1. Which of the following is a python program extension?
   - .json
   - .c
   - .py
   - .p
2. IoT stands for _____
   - Internet of Things.
   - Internet for Teaching.
   - All of the above.
   - Input Output Technology.
3. Cloud computing and fog computing have the same concept.
   - True
   - False
4. In the second part of the course, which python environment will be used?
   - Jupyter
   - VScode
   - IDLE
   - As I like
5. what is the output? print ('2' + '2')
   - ✓ 22
6. Python is a scripting language.
   - True
   - False
7. Select the true statements (Select two)
   - Python is free, open-source, and multiplatform
   - Python is a good choice for creating and executing tests for applications
   - Python is faster compared to c++
   - Python2 is compatible with Python3
8. What is the output? print (2 ** 2 ** 3)
   - ✓ 256
9. Functions in Python can come from (Select more than one answer if needed)
   - Built-in
   - import from another languages like c++
   - own functions
   - modules
10. This code has no error.

```
x = input ('Enter a number')
y = x + 1
print (y)
```

   - True
   - False
11. Usually, Interpreter is faster than the complier.
   - True
   - False

12. Select the true statements about compilation (Select two)
- You need a complier to run the code
- The code is converted directly into machine code executable by the processor
- It tends to be slower than interpretation
- It tends to be faster than interpretation

13. What do you call a file containing a program written in a high-level programming language?
- A target file
- A machine file
- A code file
- A source file

14. Computers have a native language; just like us. Computers' native language is called Machine Learning.
- True
- False

15. You want to invoke the function `make_money()` contained in the module named `mint`. Your code begins with the following line:

```
from mint import make_money
```

What is the proper form of the function's invocation?
- make_money
- make_money()
- All the above
- mint.make_money()

16. How to get information about a package in python
- All the above.
- pip --version will tell you that.
- pip3 --version will tell you that.
- pip show package will tell you that.

17. A PWG-lead repository, collecting open-source Python code, is called:
- PyRep
- PWGR
- PyPI
- PyCR

18. How to uninstall a package named pygame?
- ✓ pip uninstall pygame

19. What is the expected output of the following code?

```
for ch in "abc":
    print(chr(ord(ch) + 1), end='')
```

- bcd
- 97 98 100
- Error
- abc

20. You want to invoke the function `make_money()` contained in the module named `mint`. Your code begins with the following line:

```
import mint
```

What is the proper form of the function's invocation?

- mint.make_money
- make_money()
- mint.make_money()
- All the above

21. Python is completely internationalized - we can use UNICODE characters inside our code, read them from input and send to output.

- True, because Python 3 is Ascii.
- All the above
- True, because Python 3 is I18N.
- True, because Python 3 is UCS-4

22. The name pip comes from:

- all the above
- package in package
- pip install packages
- python internal packages

23.

```
abc
|__
    def
        |__ mymodule.py
```

Assuming that `D:\Python\Project\Modules` has been successfully appended to the `sys.path` list, write an import directive letting you use all the `mymodule` entities.

- All the above
- import mymodule.py
- import abc.def.mymodule
- from abc import *

24. What is the expected output of the following code?

```
the_list = ['Where', 'are', 'the', 'snows?']
s = '*'.join(the_list)
print(s)
```

- Error, it is immutable
- Where*are*the*snows
- Where*are*the*snows?
- Where are the snows?

25. What is the expected result of the following code?

```
s1 = '12.8'
i = int(s1)
```

```
s2 = str(i)
f = float(s2)
print(s1 == s2)
```

- Error
- ValueError
- True
- False

26. Which one of the following is true?
    - Modules can contain packages.
    - Packages can contain modules.
    - Modules can contain modules.
    - All the above.

27. The version of Python I have is 3.7 and there are many packages in the system, but pip list does not work, what would be the reason?
    - pip is not installed.
    - The path is not set correctly.
    - You should use pip3 list.
    - I need more information to answer this question.

28. write a line to import pi from math as PI
    - ✓ from math import pi as PI

29. In the procedural approach, the data can use the functions.
    - True
    - False

30. If we assume that pythons, vipers, and cobras are subclasses of the same superclass, how would you call it?
    - Cars
    - All the above
    - People
    - Snake or reptile

31. Is there something missing in the following code?

```
class Snakes
    def __init__():
            self.sound = 'Sssssss'
```

- The __init__() constructor lacks the obligatory parameter (we should name itself to stay compliant with the standards).
- Calling the super class.
- Nothing is missing.
- self.__sound = 'Sssssss'

32. choose the correct answer.

```
class Python:
    population = 1
    victims = 0
    def __init__(self):
        self.length_ft = 3
        self.__venomous = False
```

- population and victims are class variables
- population and __venomus are class variables
- population and victims are instance variables
- length and __venomous are class variable

33. What is the name of the most general of all Python exceptions?

- Except
- MemoryError
- BaseException
- AssertionError

34. Can you name one of your classes just "class"?

- Yes, I can and why not?
- I can, but there is no need for that.
- No, class is a function.
- No, class is a keyword.

35. What is the output?

```
class Snake:
    pass
class Python (Snake):
    pass
print (Python.__name__, 'is a', Snake.__name__)
print (Python.__bases__[0].__name__, 'can be', Python.__name__)
```

- Error
- Python is a Snake Snake can be Python
- Python is a Python Snake can be Python
- Python is a Snake Snake can be Snake

36. The priority of **ZeroDivisionError** is higher than the **ArithmeticError** in the Exceptions-tree, that is why the Arithmetic error should be always before the ZeroDivisionError.

- True
- False

37. Write only one line.

Assuming that there is a class named `Snakes`, write the very first line of the `Python` class declaration, expressing the fact that the new class is actually a subclass of Snake.

- class Python(Snakes):

38. What is the output of the following snippet? (Assume the file is NOT exist)

```
import errno
try:
    stream = open("file", "rb")
    print("exists")
        stream.close()
except IOError as error:
    if error.errno == errno.ENOENT:
        print("absent")
    else:
        print("unknown")
```

- unknown
- absent
- exists
- errno.ENOENT → No such file or directory

39. What is the problem with this program? If there is!

```
from datetime import timedelta
from datetime import date
from dateTime import datetime
delta = timedelta(weeks=2, days=2, hours=2)
print(delta)
delta2 = delta * 2
print(delta2)
d = date(2019, 10, 4) + delta2
print(d)
dt = datetime(2019, 10, 4, 14, 53) + delta2
print(dt)
```

- we should use try except form
- No problem found, it is working
- we should write from datetime import *
- dateTime no such module

40. What is the expected output of the following code?

```
import math
try:
    print(math.sqrt(9))
except ValueError:
    print("inf")
else:
    print("fine")
```

- Error
- fine
- 3.0 fine
- 3.0

41. Write a **lambda** function, setting the least significant bit of its integer argument, and apply it to the map() function to produce the string 1 3 3 5 on the console.

```
any_list = [1, 2, 3, 4]
even_list = # Complete the line here.
print(even_list)
```

Hint: the " opertation does the following :

```
even | 1 = even + 1
odd | 1 = odd
```

- ✓ list(map(lambda n: n | 1, any_list))

42. What is the output

```
foo = [i + i for i in range(5)]
print (foo)
```

- 0 2 4 6 8
- [1 , 3, ,5 7, 9]
- [0. 2. 4 .6 .8]

43. You're going to process a bitmap stored in a file named image.png, and you want to read its contents as a whole into a *bytearray* variable named image. Add a line to the following code to achieve this goal.

```
try:
  stream = open("image.png", "rb")
  # Insert a line here.
    stream.close()
except IOError:
   print("failed")
else:
   print("success")
```

- ✓ image=bytearray(stream.read())
- ✓ image = bytearray(stream.read())
- ✓ image = bytearray(stream.read ())

44.

```
x = lambda a, b: a ** b
print (x (2, 10))
```

- Error
- 1024
- 2222222222222

45. What is the output of the following snippet?

```
import calendar
print(calendar.weekheader(1))
```

- ✓ M T W T F S S

46. What is the meaning of the value represented by errno.EACESS?

- ✓ No such file or directory
- ✓ Bad file number

- ✓ Permission denied
- ✓ Too many open files

47. What is the expected output of the following code?

```
import math
try:
    print(math.sqrt(-9))
except ValueError:
    print("inf")
else:
    print("fine")
finally:
    print("the end")
```

- fine the end
- fine
- inf the end
- inf

48. What is the output of the following snippet?

```
from datetime import datetime
dt1 = datetime(2020, 9, 29, 14, 41, 0)
dt2 = datetime(2020, 9, 28, 14, 41, 0)
print(dt1 - dt2)
```

- ✓ 1 day, 0:00:00

49. What is the output of the following snippet?

```
from datetime import time
t = time(14, 39)
print(t.strftime("%H:%M:%S"))
```

- 14:53
- strftime is not defined
- 14:53:00
- Error

50. How do you encode an `open()` function's `mode` argument value if you're going to create a new text file to only fill it with an article?

- ”wb”
- "rt"
- "wt" or "w"
- "rt" or "r

51. To import a csv file to a database in python, the _____- is used

- csvkit
- sql
- database sqlite3
- all the above

52. Matplotlib is used in python to get a data frame.

- True
- False

53. What is the purpose of this code?
!apt-get update
!apt-get -y install sqlite3

- Install sqlite3 and -y is for yes during the installation process.
- update and install database
- Install sqlite3 and -y is needed in ubuntu only.
- Install sqlite3 and -y is an option means in your machine.

54. give a command line to connect a database named (python+bigdata.db) using python and sqlite3. Assume that everything in installed and imported
conn =

- ✓ conn = sqlite3.connect('python+bigdata.db')

55. BigData is more relevant to IoT.

- True
- False

56. To iterate in a database, we need t cursor() method to be assigned after the connection (conn)
for example : cur = conn.cursor()

- True
- False

57. From jupyter, install the csvkit (hint, use pip)

- ✓ !pip install csvkit

58. Which of the following is not in the data analysis steps?

- Use Python
- Prepare Data
- Make Decisions
- Choose a Model

59. speedtest-cli is a tool used to measure the speed of the internet, but it only works if the ping command works.

- True
- False

60. process for collecting data from a variety of sources, transforming the data, and then loading the data into a database

- Gather Data
- import data using pandas
- ETL
- deal with data using sqlite3

61. Add a new column called **rounded** to the dataframe and populate it with rounded weights, the name of the dataframe is **da** it has the following data, note the round is 2 wieght
0 1.00000
1 2.00000
2 3.00000
3 4.00000

- data['rounded'] = data.weight.round(2)
- da['rounded'] = da.weight.round(2)
- data['rounded'] = data.weight.lambda (2)(2)
- data['rounded'] = data.weight.Round(2)

62. Install a module call seaborn from jupyter

- ✓ !pip install seaborn

63. An example of numerical variable is weight or blood pressure.

- True
- False

64. To find the correlation for a data file imported in pandas as BB, you can use a method like:

- brainFrame.corr()
- BB.corr()
- brainFrame.corr(method='pearson')
- BB.describe()

65. Heat map is used to visualize the correlation for a dataframe!

- True
- False

- 66. Which method would you use to view table statistics? for a data frame called Data?

weight	
count	10000.000000
mean	20.499212
std	0.199874
min	19.752000
25%	20.365000
50%	20.500000
75%	20.635000
max	21.171000

- All can be used
- Data.head()
- Data.dtype
- Data.describe()

67. To change the datatype of a column called **ping** in a data frame alled **df_compact_clean**, you can use a lambda function in this way
df_compact_clean['Ping (ms)_float'] = df_compact_clean['Ping (ms)'].apply(lambda val: float(val))

- True
- False

68. Write a command to view the five 5 lines of the dataframe imported by pandas as **brain.**
   - ✓ brain.head()
   - ✓ brain.head(5)

69. What is this table for?

	FSIQ	VIQ	PIQ	Weight	Height	MRI_Count
FSIQ	1.000000	0.946639	0.934125	-0.051483	-0.086002	0.357641
VIQ	0.946639	1.000000	0.778135	-0.076088	-0.071068	0.337478
PIQ	0.934125	0.778135	1.000000	0.002512	-0.076723	0.386817
Weight	-0.051483	-0.076088	0.002512	1.000000	0.699614	0.513378
Height	-0.086002	-0.071068	-0.076723	0.699614	1.000000	0.601712
MRI_Count	0.357641	0.337478	0.386817	0.513378	0.601712	1.000000

   - ✓ this is the output of describe() method in pandas
   - ✓ The is the correlation for a dataframe.
   - ✓ this is a dataframe file.
   - ✓ This is output of head() method in pandas

70. df_compact_clean = df_compact_clean.reindex(columns = ['Date', 'Time', 'Ping (ms)','Download (Mbit/s)','Upload (Mbit/s)']);
what will be the first column?

	Upload (Mbit/s)	Date	Time	Ping (ms)	Download (Mbit/s)
0	14.31	2016-11-24	13:36:25	26.992	91.80
1	14.12	2016-11-24	13:36:55	24.532	88.19
2	14.11	2016-11-24	13:37:25	20.225	59.86
3	14.22	2016-11-24	13:37:57	19.332	91.81
4	14.08	2016-11-24	13:38:27	22.494	92.05

- Upload (Mbit/s)
- Download (Mbit/s)
- Date
- Time

71. in the following table, it is by coincidence, that the diagonal is 1 in this correlation table

FSIQ	VIQ	PIQ	Weight	Height	MRI_Count	
FSIQ	1.000000	0.946639	0.934125	-0.051483	-0.086002	0.357641
VIQ	0.946639	1.000000	0.778135	-0.076088	-0.071068	0.337478
PIQ	0.934125	0.778135	1.000000	0.002512	-0.076723	0.386817
Weight	-0.051483	-0.076088	0.002512	1.000000	0.699614	0.513378
Height	-0.086002	-0.071068	-0.076723	0.699614	1.000000	0.601712
MRI_Count	0.357641	0.337478	0.386817	0.513378	0.601712	1.000000

- True
- False

Upload (Mbit/s)	Date	Time	Ping (ms)	Download (Mbit/s)	
0	14.31	2016-11-24	13:36:25	26.992	91.80
1	14.12	2016-11-24	13:36:55	24.532	88.19
2	14.11	2016-11-24	13:37:25	20.225	59.86
3	14.22	2016-11-24	13:37:57	19.332	91.81
4	14.08	2016-11-24	13:38:27	22.494	92.05

72. Before saving the DataFrame, it makes sense to reposition Upload as the last column. This can be achieved using the reindex function.
ex: df_compact_clean = df_compact_clean.reindex(columns = ['Date', 'Time', 'Ping (ms)','Download (Mbit/s)','Upload (Mbit/s)']);

- True
- False

73.

```
def hi():

    return

    print("Hi!")

hi()
```

- Hi!
- None
- hi!
- Error

74.

```
list_1 = ["A", "B", "C"]

list_2 = list_1

list_3 = list_2

del list_1[0]

del list_2[:]

print(list_3)
```

- ‘A’
- Error
- “B”, “C”
- []

75.

```
a = "A"

b = "B"

c = "C"

d = " "

lst = [a, b, c, d]

lst.reverse()

print(lst)
```

- [‘A’, ‘B’, ‘C’, ‘’]
- Error
- [‘’, ‘C’, ‘B’, ‘A’]
- [a, b, c, d]

76.

```
What are the operaitons here:

list_1 = ["A", "B", "C"]

list_2 = list_1[:]

list_3 = list_2[:]

del list_1[0]

del list_2[0]

print(list_3)
```

- Copying lists
- Printing ‘C’
- Slicing and Copying
- Slicing lists

77.

```
What is the output?

def add_numbers(a, b=2, c):

    print(a + b + c)

add_numbers(a=1, c=3)
```

- 4
- 6
- Syntax Error
- abc

78.

```
for i in range(0, 6, 3): print(i)
```

- 0 and 0
- 0 and 3
- 3 and 0
- Error

79.

What is the output?

```
a = 1

def fun():
    global a
    a = 2
    print(a)


a = 3
fun()
print(a)
```

- 2 3
- 2 2
- 1 3
- 1 2

80.

```
What is the output?

hi()

def hi():
    print("hi!")
```

- None
- hi!
- nothing
- Error

81.

```
lst = [1, [7, 7], 4]

print(lst[1])
```

- 7
- [7, 7]
- 1
- Error

82.

```
i = 2

while i >= 0:

  print("*")

  i -= 2
```

- one
- zero
- two
- three

83. Which of the following is structured data?

- .xls
- white paper
- web page
- .cxs

84. Which of the following is unstructured data?

- .csv
- .db
- .text
- .xls

85. Big Data can be defined:
Data is so vast, fast, or complex that it becomes impossible to store, process, and analyze using traditional data storage and analytics applications.

- True
- False

86. Which of the following is considered data storage?
- sql
- python
- mysql
- excel

87. Today, data is growing ----------
- linearly
- exponentially
- randomly
- rapidly

88. Which of the following is structured data:
- .docx
- .pdf
- photo
- .csv

89. Given the following nested list, use indexing to grab the word “Hi Big Data learner”.

```
lst = ['a','b',[4,10,'Hi Big Data learner'],['c',[1,66,['this']],2,111],'e',7]
```

- ✓ lst[2][2]
- ✓ lst[2] [2]

90. Which of the following is unstructured data?
- .csv
- email
- .db
- all the above

91. Data in Motion
- Data stored for analyzing
- requires real-time process
- backup data
- Data mves from place to another

92. Which of the following ARE type pf data?
- Open Data
- Public Data
- Close Data
- Private Data

11, chapter

A researcher does not use a temperature sensor correctly. What kind of error will be?

Gross Error
Random Error
Systematic Error
Noise Error

When using the ML to predict something based on the given data, Calculating the noise ratio is important. One needs to know how correct is the prediction is.

True
False

To calculate the error, which module used (according to the labs)

order = 1
p = np.poly1d(np.polyfit(x, y ,order))

from _____ import r2_score

r2 = r2_score(y, p(x))
r2

sklearn metrics
sklearn
scikit
seaborn

To draw an arrow on a figure, then you can use the method called _____ from the matplotlib module (plt)

plt.xticks()
plt.plot()
plt.annotate()
plt.legend()

	district	sales	stores
0	1	231.0	12
1	2	156.0	13
2	3	10.0	16
3	4	519.0	2
4	5	437.0	6

If the dataframe above called SA, you can reach the Sales column in this way SA.['sales']

True

False

	district	sales	stores
0	1	231.0	12
1	2	156.0	13
2	3	10.0	16
3	4	519.0	2
4	5	437.0	6

Drop the District column using the drop method. (Donot create a new dataframe, drop it from this dataframe itself) Important: the dataframe names is *df*

df.drop('district',axis=1,inplace=True)
sales = df.drop('district',axis=1)
df.drop('district',axis=1)
sales = df.drop('district',axis=1, inplace=True)

To fill a NaN values in a column in the age column , you can use the following code

Note: the dataframe called *training*

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 915 entries, 0 to 914
Data columns (total 12 columns):
PassengerId    915 non-null int64
Survived       915 non-null int64
Pclass         915 non-null int64
Name           915 non-null object
Gender         915 non-null object
Age            738 non-null float64
SibSp          915 non-null int64
```

training["Age"].fillna(training["Age"].mean())
training["Age"].fillna(training["Age"].mean(), inplace=True)
training["Age"].fillna(training["Age"].mean(), axces=1)
training["Age"].dropna()

Need a target to work

Data Mining
Unsupervised ML
Supervised ML
All are correct

What method/function produces this output from a dataframe called PP

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 915 entries, 0 to 914
Data columns (total 12 columns):
PassengerId    915 non-null int64
Survived       915 non-null int64
Pclass         915 non-null int64
Name           915 non-null object
Gender         915 non-null object
Age            738 non-null float64
SibSp          915 non-null int64
```

PP.describe
PP.head()
PP.info()
info(PP)

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 915 entries, 0 to 914
Data columns (total 12 columns):
PassengerId    915 non-null int64
Survived       915 non-null int64
Pclass         915 non-null int64
Name           915 non-null object
Gender         915 non-null object
Age            738 non-null float64
```

SibSp 915 non-null int64

According to the above lines, In which column(s) there are NaN values.

Gender
Pclass
No NaN values are there
Age

Learn from the data itself

Supervised ML
Unsupervised ML
AI
Data Mining