

CSC 361E – CAT 2 GENERIC PROGRAMMING IN PYTHON TIME: 1HR 15MIN

1. Write a while loop that computes the sum of the squares of the first 50 counting numbers (i.e. 1, 2, 3, ....) [4 marks]
2. Given *the* dictionary *below*, write Python code to get all values from the dictionary and *create a list of these values* but don't add duplicates. [5 marks]

speed = {'Jan':47, 'Feb':52, 'March':47, 'April':44, 'May':52, 'June':53, 'July':54, 'Aug':44, 'Sept':54}

3. Write a for loop to compute the sum of the cubes of the first n counting numbers. [4 marks]
4. Write a line of Python code to randomly select 4 items from the list menuItems and assign it to the list orders. [2 marks]
5. Given a list saved in a variable: a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]. Using list comprehension, write one line of Python that takes this list a and makes a new list that has only the numbers divisible by 4 of this list. [4 marks]
6. Assume that line is a variable that has been associated with a string consisting of words separated by single space characters with a period at the end. For example: "Kenya is a beautiful country with great people." Write the statements needed so that the variable secondWord is associated with the second word of the value of line. So, if the value of line were "Knowledge for Development." your code would associate secondWord with the value "for". [6 marks]
7. Suppose that statement2 causes an exception in the following try-except block:

```
try:
    statement1
    statement2
    statement3
except Exception1:
    # Handle exception 1
except Exception2:
    # Handle exception 2
statement4
```

Line

Answer the following questions: [4 marks]

- i. Will **statement3** be executed?
- ii. If the exception is not caught, will **statement4** be executed?
- iii. If the exception is caught in the **except** block, will **statement4** be executed?

8. Which of the following dictionaries are created correctly? [3 marks]

```
d = {1:[1, 2], 3:[3, 4]}
d = {[1, 2]:1, [3, 4]:3}
d = {(1, 2):1, (3, 4):3}
```



```
d = {1:"john", 3:"peter"}
```

9. Write a Python statement to open a file called *names* for writing and assign it to a variable called *outfile*. [2 marks]
10. Write a class definition named *Book*. The *Book* class should have data attributes for a book's title, the author's name, and the publisher's name. The class should also have the following:
- An `__init__` method for the class. The method should accept an argument for each of the data attributes. [3 marks]
  - Accessor and mutator methods for each data attribute. [9 marks]
  - An `__str__` method that returns a string indicating the state of the object. [3 marks]