

1.

Definition of population dictionary:

```
>>> population={'Shanghai':17.8,'Istanbul':13.3,'Karachi':13.0,'Mumbai':12.5}
      #here 'key' is city names and 'value' is their population
```

2.

```
>>> animals = {'dogs': [20, 10, 15, 8, 32, 15], 'cats': [3,4,2,8,2,4],
'rabbits': [2, 3, 3], 'fish': [0.3, 0.5, 0.8, 0.3, 1]}
```

Result of following commands:

a. >>> animals['dogs'] #Returns values of key 'dogs'

output:-

```
[20, 10, 15, 8, 32, 15]
```

b. >>> animals['dogs'][3] #Returns value of key 'dogs' and value indexed with 3

output:-

```
3
```

c. >>>animals[3] # dictionary can't be accessed with index value

output:-

Traceback (most recent call last):

File "E:/AI Training/Assignment/Assignment 1/Q2.py", line 16, in <module>

animals[3]

KeyError: 3

d. >>> animals['fish'] #Returns values of key 'fish'

output:-

```
[0.3, 0.5, 0.8, 0.3, 1]
```

3. what is output of following?

```
>>> a = [1, 2, 2, 3, 3, 3, 4, 4, 4, 4]
```

```
>>> b = set(a) #converts list into set and removes duplicates
```

```
>>> print(len(a) - len(b)) ## len(a) =10 and len(b) = 4 means returns 6
```

output:

6

4. what is output of following?

```
>>> tuple_a = 3, 4 # when brackets are not used it automatically interpreted as tuple.
```

```
>>> tuple_b = (3, 4)
```

```
>>> print(tuple_a == tuple_b) #Returns True
```

```
>>> print(tuple_a[1]) #Returns 4
```

output:

True

4

5. what is the output of following?

```
>>> names = ["Carol","Albert","Ben","Donna"] # list of names
```

```
>>> print(" & ".join(sorted(names))) # first elements are sorted and separated  
# by ' & ' in output.
```

output:

Albert & Ben & Carol & Donna