Course Code:	Course Name:	Exam:
CSC217 – Sec B	*AI with Python*	*Midterm*

1- <u>Respond to the following questions</u> *(5 pts. each)*

a- Name all AI types based on functionalities

b- Explain Artificial General Intelligence (AGI)

c- Give 3 Disadvantages of AI

d- Talk about how AI can “Manage a Disaster” with example

2- Write a Python program that accept from input the weight (in kg) and convert it into pounds and also to ounces (using 2 methods getLB and getOZ) **that return the converted values.** *(20 pts.)*

Note: 1kg = 2.2 pounds(lb) = 35.274 ounces (oz)

<u>Sample Run</u>

```
Enter your weight in kg: 66.5
Weight in pounds is 146.6 lb and in ounces is 2345.7 oz
```

3- Write a Python program that takes a string (“ Hello MY super World ”) then counts the number of effective spaces between words. *(25 pts.)*

NB: - Only a single space is counting if many exists in between
- Beginning and ending spaces should not be counted).

<u>Sample Run</u>

```
The number of spaces between words is 3
```

4- Write a Python program that can calculate the custom tax fees, and the total to pay after providing the total amount of Shipment. *(35 pts.)*

The tax fees must be applied based on the data given in following table:

Shipment Amount in $	Custom fees in $
<=1000	50
>1000 and <=2000	10%
>2000 and <=3000	12%
>3000	14%

That is, when the total shippment amount is less than 1000$, then there will be 50$ tax fees to apply. When the total shipment amount is greater than 1000$ and less than or equal to 2000$, then there will be 10% custom tax fees to apply, and so on.

Sample Run 1:
Enter the Total Amount of Shipment: ***500.0***
Your custom fees is ***50.0$***
You have to pay a total of ***500.0+50.0 = 550.0$***

Sample Run 2:
Enter the Total Amount of Shipment: ***1500.0***
Your custom fees is ***150.0$***
You have to pay a total of ***1500.0+150.0 = 1650.0$***

Sample Run 3:
Enter the Total Amount of Shipment: ***2650.5***
Your custom fees is ***318.06$***
You have to pay a total of ***2650.5+318.06 = 2968.56$***

Question 2:

```
def getLB(w):
    return w * 2.20462

def getOZ(w):
    return w * 35.274

weight = input("Enter your weight in kg: ")

try:
    weight = float(weight)

    toLB = getLB(weight)
    toOZ = getOZ(weight)

    print("Weight in pounds is {} lb and in ounces is {}
          oz".format(toLB, toOZ))

except ValueError:
    print("Enter number only")
```

Question 3:

```
#First Method

def spaces(string):
    count = 0
    words = string.strip().split()
    if len(words) > 1:
        for i in range(len(words) - 1):
            if words[i] != '' and words[i + 1] != '':
                count += 1
    return count

string = input("Enter a string: ")

space_count = spaces(string)

if space_count > 0:
    print("The number of spaces is {}".format(space_count))
else:
    print("Space does not found")
```

```
#Second Method

def reduce_spaces(txt):
    while '  ' in txt:
        txt = txt.replace('  ', ' ')
    return txt


text = input('Enter a text')

text = text.strip().reduce_spaces(text)

character = " "

count = 0

if character in text:
    for word in text:
        if word == character:
            count += 1
    print("The number of spaces between words is", count)

else:
    print("Space is not found")
```

Question 3:

```
def calculateFees(amount):
    if amount <= 1000: fees = 50
    elif amount <= 2000: fees = amount * 0.1
    elif amount <= 3000: fees = amount * 0.12
    else: fees = amount * 0.14
    return fees

amount = input("Enter the Total Amount of Shipment: ")

try:
    amount = float(amount)
    custom_fees = calculateFees(amount)
    total = amount + custom_fees

    print("Your custom fees is {}$".format(custom_fees))
    print("You have to pay a total of {}+{} =
          {}$".format(amount, custom_fees, total))

except ValueError:
    print("Enter a number")
```