#### **MCQ**

#### 1 What is the correct syntax for creating an empty list in Python?

#### A. empty\_list = list()

#### B. empty\_list = []

#### C. empty\_list = ()

#### D. empty\_list = {}

#### 2 Which method is used to add an element at the end of a list?

#### A. append()

#### B. insert()

#### C. add()

#### D. extend()

#### 3 What will my\_list[2] return if my\_list = [10, 20, 30, 40]?

#### A. 30

#### B. 20

#### C. 40

#### D. IndexError

#### 4 Which of the following methods removes the first occurrence of a value from the list?

#### A. remove()

#### B. delete()

#### C. discard()

#### D. pop()

#### 5 What is the output of len([1, [2, 3], 4])?

#### A. 3

#### B. 4

#### C. 5

#### D. 6

### **Set MCQs:**

#### 6 Which symbol is used to represent a set in Python?

#### A. [ ]

#### B. ( )

#### C. { }

#### D. < >

#### 7 What happens when you try to add a duplicate element to a set in Python?

#### A. The set becomes empty

#### B. The duplicate element is ignored

#### C. An error is raised

#### D. The duplicate element is added

#### 8 Which method is used to remove an element from a set?

#### A. remove()

#### B. discard()

#### C. delete()

#### D. pop()

#### 9 What is the result of len({10, 20, 30, 40})?

#### A. 3

#### B. 4

#### C. 5

#### D. 6

#### 10 Which of the following is a valid way to create an empty set?

#### A. new\_set = set()

#### B. new\_set = {}

#### C. new\_set = set([])

#### D. All of the above

#### 11 What is the correct syntax for creating an empty tuple in Python?

#### A. empty\_tuple = tuple()

#### B. empty\_tuple = []

#### C. empty\_tuple = {}

#### D. empty\_tuple = ()

#### 12 Which of the following statements about tuples is true?

#### A. Tuples are mutable

#### B. Tuples are ordered

#### C. Tuples can be changed after creation

#### D. Tuples allow duplicate elements

#### 13 What will my\_tuple[2] return if my\_tuple = (10, 20, 30, 40)?

#### A. 30

#### B. 20

#### C. 40

#### 14 What is the purpose of the if statement in Python?

#### A. Iteration

#### B. Exception handling

#### C. Decision making

#### D. Function definition

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#### 15 Which keyword is used to define the block of code to be executed if a condition is true?

#### A. then

#### B. do

#### C. code

#### D. None of the above

#### 16 What is the purpose of the else statement?

#### A. To handle exceptions

#### B. To execute a block of code if the condition in the if statement is false

#### C. To define a loop

#### D. To define a function

#### 17 Which loop is used when you want to iterate a block of code a fixed number of times?

#### A. while

#### B. for

#### C. do-while

#### D. foreach

#### 18 In Python, what is the purpose of the break statement?

#### A. To exit the program

#### B. To exit the current loop prematurely

#### C. To skip the current iteration of the loop

#### D. To raise an exception

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#### 19 Which data structure is mutable?

#### A. List

#### B. Set

#### C. Tuple

#### D. Both A and B

#### 20 What is the correct way to create an empty list in Python?

#### A. empty\_list = list()

#### B. empty\_list = {}

#### C. empty\_list = []

#### D. All of the above

#### 21 Which data structure does not allow duplicate elements?

#### A. List

#### B. Set

#### C. Tuple

#### D. All of the above

#### 22 What is the primary difference between a list and a tuple in Python?

#### A. Lists are mutable, tuples are immutable

#### B. Lists can have different data types, tuples can't

#### C. Tuples can be resized, lists can't

#### D. Lists are ordered, tuples are not

#### 23 Which of the following is a correct way to add an element to a set?

#### A. my\_set.add(element)

#### B. my\_set.insert(element)

#### C. my\_set.append(element)

#### D. my\_set.update(element)

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#### Exercise 1:

Question:

Write a Python program that takes a number as input and prints whether it is Exercise 2:

Question:

#### Exercise 3:

Question:

Write a Python program that creates a list of numbers, squares each number, and prints the resulting list.

#### Exercise 4:

Question:

Write a Python program that takes two lists, concatenates them, and removes duplicates.

#### Exercise 5:

Question:

Write a Python program that takes a tuple of numbers, calculates the sum, and prints the result.