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Programming and Data Structures with Python
Quiz 1, 3 September 2026, I Semester, 2026–2027

Note: There were three questions, with four variants of each question. There were multiple question papers with different combinations of variants.

1. One of the following 10 statements generates an error. Which one? (Your answer should be a number between 1 and 10.)

```
x = [1,[7,8],2,"efgh",(3,4)] # Line 1
y = x[0:6] # Line 2
z = x # Line 3
w = y # Line 4
x[1] = x[4][0:3] + (3,) # Line 5
y[2] = 4 # Line 6
z[1][1] = 8 # Line 7
z[0] = 0 # Line 8
w[4][0] = 1000 # Line 9
a = (x[4][1] == 4) # Line 10
```

Answer: 7.

At line 7, `z[1]` is the tuple `(3,4,3)` because of the reassignment to `z` in line 3, and `z[1][1]` cannot be assigned in place.

2. One of the following 10 statements generates an error. Which one? (Your answer should be a number between 1 and 10.)

```
x = [1,[7,3,4,1],2,"efgh",(3,4)] # Line 1
y = x[0:50] # Line 2
z = y # Line 3
w = x # Line 4
x[1] = x[4] + (2,) # Line 5
w[1][1] = 6 # Line 6
y[2] = 4 # Line 7
z[0] = 0 # Line 8
w[4][0] = 1000 # Line 9
a = (x[4][1] == 4) # Line 10
```

Answer: 6.

At line 6, `w[1]` is the tuple `(3,4,2)` because of the reassignment to `x[1]` in line 5, and `x[1][1]` cannot be assigned in place.

3. One of the following 10 statements generates an error. Which one? (Your answer should be a number between 1 and 10.)

```
x = [[7,8],3,"ding",[8,16],"ling",17] # Line 1
z = [x[0],x[3]] # Line 2
y = x[2:50] # Line 3
w = x # Line 4
w[3][1] = 7 # Line 5
a = z[0][1] + z[1][1] # Line 6
x[3] = (1,13) # Line 7
y[1] = [y[1][0] + y[1][1]] # Line 8
w[3][1] = 7 # Line 9
y[1][0] = 7 # Line 10
```

Answer: 9.

At line 9, `w[3]` is the tuple `(1,13)` because of the reassignment to `x[3]` in line 7, and `w[3][1]` cannot be assigned in place. At line 5, the same assignment works because at this point `w[3]` is the list `[8,16]`.

4. One of the following 10 statements generates an error. Which one? (Your answer should be a number between 1 and 10.)

```
z = ["cat",[17,8],3,"cap",[6,8],17]    # Line 1
x = [z[4],z[1]]                        # Line 2
w = z[1:50]                            # Line 3
y = z                                  # Line 4
y[4][1] = 7                            # Line 5
z[4] = (17,2)                          # Line 6
w[0] = w[0][1] + w[3][1]                # Line 7
y[4][1] = 7                            # Line 8
a = x[0][1] + x[1][1]                  # Line 9
w[3][1] = 7                            # Line 10
```

Answer: 8.

At line 8, `y[4][1]` is the tuple `(17,2)` because of the reassignment to `z[4]` in line 6, and `y[4][1]` cannot be assigned in place. At line 5, the same assignment works because at this point `y[4]` is the list `[6,8]`.

5. What is the value of `len(range(39,-4,-4))`?

Answer: 11.

The values produced by `range` are 39, 35, 31, 27, 23, 19, 15, 11, 7, 3, -1.

6. What is the value of `len(range(31,-5,-3))`?

Answer: 12.

The values produced by `range` are 31, 28, 25, 22, 19, 16, 13, 10, 7, 4, 1, -2.

7. What is the value of `len(range(43,-5,-4))`?

Answer: 12.

The values produced by `range` are 43, 39, 35, 31, 27, 23, 19, 15, 11, 7, 3, -1.

8. What is the value of `len(range(37,-7,-4))`?

Answer: 11.

The values produced by `range` are 37, 33, 29, 25, 21, 17, 13, 9, 5, 1, -3.

9. What is the value of `l[14]` at the end of the following statements?

```
l = list(range(1,20))
l[4:8] = list(range(11,2,-2))
```

Answer: 14.

After the first assignment, `l` is `[1,2,...,18,19]`.

After the update, the segment `[...,5,6,7,8,...]` is replaced by `[11,9,7,5,3]`, so `l` becomes `[1,2,3,4,11,9,7,5,3,9,10,11,12,13,14,15,16,17,18,19]`.

10. What is the value of `l[8]` at the end of the following statements?

```
l = list(range(20,2,-1))
l[3:7] = list(range(2,11,3))
```

Answer: 11.

After the first assignment, `l` is `[20,19,...,4,3]`.

After the second assignment, the segment `[...,17,16,15,14,...]` is replaced by `[2,5,8]`, so `l` becomes `[20,19,18,2,5,8,13,12,11,10,9,8,7,6,5,4,3]`.

11. What is the value of `l[13]` at the end of the following statements?

```
l = list(range(1,20))
l[3:7] = list(range(13,4,-2))
```

Answer: 13.

Initially, `l` is `[1,2,...,18,19]`. After the update, the segment `[...,4,5,6,7,...]` is replaced by `[13,11,9,7,5]`, so `l` is now

`[1,2,3,13,11,9,7,5,8,9,10,11,12,13,14,15,16,17,18,19]`.

12. What is the value of `l[9]` at the end of the following statements?

```
l = list(range(20,3,-1))
l[1:5] = list(range(3,13,2))
```

Answer: 12.

After the first assignment, `l` is `[20,19,...,5,4]`.

After the second assignment, the segment `[...,19,18,17,16,...]` is replaced by `[3,5,7,9,11]`, so `l` becomes `[20,3,5,7,9,11,15,14,13,12,11,10,9,8,7,6,5,4]`.