

a. [6, 7, 8]
b. [5, 7]
c. [7, 8]
d. None of the above

17. Which of the following is the output of the statement below?

```
list(map(lambda x:x**2,range(8)))
```

a. [0, 1, 4, 9, 16, 25, 35, 49]
b. [0, 1, 4, 9, 16, 25, 36, 48]
c. [0, 1, 5, 9, 16, 25, 36, 49]
d. [0, 1, 4, 9, 16, 25, 36, 49]
e. [0, 1, 4, 9, 15, 25, 36, 49]

18. Create a numpy vector with values ranging from 10 to 49 . a = ?

a. np.arange(10,50)
b. a=np.arange(10,50)
c. a = np.arange(10,50)
d. np.range(10,50)
e. a=np.range(10,50)
f. a = np.range(10,50)

19. Create a 5x5 identity matrix. a=? import numpy as np

a. np.eye(5)
b. np.identity(5)
c. np.eye(5,5)
d. pd.eye(5,5)
e. np.identi(5)

20. What is the shape of the given matrix?

```
earnings = [
    [
     [500,505,490],
     [810,450,678],
     [234,897,430],
     [560,1023,640]
     ],
     [[600,605,490],
      [345,900,1000],
      [780,730,710],
      [670,540,324]
      ]
    ]
```

a. 2,3,4
b. 4,3,2
c. 2,2,2
d. 3,3,3
e. 4,4,4
f. 2,4,3
g. 3,4,2
h. 2,4
i. 4,3

21. Create a DataFrame df from this dictionary data which has the index labels. Select all that is correct.

```
import pandas as pd
data = {'animal': ['cat', 'cat', 'snake', 'dog', 'dog', 'cat',
'snake', 'cat', 'dog', 'dog'],
'age': [2.5, 3, 0.5, np.nan, 5, 2, 4.5, np.nan, 7, 3],
'visits': [1, 3, 2, 3, 2, 3, 1, 1, 2, 1],
'priority': ['yes', 'yes', 'no', 'yes', 'no', 'no', 'no', 'yes',
'no', 'no']}
labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']
```

a. df = pd.DataFrame(data, index=labels)
b. df=pd.DataFrame(data,index=['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j'])
c. df=pd.concat(data,index=['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j'])
d. df = pd.concat(data, index=labels)

22. Select just the 'animal' and 'age' columns from the DataFrame df. [BASED ON QUESTION 21]
    a. df.loc[:, ['animal', 'age']],
    b. df[['animal','age']]
    c. df.iloc[:,0:2]
    d. df.iloc[:, ['animal', 'age']],
    e. df.loc[:,0:2]

23. Change the age in row 'f' to 1.5. [BASED ON QUESTION 21]
    a. df.loc[: , 'age'] = 1.5
    b. df.iloc['f', 'age'] = 1.5
    c. df.loc['f', 'age'] = 1.5
    d. None of the above

24. Calculate the mean age for each different animal in df. [BASED ON QUESTION 21]
    a. df.groupby['animal']['age'].mean()
    b. df.groupby('animal')['age'].sum()
    c. df.groupby('animal')['age'].mean()
    d. Option 4

25. Count the number of each type of animal in df. [BASED ON QUESTION 21]

26. Complete the Exercise 1 and upload your solution
    LINK: https://github.com/Laxminarayen/Inceptez-DS-Batch20/tree/main/Test/Apple%20Stock

27. Complete the Exercise 2 and upload your solution
    LINK: https://github.com/Laxminarayen/Inceptez-DS-Batch20/tree/main/Test/Investor_Flow_of_Funds_US

28. Complete the Exercise 3 and upload your solution
    LINK: https://github.com/Laxminarayen/Inceptez-DS-Batch20/tree/main/Test/Wine

29. Write a function which accepts n as a parameter and returns the smallest divisor of n