Name: _____ Seat #: _____

CSF-510 Application Development

Instructor: Zarmeen Nasim
Fall 2021
First Hourly
September 25, 2021

Total Marks: 35
Time: 75 minutes

Read instructions carefully.

1. **Attempt all 7 questions**
2. **Solve all the questions on the Answer Sheet provided.**
3. **You have 75 minutes to complete exam.**

Question 1: **[10 marks]**

Answer the following questions briefly

i.	How Non-Primitive data type is different from Primitive data type?
ii.	List down **primitive data types** in Python.
iii.	State the differences between **Arrays** and **Lists**.
iv.	In Python, tuples are ***immutable*** while lists are ***mutable***. What is the difference?
v.	What is the difference between a **while** loop and a **for** loop? Give one example where we would prefer one over the other.

Question 2: **[3 marks]**

Execute each of the following Python expressions. Write down the **value** that is output when the expression is evaluated using a **Python interpreter** (Jupyter notebook). Write **error** if you think the expression will raise an error.

i.	`12 + 3 * 5 == 75`
ii.	`type(3+10)`
iii.	`3+"10"`
iv.	`type(1j)`
v.	`2**3`
vi.	`var1, var2 = 2,4` `print(var2)`

Name: _____ Seat #: _____

Question 3: **[6 marks]**

Consider the following list definition in Python.

```
numbers = [12,4,5,2,0]
```

What would be displayed in **Jupyter notebook** for each of the following expressions if they are evaluated in the given order? If it would give an **error**, then write error.

i.	`numbers[1]`
ii.	`numbers[-4:-2]`
iii.	`"12" in numbers`
iv.	`sorted(numbers)`
v.	`numbers.pop(4)`
vi.	`numbers.append(13)` `numbers`

Question 4: **[10 marks]**

Execute each of the following code snippets. Write **any output that it prints**. If there is an **error** during execution, then **describe the error in your own words**.

a.	`countries = ("Pakistan", "China")`
	`countries[1] = "Iran"`
	`print(countries)`

b.	`my_set = {2,4,6,6,8,10}`
	`print(my_set)`
	`print("Length of Set is: " +str(len(my_set)))`
	`print(my_set[1])`

c.	`def sum1(n):`
	`  total = 0`
	`  for i in range(1,n):`
	`  total = total + i`
	`  return total`
	
	`ans = sum1(5)`
	`print(ans)`

d.	`def f1(n):`
	`  print("A")`
	`  return 2`
	
	`f1()`

Name: _____ Seat #: _____

e.	def func1(x,y):
	    print("x = ",str(x))
	    print("y = ",str(y))
	def func2(n):
	    print("Calling Function 2")
	    func1(y=n,x=n-1)
	
	number = 3
	while number > 0:
	    number = number-1
	    func2(number)

Question 5: **[2 marks]**

Let **nums2** and **nums3** be two non-empty lists. Write a Python statement that will append the **last element of nums2** to the end of **nums3**.

```
-------------------------.append(-------------------------)
```

Question 6: **[2 marks]**

Let **marks** be the dictionary defined as:

```
marks = {'Chemistry':80,'Physics':40,'Maths':60}
```

Write a Python command to **update** marks obtained in **Maths from 60 to 30**.

Question 7: **[2 marks]**

Let **scores** be the numeric list defined as:

```
scores = [10,21,56,43]
```

Write the Python statement to **filter** the scores greater than 20 using **lambda function**.

---------- GOOD LUCK ☺ ----------