

## ISYS 350, Fall 2021, Exam 1 review and sample

**I won't publish the answers to questions on this review. But you may send questions to me and I will answer your questions.**

This exam covers the following PowerPoint presentations:

1. Python Introduction
2. Making decision with if statement
3. Complex condition
4. Repetitions (loops)

And Revel assignments 1, 2, 3 and programming assignments 1, 2, 3.

Sample questions:

1. Write an equivalent statement using compound operator:  $X=X+2$  \_\_\_\_\_

2. Which operation is performed first in the following expression:  $2*2**2/2-1$

- a.  $2*2$       b.  $2**2$       c.  $2/2$       d.  $2-1$

3. Write a Python expression for this formula:  $1 + X^{\frac{AB}{C+D}}$  \_\_\_\_\_

4. How to determine if the data from an input statement contains valid number?

5. State University calculates students tuition based on the following rules:

- State residents:
  - Total units taken  $\leq 12$ , tuition = 1200
  - Total units taken  $> 12$ , tuition = 1200 + 200 per additional unit.
- Non residents:
  - Total units taken  $\leq 9$ , tuition = 3000
  - Total units taken  $> 9$ , tuition = 3000 + 500 per additional unit.

Complete the following program to compute and show the tuition.

```
status=input('Enter status, R for resident, NR for non-resident')
units=float(input('Enter number of units:'))
```

5. A program to determine state tax rate is given below. Identify a situation where this program will not return correct tax rate given a state:

```
state=input("Enter state code:")
if state == "CA":
```

```

    tax= 0.01
elif state=="WA":
    tax=0.015
elif state=="NY":
    tax=0.012
else:
    tax=0.005
print("Tax rate is:" + "{:.2%}".format(tax))

```

6. A program to determine letter grade is given below. If a student's exam score is 76, what is the grade returned by the program?\_\_\_\_\_.

```

score= float(input("Enter exam score: "))
if score >= 90:
    grade="A"
elif score >= 80:
    grade="B"
elif score >= 70:
    grade="C"
elif score >= 60:
    grade="D"
else:
    grade="F"
print("Your grade is: " + grade)

```

7. How many times the loop below will be executed? What is the value of counter after the loop?

```

counter = 1
while counter<5:
    counter+=2
print(counter)

```

8. An integer is stored in a variable MyInt. Write the if statement to test if MyInt is divisible by 5 or not and use print() statement to show "Divisible by 5" or "Not divisible by 5".

9. A Business student with GPA 2.5, will the complex condition below evaluate to true or false?  
\_\_\_\_\_

Major='BUS' or Major='Sci' and GPA>3.0

10. Problems similar to assignment 1, 2 and 3 and examples and practice problems in the PowerPoint slides.

- 11 The program below compute the sum from 1 to N:

```

sum=0
counter = 1
N = int(input("Enter value N: "))
while counter <= N:

```

```
sum += counter
counter+=1
print("The sum of 1 to "+str(N)+ " is: " + str(sum))
```

Rewrite this program using a for loop.

12 Complete the program below to compute and print the sum of all numbers between the starting number and the end number:

```
start = int(input('Enter the starting number:'))
end= int(input('Enter the ending number:'))
Sum = 0
```