Introduction to Data Science
STA218

Homework 2, Part 1

Please remember to write your name and student ID.

Name:_____ Student ID: _____

1. What's the output of the following program? ( )

```
x='R\0S\0T'
print(len(x))
```

A) 3 B) 5 C) 7 D) 6

2. What's the output of the following program? ( )

```
print(0.1 + 0.2==0.3)
```

A) -1 B) True C) False D) 0

3. What's the output of the following program? ( )

```
a=3.6e-1
b=4.2e3
print(b-a)
```

A) 4199.64 B) 7.8e2 C) 0.6e-4 D) 4199.064

4. What's the output of the following program? ( )

```
s1, s2 = 'Mom', 'Dad'
print("{} loves {}".format(s2, s1))
```

A) Dad loves Mom B) Mom loves Dad
C) s1 loves s2 D) s2 loves s1

5. What's the output of the following program? ( )

```
t = "the World is so big, I want to see"
s = t[21:22] + ' love ' + t[:9]
print(s)
```

A) I love the B) I love World C) I love the World D) I love the Worl

6. What's the output of the following program? ( )

```
Test_list = list(range(6))
print(6 in Test_list)
```

A) 6 B) 6 in Test_list C) True D) False

7. Given string tstr='television', which of the following program prints 'vi'? ( )

A) print(tstr[4:7]) B) print(tstr[5:7]) C) print(tstr[-6:6]) D) print(tstr[4:-2])

8. What's the output of the following program? ( )

```
for i in range(1,6):
    If i%4==0:
        continue
    else:
        print(i, end = ",")
```

A) 1,2,3, B) 1,2,3,4, C) 1,2,3,5, D) 1,2,3,5,6,

9. What's the output of the following program? ( )

```
For s in "grandfather":
    if s=="d" or s=="h":
        continue
    print(s, end = "")
```

A) grandfather B) granfater C) grand D) father

10. What's the output of the following program? ( )

```
for s in "PythonNCRE":
    if s=="N":
        break
print(s, end= "")
```

A) PythonCRE B) N C) Python D) PythonNCRE

11. What's the output of the following program? ( )

```
for i in reversed(range(7,4,-1)):
    print(i, end = " ")
```

A) 7 6 5 4 B) 7 6 5 C) 5 6 7 D) 4 5 6 7

12. What's the output of the following program? ( )

```
for i in range(3):
    for j in 'dream':
        If j == "e":
            continue
        print(j, end = "")
```

A) dramdramdram B) drdrdr C) dreamdreamdream D) dream

13. What's the output of the following program? ( )

```
for x in range(2,8):
    y = 0
    y += x
print(y)
```

A) 27 B) 7 C) 8 D) 35

14. What's the output of the following program? ( )

```
x = 4
```

```
ca = '123456'
if str(x) in ca:
    print(ca.replace(ca[x], str(x-2)))
```

A) 123456 B) 123426 C) 5 D) 2

15. What's the output of the following program? ( )

```
ls=[[1,2,3], 'python', [[4,5, 'ABC'],6],[7,8]]
print(ls[2][1])
```

A) 'ABC' B) p C) 4 D) 6

16. Which of the following statements on Python dictionary variables is right? ( )

A) d={[1,2]:1, [3,4]:3}
B) d={1:as, 2:sf}
C) d={(1,2):1, (3,4):3}
D) d={'python':1, 2:[tea, cat]}

17. What's the output of the following program? ( )

```
d = {'food':{'cake':1, 'egg':5}}
print(d.get('egg', 'no this food'))
```

A)egg B)1 C)food D)no this food

18. Given the dictionary variable d in question 17, Which of the following program prints the number 5? ( )

A) print(d['food']['egg'])
B) print(d['cake'])
C) print(d['food'][-1])
D) print(d['cake'][1])

19. Fill in the blank of the program below, the sequel outputting {40: 'Chinese', 20: 'English', 30: 'Mathematics'} is ( )

```
tb = {'English': 20, 'Mathematics': 30, 'Chinese': 40}
stb={ }
for it in tb.items( ):
    #print(it)
    _____
print(stb)
```

A) stb[it[1]]=it[0]
B) stb[it[1]]=stb[it[0]]
C) stb[it[1]]=tb[it[1]]
D) stb[it[1]]=tb[it[0]]

20. Fill in the blank of the program below, the sequel outputting {0: [90, 'Aele'], 1: [87, 'Bob'], 2: [93, 'lala']} is ( )

```
x = [90, 87, 93]
y = [“Aelde”, “Bob”, “lala”]
z= { }
for i in range(len(x)):
    _____
    print(z)
```

A) z[i] = [x[i],y[i]]
B) z[i] = x[i], y[i]
C) x[i] = list(zip(x,y))
D) z[i] = x,y

21. Fill in the blank of the program below, the sequel outputting ‘90’, ’87’, ’93’ for the file a.txt. The filling code is ( )

```
y=[‘90’, ‘87’, ‘93’]
l=’      ’
with open(“a.txt”, ‘w’) as fo:
    for z in y:
        _____
    fo.write(l.strip( ‘, ’))
```

A) l = ‘,’.join(y)
B) l += “ ‘{}’ ”.format(z)
C) l +=“ ‘{}’ ”.format(z)+’,’
D) l += ‘{}’.format(z)+’,’

22. Contents inside country.csv are:
Bahama, Bahrain, Bangladesh, Barbados
Belarus, Belgium, Belize
Output of the sequels below is ( )

```
f =open(“country.csv”, ‘‘r”)
ls=f.read().split(“,”)
f.close()
print(ls)
```

A) [‘Bahama’, ‘Bahrain’, ‘Bangladesh’, ‘Barbados\nBelarus’, ‘Belgium’, ‘Belize’]
B) [‘Bahama’, ‘Bahrain’, ‘Bangladesh’, ‘Barbados’, ‘Belarus’, ‘Belgium’, ‘Belize’]
C) [‘Bahama, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize’]
D) [‘Bahama’, ‘Bahrain’, ‘Bangladesh’, ‘Barbados’,’\n’, ‘Belarus’, ‘Belgium’, ‘Belize’]

23. When the user input 2, the output of the following sequels would be ( )

```
try:
    n = input(“Please type in an integer:”)
    def pow2(n):
        return n**5
    print(pow2(n))
```

except:
    print(“Execution error”)

A) 32
B) 2
C) The sequels have no output
D) Execution error

24. Output of the following sequels is ( )

```
def fun(x):
    try:
        return x*4
    except:
        return x
print(fun(“5”))
```

A) 20
B) 5555
C) 5
D) 9

25. Output of the following sequels is ( )

```
f = lambda x, y: x if x<y else y
a=f(“aa”, “bb”)
b=f(“bb”, “aa”)
print(a,b)
```

A) aa aa
B) aa bb
C) bb aa
D) bb bb

26. Output of the following sequels is ( )

```
def add(x):
    if x>0:
        return x+ add(x-1)
    else:
        return 0
result = add(10)
print(result)
```

A) 0
B) 10
C) 55
D) 45

27. Output of the following sequels is ( )

```
L = ‘abcd’
```

```
def f(x, result=[‘a’, ‘b’, ‘c’, ‘d’])
    if x:
        result.remove(x[-1])
        f(x[:-1])
    return result
print(f(L))
```

A) [‘a’, ‘b’, ‘c’, ‘d’]
B) [‘b’, ‘c’, ‘d’]
C) [‘a’, ‘b’, ‘c’]
D) [ ]

28. Which of the following inputs would yield output successfully ( )

```
def f(x, y=1, z=2)
    pass
```

A) f(x=1, 2)
B) f(1, y=2, z=3)
C) f(1, x=2, z=3)
D) f(1, y=2,3)

29. Function generating a random integer in [1,99] is ( )
A) random.randint(1,100)
B) random.randint(0,99)
C) random.randint(1,99)
D) random.uniform(1,99)

30. Output of the following sequels would not be ( )

```
import random
ls = [2 ,3, 4, 6]
s = 10
k = random.randint(0,2)
s += ls[k]
print(s)
```

A) 12
B) 14
C) 13
D) 16

31. Output of the following sequels is ( )

```
x = [1,2,3]
y = x
y.append(x)
print(x)
```

A) [1,2,3]
B) [1,2,3,[1,2,3]]

C) [1,2,3,[...]]
D) [[1,2,3]]

32. Output of the following sequels is ( )
x = “hello”
y = x.upper().lower().upper().upper()
print(y)
A) “Hello”
B) “HELLO”
C) “hello”
D) “hellO”

33.Output of the following sequels is ( )
x = 5
y = 10
print(x > y and y < 15 or x == 5)
A) True
B) False
C) None
D) Error

34.Output of the following sequels is ( )
a = [1, 2, 3]
b = a
a = a + [4, 5]
print(b)
A) [1,2,3]
B) [1,2,3,4,5]
C) [4,5]
D) [1,4,5]

35.Output of the following sequels is ( )
data = {“A”:1, “B”:16, “C”:-75}
data_sorted = sorted(data.items(),key=lambda x:x[1])
print(data_sorted)
A) {‘B’:16, ‘A’:1, ‘C’:-75}
B) [('B', 16), ('A', 1), ('C', -75)]
C) {'C':-75, 'A': 1, 'B':16}
D) [('C', -75), ('A', 1), ('B', 16)]

36.Output of the following sequels is ( )
```
def fibonacci(n):
    if n == 0:
        return 0
```

```
        if n == 1:
                return 1
        return fibonacci(n-1)+fibonacci(n-2)
print(fibonacci(7))
```
A) 13
B) 1
C) 5
D) 8

37.Output of the following sequels is ( )
```
def test(var=[]):
        var.append(1)
        return var
test(),test()
```
A) [1],[1,1]
B) [1,1],[1,1]
C) None,None
D) [1],[1]

38. Output of the following sequels is ( )
```
a = 5
s = [i**2-i for i in range(1,a+1)]
print(sum(s))
```
A) 20
B) 55
C) 40
D) 8

39. Output of the following sequels is ( )
```
x = (1, 2, 3)
y = x + (4,)
print(y)
```
A) (1,2,3,4)
B) (1,2,3,4,)
C) (1,2,3)
D) (1,2,3,(4))

40. Output of the following sequels is ( )
```
x = [1, 2, 3]
x.append([4, 5,6,78])
print(len(x))
```
A) 8
B) 5
C) 7

D) 4

41. If you want to uppercase the first letter of the string and lowercase the other letters, the correct option is ()
A) print(str[0].upper()+str[1:].lower())
B) print(str[1].upper()+str[-1:1].lower())
C) print(str[0].upper()+str[1:-1].lower())
D) print(str[1].upper()+str[2:].lower())

42. The scores of Xiao Bei, Xiao Li and Xiao Si in three jumps are as follows:

tscores=[["小贝",132,126,130],["小李",117,120,123],["小司",129,140,137]], if we

want to output Xiao Li's best score, what is the correct way to deal with it? ()
A) max(tscores[1])
B) max(tscores[1][1:])
C) tscores[1].max()
D) tscores[1][1:].max()

43. Output of the following sequels is ( )
nums = [i**2 for i in range(5)]
nums = nums[2:][::-1]
print(nums)
A) [16, 9, 4]
B) [16, 9]
C) [9, 4, 1]
D) [4, 9, 16]

44. Output of the following sequels is ( )
s = {x % 2 for x in range(10)} print(len(s))
A) 1
B) 2
C) 5
D) 10

45. Output of the following sequels is ( )
lst = [i for i in range(10) if i % 2 == 0 if i % 3 == 0]
print(lst)
A) [0, 6]
B) [0, 3, 6, 9]
C) [6]
D) [0, 3, 9]

46. Output of the following sequels is ( )
g = (x**2 for x in range(4)) print(sum(g)) print(sum(g))

A) 14, 14
B) 14, 0
C) 0, 14
D) 14, TypeError

47. Output of the following sequels is ( )

```
data = {
    'group1': [1, 2, 3],
    'group2': [4, 5],
    'group3': [6, 7, 8, 9]
}
result = [x**2 for sublist in data.values() for x in sublist if x % 2 == 0]
print(result)
```

A) [4, 16, 36, 64]
B) [4, 16, 64]
C) [2, 4, 8]
D) [16, 36, 64]

48. Output of the following sequels is ( )

```
s = "abcaabbccabc"
result = s.split('a')
print(max(result, key=len))
```

A) "bc"
B) "bbcc"
C) "caabbcc"
D) ""

49. Output of the following sequels is ( )

```
s = "abracadabra"
unique_chars = set(s)
result = sorted(unique_chars, reverse=True)
print("".join(result))
```

A) "rdcba"
B) "rcdba"
C) "dcbar"
D) "zyxwvutsrqponmlkjihgfedcba"

50. Output of the following sequels is ( )

```
d = {'a': 1, 'b': 2, 'c': 3, 'd': 4}
keys = ['a', 'c', 'e']
result = {k: d.get(k, 0) + 1 for k in keys}
print(result)
```

A) {'a': 2, 'c': 4, 'e': 1}
B) {'a': 2, 'c': 4}

C) {'a': 1, 'c': 3, 'e': 1}
D) {'a': 1, 'c': 3, 'e': 0}