EXAM 1 REVIEW

Question 1

- Write the Python expressions to calculate:
  - $\frac{4+3*2^{n-2}}{10}$
- the sum of the cubes of integers *x* and *y*
- the number of seconds in 4 hours, 14 minutes, and 32 seconds

Question 2

- Write the Python boolean expressions for these conditions:
- *x* is a factor of *y* (*x* divides evenly into *y*)

- *age* is at least 18 and *state* equals Hawaii

Question 3

- Consider this code:

```
if x % 2 == 1:
    if x**3 != 27:
        x = x + 4
    else:
        x = x / 1.5
else:
    if x <= 10:
        x = x * 2
    else:
        x = x - 2
print(x)
```

- What does this code print if **x == 8**?
- What does this code print if **x == 5**?

Question 4

- Consider this code:

```
x = input('Enter a string:')
y = 0
for i in x:
      print(y, i)
      y += 1
```

- What does this code print the user enters “Felix”?

Question 5

- Write the Python loop to get the sum of all the odd numbers between 1 and n, for an input value of n. For example, the sum of the odds between 1 and 7 is: 1 + 3 + 5 + 7 = 16

  … or if n == 11 or n = 12, the output would be 36 since:

  1+ 3 + 5 + 7 + 9 + 11 = 36

Question 6

- Consider this code:

```
x = [T,E,S,T,S,A,R,E,F,U,N]
y = 0
for i in range(0,len(x)):
    if x[i] == 'E':
        y += 1
print(y)
```

Write a while loop that does exactly the same thing as the for loop

Question 7

- Consider the following code segment:

```
myList = []
myList.append("P")
myList.append("Q")
myList.append("R")
myList.insert(2, "s")
myList.insert(2, "T")
myList.append("u")
print(myList)
```

- What is printed as a result of executing the code segment?

(a) `[P, Q, R, s, T, u]`
(b) `[P, Q, s, T, R, u]`
(c) `[P, Q, R, T, s, u]`
(d) `[P, T, s, Q, R, u]`
(e) `[P, Q, T, s, R, u]`

Question 1

- Write the Python expressions to calculate:
  - $\frac{4+3*2^{n-2}}{10}$
- (4 + 3 * 2 ** (n – 2))/10

- the sum of the cubes of integers *x* and *y*
- *x ** 3 + y ** 3*

- the number of seconds in 4 hours, 14 minutes, and 32 seconds
- (4 * 60 ** 2) + (14 * 60) + 32

Question 2

- Write the Python boolean expressions for these conditions:
- *x* is a factor of *y* (*x* divides evenly into *y*)
- y % x == 0

- *age* is at least 18 and *state* equals Hawaii
- *age > = 18 and state == 'Hawaii'*

Question 3

- What does this code print if **x == 8**? 16
- What does this code print if **x == 5**? 9

Question 4

- 0 F
  1 e
  2 l
  3 i
  4 x

Question 5

- Write the Python loop to get the sum of all the odd numbers between 1 and n, for an input value of n. For example, the sum of the odds between 1 and 7 is: 1 + 3 + 5 + 7 = 16

  … or if n == 11 or n = 12, the output would be 36 since: 1 + 3 + 5 + 7 + 9 + 11 = 36

```
sum = 0
for num in range (1, n+1):
        if num % 2 == 1:
                sum += num
```

Question 6

- Consider this code:

```
x = input('Enter a string: ')
y = 0
for i in x:
    if i == 'a':
        y += 1
print(y)
```

Write a while loop that does exactly the same thing as the for loop

```
x = [T,E,S,T,S,A,R,E,F,U,N]
y, i = 0, 0
while i != x(len):
    if x[i] == 'E':
        y += 1
    i += 1
print(y)
```

Question 7

- Consider the following code segment:

```
myList = []
myList.append("P")
myList.append("Q")
myList.append("R")
myList.insert(2, "s")
myList.insert(2, "T")
myList.append("u")
print(myList)
```

- What is printed as a result of executing the code segment?

(e) [P, Q, T, s, R, u]

Question 8

- What is the output of:
  - print(2%6)

```
y  =  10
x = y += 2
print(x)
```

- x = 10
  y = 50 if (x ** 2 > 100 and y < 100):
  print(x, y)

Question 8

```
Print(2
  %6)
```

2

```
y=10
x = y +=
  2
print(x)
```

- *Syntax error : x = y += 2 is not a valid statement*
-
```
x = 10
y = 50 if (x ** 2 > 100 and
  y < 100):
        print(x, y)
```

- Nothing

Question 9

- Select all the valid String creation statements:
  - `str1 = "str1"`
  - `str1 = 'str1'`
  - `str1 = '''str1'''`
  - `str1 = str("str1")`

Question 9

- Select all the valid String creation statements:
  - ✓ `str1 = "str1"`
  - ✓ `str1 = 'str1'`
  - ✓ `str1='''str1'''`
  - ✓ `str1=str("str1")`

Question 10

- What is the output of the following print function?

```
print('%d %d %.2f' % (11, '22', 11.22))
```

- In Python, whatever you enter as input, the input() function converts it into a string
  - False
  - True

Question 10

- What is the output of the following print function?
- print('%d %d %.2f' % (11, '22' 11.22))
- Type error – the second %d expects an integer and was given the string '22'

- In Python, whatever you enter as input, the input() function converts it into a string

  ❑ False
  ✓ True

Question 11

- What is the output of the following code:

```
for i in range(2, -5, -1):
    print(i, end= ", ")
```

- What is the value of x after the following nested for loop completes its execution?

```
x = 0
for i in range(10):
     for j in range(-1, -10, -1):
         x += 1
print(x)
```

Question 11

- What is the output of the following code:

```
for i in range(2, -5, -1):
    print(i, end= ", ")
```

- 2, 1, 0, -1, -2, -3, -4,

- What is the value of x after the following nested for loop completes its execution?

```
x = 0
for i in range(10):
     for j in range(-1, -10, -1):
         x += 1
print(x)
```

- 90

Question 12

- What is the value of x?

```
x = 0
while (x < 100):
    x += 2
print(x)
```

Question 12

- What is the value of x?

```
x = 0
while (x < 100):
    x += 2
print(x)
```

100

Question 13

- Given the nested if-else structure below, what will be the value of x after code execution completes:

```
x = 0
a = 0
b = -5
if a > 0:
     if b < 0:
     x = x + 5
     elif a > 5:
         x = x +
         4
     else:
         x = x + 3
else:
     x = x+2

print(x)
```

Question 13

- Given the nested if-else structure below, what will be the value of x after code execution completes:

```
x = 0
a = 0
b = -5
if a > 0:
    if b < 0:
        x = x +
          5
    elif a >
        5: x =
        x + 4
    else: x=
        x+3
else:
  x = x +
    2
print(x)
```

- 2

Question 14

- What is the output of the following list operation:

```
aList = [10, 20, 30, 40, 50, 60, 70, 80]
print(aList[2:5])
print(aList[:4])
print(aList[3:])
```

Question 14

- What is the output of the following list operation:

```
aList = [10, 20, 30, 40, 50, 60, 70, 80]
print(aList[2:5])
print(aList[:4])
print(aList[3:])
```

```
[30, 40, 50]
[10, 20, 30, 40]
[40, 50, 60, 70, 80]
```