1) Python data type and typecasting questions for practice:

1. What is the data type of the variable x if x = 5?
2. Which data type is used to represent a sequence of characters in Python?
3. True or False: Python has a built-in data type for representing complex numbers.
4. What is the data type of the variable my_list if my_list = [1, 2, 3]?
5. Which data type is used to represent a collection of key-value pairs in Python?
6. Convert the variable x of type float to an integer.
7. Convert the variable x of type int to a string.
8. Convert the variable x of type str to a float.
9. Convert the variable my_tuple of type tuple to a list.
10. Convert the variable my_dict of type dict to a string.
11. True or False: Python has a built-in data type for representing dates and times.
12. What is the data type of the variable x if x = (1, 2, 3)?
13. Which data type is used to represent a sequence of immutable elements in Python?
14. True or False: Python has a built-in data type for representing boolean values.
15. What is the data type of the variable my_set if my_set = {1, 2, 3}?
16. Convert the variable x of type int to a boolean.
17. Convert the variable x of type float to a string.
18. Convert the variable x of type str to an integer.
19. Convert the variable my_list of type list to a tuple.
20. Convert the variable my_dict of type dict to a list of its keys.

2) Python indexing questions for practice:

1. Given a list my_list = [3, 6, 9, 12, 15], print the third item using indexing.
2. Given a string my_string = "hello world", print the last character using negative indexing.
3. Given a list my_list = [2, 4, 6, 8, 10], print the second to fourth items using slicing.
4. Given a string my_string = "Python is fun!", print the first five characters using slicing.
5. Given a list my_list = ["apple", "banana", "cherry", "date", "elderberry"], print the last item using negative indexing.
6. Given a string my_string = "Hello, how are you?", print the first occurrence of the letter "o" using indexing.
7. Given a list my_list = [1, 2, 3, 4, 5, 6, 7, 8, 9], print every other item using slicing.
8. Given a string my_string = "Python is easy to learn.", print the last five characters using slicing.
9. Given a list my_list = [11, 22, 33, 44, 55, 66, 77, 88, 99], print the items from the fourth to the second last using slicing.
10. Given a string my_string = "This is a long string.", print every third character using slicing.

3) Python list operations or methods questions for practice:

1. Create a list my_list with the values [1, 2, 3, 4, 5]. Append the value 6 to the end of the list.
2. Given a list my_list = ["apple", "banana", "cherry"], insert the value "orange" at index 1.

3. Given a list my_list = [10, 20, 30, 40, 50], remove the value 30 from the list.
4. Given a list my_list = ["apple", "banana", "cherry", "orange"], remove the last item from the list.
5. Create a list my_list with the values [1, 2, 3, 4, 5]. Use a method to reverse the order of the items in the list.
6. Given two lists list1 = [1, 2, 3] and list2 = [4, 5, 6], use a method to concatenate them into a single list.
7. Given a list my_list = ["apple", "banana", "cherry", "orange"], use a method to sort the items in alphabetical order.
8. Given a list my_list = [10, 20, 30, 40, 50], use a method to find the index of the value 40.
9. Given a list my_list = ["apple", "banana", "cherry", "orange"], use a method to count the number of occurrences of the value "banana".
10. Given a list my_list = [10, 20, 30, 40, 50], use a method to find the largest value in the list.
11. Given a list my_list = [1, 2, 3, 4, 5], use a method to find the sum of all the values in the list.
12. Given a list my_list = ["apple", "banana", "cherry", "orange"], use a method to create a new list with all the items in uppercase.
13. Given a list my_list = [1, 2, 3, 4, 5], use a method to create a new list with all the values doubled.
14. Given a list my_list = ["apple", "banana", "cherry", "orange"], use a method to create a new list with the items in reverse order.
15. Given a list my_list = [1, 2, 3, 4, 5], use a method to remove all the values from the list.
16. Given a list my_list = ["apple", "banana", "cherry", "orange"], use a method to remove the item "banana" from the list.
17. Given a list my_list = [1, 2, 3, 4, 5], use a method to create a new list with only the even values.
18. Given two lists list1 = [1, 2, 3] and list2 = [2, 3, 4], use a method to create a new list with only the values that appear in both lists.
19. Given a list my_list = ["apple", "banana", "cherry", "orange"], use a method to create a new list with only the items that contain the letter "a".
20. Given a list my_list = [1, 2, 3, 4, 5], use a method to create a new list with the values sorted in descending order.