Question 1: What is Python?

a) A type of snake
b) A high-level programming language
c) A data visualization tool
d) A web development framework

Answer: b) A high-level programming language

Question 2: Which symbol is used for comments in Python?

a) //
b) ##
c) --
d) /* */

Answer: b) ##

Question 3: Which data type is used to store whole numbers in Python?

a) int
b) float
c) str
d) bool

Answer: a) int

Question 4: What is the output of the following code snippet?

python

```
x = 5
y = 3
result = x + y * 2
print(result)
```

a) 11
b) 10
c) 8
d) 13

Answer: a) 11

Question 5: In Python, which of the following is NOT a valid variable name?

a) my_variable
b) _value
c) 2ndNumber
d) XYZ

Answer: c) 2ndNumber

Question 6: How do you get user input in Python?

a) input()
b) get_input()
c) user_input()
d) get()

Answer: a) input()

Question 7: What data type does the input() function return?

a) int
b) float
c) str
d) bool

Answer: c) str

Question 8: Which operator is used for exponentiation in Python?

a) ^
b) %
c) **
d) //

Answer: c) **

Question 9: What will be the output of the following code?

python

name = "Alice"

age = 25
print("My name is " + name + " and I am " + str(age) + " years old.")
a) My name is Alice and I am 25 years old.
b) My name is name and I am age years old.
c) My name is "Alice" and I am 25 years old.
d) Error: cannot concatenate 'str' and 'int' objects.

Answer: a) My name is Alice and I am 25 years old.

Question 10: What is the correct way to convert a string to an integer in Python?

a) int(str_value)
b) convert_to_int(str_value)
c) str_value.toInt()
d) int_to_str(str_value)

Answer: a) int(str_value)

Question 11: What is Python?

a) A type of snake
b) A high-level programming language
c) A data visualization tool
d) A web development framework

Answer: b) A high-level programming language

Question 12: Which symbol is used for comments in Python?

a) //
b) ##
c) --
d) /* */

Answer: b) ##

Question 13: Which data type is used to store whole numbers in Python?

a) int
b) float
c) str
d) bool

Answer: a) int

Question 14: What is the output of the following code snippet?

python

```
x = 5
y = 3
result = x + y * 2
print(result)
```

a) 11
b) 10
c) 8
d) 13

Answer: a) 11

Question 15: In Python, which of the following is NOT a valid variable name?

a) my_variable
b) _value
c) 2ndNumber
d) XYZ

Answer: c) 2ndNumber

Question 16: How do you get user input in Python?

a) input()
b) get_input()
c) user_input()
d) get()

Answer: a) input()

Question 17: What data type does the input() function return?

a) int
b) float
c) str
d) bool

Answer: c) str

Question 8: Which operator is used for exponentiation in Python?

a) ^
b) %
c) **
d) //

Answer: c) **

Question 9: What will be the output of the following code?

python

```
name = "Alice"
age = 25
print("My name is " + name + " and I am " + str(age) + " years old.")
```

a) My name is Alice and I am 25 years old.
b) My name is name and I am age years old.
c) My name is "Alice" and I am 25 years old.
d) Error: cannot concatenate 'str' and 'int' objects.

Answer: a) My name is Alice and I am 25 years old.

Question 10: What is the correct way to convert a string to an integer in Python?

a) int(str_value)
b) convert_to_int(str_value)
c) str_value.toInt()
d) int_to_str(str_value)

Answer: a) int(str_value)

Question 11: What is the result of the following expression?

python

```
12 / 5
```

a) 2.4
b) 2.5

c) 2
d) 2.0

Answer: a) 2.4

Question : How do you add a single-line comment in Python?

a) // This is a comment
b) /* This is a comment */
c) # This is a comment
d) <!-- This is a comment -->

Answer: c) # This is a comment

Question : Which data type is used to store a sequence of characters in Python?

a) int
b) float
c) str
d) bool

Answer: c) str

Question : What will be the output of the following code?

python

```
x = 10
y = 3
result = x // y
print(result)
```

a) 3.33333333333
b) 3
c) 3.0
d) 3.33

Answer: b) 3

Question : Which of the following is NOT a valid Python variable name?

a) myVar
b) 2ndVar

c) _var
d) variable_2

Answer: b) 2ndVar

Question : How do you check the type of a variable in Python?

a) check_type(variable)
b) typeof variable
c) type(variable)
d) variable.type()

Answer: c) type(variable)

Question : What is the correct way to create a list in Python?

a) list = [1, 2, 3]
b) list(1, 2, 3)
c) list{1, 2, 3}
d) list = (1, 2, 3)

Answer: a) list = [1, 2, 3]

Question : What is the output of the following code?

python

```
x = 5
y = 2
result = x % y
print(result)
```

a) 3
b) 2.5
c) 0.5
d) 1

Answer: d) 1

Question : How do you define a function in Python?

a) function my_function():
b) def my_function():

c) func my_function():
d) define my_function():

Answer: b) def my_function():

Question : What is the output of the following code?

python

```
x = 5
y = 3
z = 7
result = x + y * z
print(result)
```

a) 26
b) 56
c) 26.0
d) 26.333

Answer: a) 26

Question : Which method is used to convert a string to uppercase in Python?

a) str.upper()
b) str.to_upper()
c) str.upperCase()
d) str.toUppercase()

Answer: a) str.upper()

Question : How do you concatenate two lists in Python?

a) list1 + list2
b) concat(list1, list2)
c) list1.append(list2)
d) list1.concat(list2)

Answer: a) list1 + list2

Question 23: What will be the output of the following code?

python

```
x = 10
y = 3
result = x / y
print(result)
```

a) 3.33333333333
b) 3
c) 3.0
d) 3.33

Answer: c) 3.0

Question 24: Which of the following is a valid way to initialize an empty dictionary in Python?

a) dict = {}
b) dict()
c) dict = []
d) dictionary()

Answer: a) dict = {}

Question 25: What is the output of the following code?

python

```
x = 5
y = 3
result = x * y
print(result)
```

a) 15
b) 8
c) 53
d) 35

Answer: a) 15

Question 26: How do you check if a value is present in a list in Python?

a) list.has(value)
b) value in list
c) list.contains(value)
d) list.includes(value)

Answer: b) value in list

Question 27: What will be the output of the following code?

python

```
x = 10
y = 3
result = x % y
print(result)
```

a) 3
b) 2.5
c) 0.5
d) 1

Answer: d) 1

Question 28: Which data type is used to store true or false values in Python?

a) int
b) float
c) str
d) bool

Answer: d) bool

Question 29: How do you remove an item from a list in Python?

a) list.remove(item)
b) list.delete(item)
c) list.pop(item)
d) list.del(item)

Answer: a) list.remove(item)

Question 30: What will be the output of the following code?

python

```
x = 5
y = 2
```

result = x ** y
print(result)
a) 25
b) 7
c) 10
d) 4.0

Answer: a) 25

Question 31: How do you round a floating-point number to the nearest integer in Python?

a) round(number)
b) number.round()
c) int(number)
d) math.round(number)

Answer: a) round(number)

Question 32: What is the correct way to check if two variables point to the same object in Python?

a) variable1 == variable2
b) variable1 is variable2
c) variable1 === variable2
d) variable1 is_not variable2

Answer: b) variable1 is variable2

Question 33: What will be the output of the following code?

python

x = "Hello, "
y = "World!"
result = x + y
print(result)
a) Hello, World!
b) Hello,World!
c) HelloWorld!
d) Hello, World!

Answer: a) Hello, World!

Question 34: Which method is used to find the index of the first occurrence of a value in a list?

a) list.first_index(value)
b) list.find(value)
c) list.index(value)
d) list.get_index(value)

Answer: c) list.index(value)

Question 35: How do you check if a key exists in a dictionary in Python?

a) key.exists(dictionary)
b) key in dictionary
c) key.contains(dictionary)
d) dictionary.has_key(key)

Answer: b) key in dictionary

Question 36: What is the output of the following code?

python

```
x = 10
y = 3
result = x // y
print(result)
```

a) 3.33333333333
b) 3
c) 3.0
d) 3.33

Answer: b) 3

Question 37: Which data type is used to store decimal numbers in Python?

a) int
b) float
c) str
d) bool

Answer: b) float

Question 38: What will be the output of the following code?

python

```
x = 5
y = 3
result = x - y
print(result)
```

a) 8
b) 2
c) 15
d) -2

Answer: b) 2

Question 39: How do you check the length of a list in Python?

a) list.length()
b) list.len()
c) len(list)
d) list.size()

Answer: c) len(list)

Question 40: What is the correct way to create a tuple in Python?

a) tuple = [1, 2, 3]
b) tuple(1, 2, 3)
c) tuple{1, 2, 3}
d) tuple = (1, 2, 3)

Answer: d) tuple = (1, 2, 3)

Question 41: What is the output of the following code?

python

```
x = 5
y = 2
result = x % y
print(result)
```

a) 3

b) 2.5
c) 0.5
d) 1

Answer: d) 1

Question 42: How do you define a multiline string in Python?

a) 'This is a multiline string'
b) "This is a multiline string"
c) '''This is a multiline string'''
d) "This is a
multiline string"

Answer: c) '''This is a multiline string'''

Question 43: Which method is used to convert a string to lowercase in Python?

a) str.lower()
b) str.to_lower()
c) str.lowercase()
d) str.toLowercase()

Answer: a) str.lower()

Question 44: What will be the output of the following code?

python

```
x = 5
y = 3
result = x * y
print(result)
```

a) 15
b) 8
c) 53
d) 35

Answer: a) 15

Question 45: How do you check if a key exists in a dictionary in Python?

a) key.exists(dictionary)
b) key in dictionary
c) key.contains(dictionary)
d) dictionary.has_key(key)

Answer: b) key in dictionary

Question 46: What is the output of the following code?

python

```
x = 5
y = 2
result = x ** y
print(result)
```

a) 25
b) 7
c) 10
d) 4.0

Answer: a) 25

Question 47: Which data type is used to store true or false values in Python?

a) int
b) float
c) str
d) bool

Answer: d) bool

Question 48: How do you remove an item from a list in Python?

a) list.remove(item)
b) list.delete(item)
c) list.pop(item)
d) list.del(item)

Answer: a) list.remove(item)

Question 49: What will be the output of the following code?

python

x = 10
y = 3
result = x / y
print(result)
a) 3.33333333333
b) 3
c) 3.0
d) 3.33

Answer: c) 3.0

Question 50: Which of the following is a valid way to initialize an empty dictionary in Python?

a) dict = {}
b) dict()
c) dict = []
d) dictionary()

Answer: a) dict = {}

Question 1: Which Python keyword is used to define a function?

a) def
b) function
c) define
d) func

Answer: a) def

Question 2: What is the correct way to display the data type of a variable in Python?

a) typeof(variable)
b) type(variable)
c) var_type(variable)
d) data_type(variable)

Answer: b) type(variable)

Question 3: How do you check if a variable is of a specific data type in Python?

a) variable.type == data_type
b) isinstance(variable, data_type)
c) variable.data_type()
d) variable.is_type(data_type)

Answer: b) isinstance(variable, data_type)

Question 4: Which data type is used to store a collection of unique elements in Python?

a) list
b) tuple
c) set
d) dictionary

Answer: c) set

Question 5: What is the correct way to check if a key exists in a dictionary in Python?

a) key in dictionary
b) dictionary.contains(key)
c) key.exists(dictionary)
d) dictionary.has_key(key)

Answer: a) key in dictionary

Question 6: What is the result of the following expression?

python

(3 + 5) * 2
a) 16
b) 10
c) 14
d) 11

Answer: a) 16

Question 7: How do you access the last element of a list in Python?

a) list[-1]
b) list[last]
c) list.last()
d) list.get(-1)

Answer: a) list[-1]

Question 8: What is the output of the following code?

python

```
x = 15
y = 2
result = x // y
print(result)
```

a) 7.5
b) 7
c) 7.0
d) 8

Answer: b) 7

Question 9: Which operator is used for floor division in Python?

a) //
b) /
c) %
d) **

Answer: a) //

Question 10: What will be the output of the following code?

python

```
x = "Hello"
y = "World"
result = x + " " + y
print(result)
```

a) HelloWorld

b) Hello World
c) Hello+World
d) Error: cannot concatenate 'str' and 'str' objects.

Answer: b) Hello World

Question 11: How do you check if a number is positive in Python?

a) number.is_positive()
b) is_positive(number)
c) number > 0
d) number >= 0

Answer: c) number > 0

Question 12: What is the output of the following code?

python

```
x = 5
y = 3
result = x % y
print(result)
```

a) 3
b) 2.5
c) 0.5
d) 1

Answer: d) 1

Question 13: How do you define a multiline comment in Python?

a) // This is a multiline comment
b) /* This is a multiline comment */
c) ''' This is a multiline comment '''
d) <!-- This is a multiline comment -->

Answer: c) ''' This is a multiline comment '''

Question 14: Which of the following is NOT a valid way to represent a string in Python?

a) 'Hello, World!'

b) "Hello, World!"
c) '"Hello, World!"'
d) "Hello, World!"

Answer: d) "Hello, World!"

Question 15: What is the output of the following code?

python

```
x = 10
y = 3
result = x / y
print(result)
```

a) 3.33333333333
b) 3
c) 3.0
d) 3.33

Answer: c) 3.0

Question 16: How do you check if a value is present in a dictionary in Python?

a) dictionary.has_value(value)
b) value in dictionary
c) dictionary.contains(value)
d) value.exists(dictionary)

Answer: b) value in dictionary

Question 17: What will be the output of the following code?

python

```
x = 5
y = 2
result = x ** y
print(result)
```

a) 25
b) 7
c) 10
d) 4.0

Answer: a) 25

Question 18: Which method is used to convert a string to uppercase in Python?

a) str.to_upper()
b) str.to_uppercase()
c) str.uppercase()
d) str.upper()

Answer: d) str.upper()

Question 19: How do you remove all occurrences of an element from a list in Python?

a) list.remove_all(element)
b) list.remove(element)
c) list.pop_all(element)
d) list.clear(element)

Answer: b) list.remove(element)

Question 20: What is the output of the following code?

python

```
x = "Python"
print(x[1:4])
```

a) Pyt
b) pyt
c) yth
d) ytho

Answer: c) yth

Question 21: Which method is used to convert a string to title case in Python?

a) str.titlecase()
b) str.to_titlecase()
c) str.title()
d) str.toTitle()

Answer: c) str.title()

Question 22: How do you check if a list is empty in Python?

a) list.empty()
b) len(list) == 0
c) list.is_empty()
d) list.size() == 0

Answer: b) len(list) == 0

Question 23: What is the output of the following code?

python

```
x = 5
y = 3
result = x * y
print(result)
```

a) 15
b) 8
c) 53
d) 35

Answer: a) 15

Question 24: Which of the following is a valid way to initialize an empty set in Python?

a) set = {}
b) set()
c) set = []
d) set = ()

Answer: b) set()

Question 25: What is the output of the following code?

python

```
x = 10
y = 3
result = x // y
print(result)
```

a) 3.33333333333
b) 3
c) 3.0
d) 3.33

Answer: b) 3

Question 26: How do you access the first element of a list in Python?

a) list.first()
b) list[0]
c) list.get(0)
d) list[1]

Answer: b) list[0]

Question 27: What is the result of the following expression?

python

(4 + 6) / 2
a) 10
b) 5
c) 3
d) 2

Answer: b) 5

Question 28: How do you check if a number is negative in Python?

a) number.is_negative()
b) is_negative(number)
c) number < 0
d) number <= 0

Answer: c) number < 0

Question 29: What is the output of the following code?

python

x = "Hello"

y = "World"
result = x + " " + y
print(result)
a) HelloWorld
b) Hello World
c) Hello+World
d) Error: cannot concatenate 'str' and 'str' objects.

Answer: b) Hello World

Question 30: How do you access the second element of a tuple in Python?

a) tuple[2]
b) tuple.get(2)
c) tuple[1]
d) tuple.second()

Answer: c) tuple[1]

Question 31: What is the output of the following code?

python

x = 15
y = 2
result = x % y
print(result)
a) 7.5
b) 7
c) 7.0
d) 8

Answer: b) 7

Question 32: Which operator is used for exponentiation in Python?

a) ^
b) %
c) **
d) //

Answer: c) **

Question 33: What is the output of the following code?

python

```
x = "Hello"
y = "World"
result = x * 3
print(result)
```

a) HelloWorld
b) Hello World
c) HelloWorldHelloWorldHelloWorld
d) Error: cannot multiply 'str' and 'int' objects.

Answer: c) HelloWorldHelloWorldHelloWorld

Question 34: How do you check if a key exists in a dictionary in Python?

a) key.exists(dictionary)
b) key in dictionary
c) key.contains(dictionary)
d) dictionary.has_key(key)

Answer: b) key in dictionary

Question 35: What will be the output of the following code?

python

```
x = 5
y = 2
result = x ** y
print(result)
```

a) 25
b) 7
c) 10
d) 4.0

Answer: a) 25

Question 36: Which method is used to convert a string to uppercase in Python?

a) str.to_upper()
b) str.to_uppercase()
c) str.uppercase()
d) str.upper()

Answer: d) str.upper()

Question 37: How do you remove all occurrences of an element from a list in Python?

a) list.remove_all(element)
b) list.remove(element)
c) list.pop_all(element)
d) list.clear(element)

Answer: b) list.remove(element)

Question 38: What is the output of the following code?

python

x = "Python"
print(x[1:4])
a) Pyt
b) pyt
c) yth
d) ytho

Answer: c) yth

Question 39: Which method is used to convert a string to title case in Python?

a) str.titlecase()
b) str.to_titlecase()
c) str.title()
d) str.toTitle()

Answer: c) str.title()

Question 40: How do you check if a list is empty in Python?

a) list.empty()
b) len(list) == 0

c) list.is_empty()
d) list.size() == 0

Answer: b) len(list) == 0

Question 41: What is the output of the following code?

python

```
x = 5
y = 3
result = x * y
print(result)
```

a) 15
b) 8
c) 53
d) 35

Answer: a) 15

Question 42: Which of the following is a valid way to initialize an empty set in Python?

a) set = {}
b) set()
c) set = []
d) set = ()

Answer: b) set()

Question 43: What is the output of the following code?

python

```
x = 10
y = 3
result = x // y
print(result)
```

a) 3.33333333333
b) 3
c) 3.0
d) 3.33

Answer: b) 3

Question 44: How do you access the first element of a list in Python?

a) list.first()
b) list[0]
c) list.get(0)
d) list[1]

Answer: b) list[0]

Question 45: What is the result of the following expression?

python

(4 + 6) / 2
a) 10
b) 5
c) 3
d) 2

Answer: b) 5

Question 46: How do you check if a number is negative in Python?

a) number.is_negative()
b) is_negative(number)
c) number < 0
d) number <= 0

Answer: c) number < 0

Question 47: What is the output of the following code?

python

x = "Hello"
y = "World"
result = x + " " + y
print(result)
a) HelloWorld
b) Hello World

c) Hello+World
d) Error: cannot concatenate 'str' and 'str' objects.

Answer: b) Hello World

Question 48: How do you access the second element of a tuple in Python?

a) tuple[2]
b) tuple.get(2)
c) tuple[1]
d) tuple.second()

Answer: c) tuple[1]

Question 49: What is the output of the following code?

python

```
x = 15
y = 2
result = x % y
print(result)
```

a) 7.5
b) 7
c) 7.0
d) 8

Answer: b) 7

Question 50: Which operator is used for exponentiation in Python?

a) ^
b) %
c) **
d) //

Answer: c) **

Question 1: What will be the output of the following code?

python

```
x = "5"
y = 3
result = x + y
print(result)
```

a) 8
b) "5" + 3
c) TypeError: can only concatenate str (not "int") to str
d) "53"

Answer: c) TypeError: can only concatenate str (not "int") to str

Explanation: The code tries to concatenate a string ('5') and an integer (3), which is not allowed in Python, causing a TypeError.

Question 2: What is the output of the following code?

python

```
x = 10
y = 2
z = 5
result = x + y * z
print(result)
```

a) 20
b) 30
c) 60
d) 100

Answer: c) 60

Explanation: The expression is evaluated as x + (y * z), which is 10 + (2 * 5) = 10 + 10 = 20.

Question 3: What will be the output of the following code?

python

```
x = 5
y = "2"
result = x + int(y)
print(result)
```

a) 7
b) 52

c) "5" + "2"
d) TypeError: unsupported operand type(s) for +: 'int' and 'str'

Answer: a) 7

Explanation: The code converts the string "2" to an integer using int(y) and then adds it to the integer value of x. The result is 5 + 2 = 7.

Question 4: What is the output of the following code?

python

```
x = 10
y = 3
result = x / y
print(result)
```

a) 3.3333333333333335
b) 3.333333333333333
c) 3.3333333333333333
d) 3.33

Answer: a) 3.3333333333333335

Explanation: In Python 3, division of two integers results in a float. So, 10 / 3 will give 3.3333333333333335.

Question 5: What will be the output of the following code?

python

```
x = "Hello"
y = 3
result = x * y
print(result)
```

a) HelloHelloHello
b) Hello 3 times
c) Hello3
d) TypeError: can't multiply sequence by non-int of type 'str'

Answer: a) HelloHelloHello

Explanation: The string "Hello" is multiplied by 3, which results in concatenating it with itself three times.

Question 6: What is the output of the following code?

python

```
x = 5
y = 3
result = x ** y
print(result)
```

a) 125
b) 15
c) 8
d) 243

Answer: a) 125

Explanation: The expression is evaluated as x ** y, which is 5 ** 3 = 125.

Question 7: What will be the output of the following code?

python

```
x = 10
y = 3
result = x // y
print(result)
```

a) 3
b) 3.0
c) 3.3333333333333335
d) 3.333333333333333

Answer: a) 3

Explanation: The // operator is used for floor division, which truncates the decimal part and gives the integer quotient.

Question 8: What is the output of the following code?

python

```
x = "Hello"
y = 2
result = x ** y
print(result)
```

a) "HelloHello"
b) "Hello2"
c) TypeError: unsupported operand type(s) for ** or pow(): 'str' and 'int'
d) Error: cannot multiply 'str' and 'int' objects.

Answer: c) TypeError: unsupported operand type(s) for ** or pow(): 'str' and 'int'

Explanation: The code tries to use the exponentiation operator (**) on a string, which is not supported in Python, causing a TypeError.

Question 9: What will be the output of the following code?

python

```
x = 5
y = 2
result = x % y
print(result)
```

a) 3
b) 2.5
c) 0.5
d) 1

Answer: d) 1

Explanation: The % operator returns the remainder of the division of x by y, which is 5 % 2 = 1.

Question 10: What is the output of the following code?

python

```
x = 5
y = 3
result = x * y
print(result)
```

a) 15
b) 8
c) 53

d) 35

Answer: a) 15

Explanation: The multiplication of two integers 5 * 3 results in 15.

Question 11: What will be the output of the following code?

python

```
x = 2
y = 3
result = x ** y
print(result)
```

a) 6
b) 5
c) 8
d) 9

Answer: d) 9

Explanation: The expression is evaluated as x ** y, which is 2 ** 3 = 8.

Question 12: What is the output of the following code?

python

```
x = 5
y = "2"
result = x * int(y)
print(result)
```

a) 10
b) 5
c) 52
d) TypeError: can't multiply sequence by non-int of type 'str'

Answer: c) 52

Explanation: The code converts the string "2" to an integer using int(y) and then multiplies it with the integer value of x. The result is 5 * 2 = 10.

Question 13: What will be the output of the following code?

python

```
x = "Hello"
y = 3
result = y * x
print(result)
```

a) HelloHelloHello
b) HelloHelloHelloHelloHelloHelloHello
c) Hello3
d) TypeError: can't multiply sequence by non-int of type 'str'

Answer: d) TypeError: can't multiply sequence by non-int of type 'str'

Explanation: The code tries to multiply a string by an integer, but the multiplication operation is not supported in this order, resulting in a TypeError.

Question 14: What is the output of the following code?

python

```
x = 10
y = 3
result = x / y
print(result)
```

a) 3.3333333333333335
b) 3.333333333333333
c) 3.3333333333333333
d) 3.33

Answer: a) 3.3333333333333335

Explanation: In Python 3, division of two integers results in a float. So, 10 / 3 will give 3.3333333333333335.

Question 15: What will be the output of the following code?

python

```
x = "5"
y = 3
result = int(x) + y
```

print(result)
a) 8
b) "5" + 3
c) TypeError: can only concatenate str (not "int") to str
d) "53"

Answer: a) 8

Explanation: The code converts the string "5" to an integer using int(x) and then adds it to the integer value of y. The result is 5 + 3 = 8.

Question 1: What is the purpose of flow control in programming?

a) To create loops
b) To manage the order of program execution
c) To define functions
d) To print output

Answer: b) To manage the order of program execution

Question 2: Which keyword is used to define conditional branching in Python?

a) for
b) loop
c) if
d) else

Answer: c) if

Question 3: What will be the output of the following code?

python

```
x = 5
if x > 2:
    print("Greater than 2")
elif x < 2:
    print("Less than 2")
else:
    print("Equal to 2")
```

a) Greater than 2
b) Less than 2

c) Equal to 2
d) Greater than 2 and Equal to 2

Answer: a) Greater than 2

Question 4: In Python, what will be the value of x after the following code is executed?

python

```
x = 10
if x > 5:
    x = x + 5
```

a) 10
b) 15
c) 5
d) 20

Answer: b) 15

Question 5: What is the output of the following code?

python

```
x = 5
if x > 2:
    print("Greater than 2")
if x < 2:
    print("Less than 2")
else:
    print("Not Less than 2")
```

a) Greater than 2
b) Less than 2
c) Not Less than 2
d) Greater than 2 and Not Less than 2

Answer: a) Greater than 2
c) Not Less than 2

Question 6: What is the result of the following code?

python

```
x = 5
if x > 2:
    if x < 10:
        print("Between 2 and 10")
    else:
        print("Greater than or equal to 10")
else:
    print("Less than or equal to 2")
```

a) Between 2 and 10
b) Greater than or equal to 10
c) Less than or equal to 2
d) Both Between 2 and 10 and Greater than or equal to 10

Answer: a) Between 2 and 10

Question 7: What will be the output of the following code?

python

```
x = 7
if x > 5:
    print("Greater than 5")
elif x > 10:
    print("Greater than 10")
else:
    print("Less than or equal to 5")
```

a) Greater than 5
b) Greater than 10
c) Less than or equal to 5
d) Greater than 5 and Greater than 10

Answer: a) Greater than 5

Question 8: How many times will the following loop run?

python

```
for i in range(5):
    print(i)
```

a) 4 times
b) 5 times
c) 6 times

d) 0 times

Answer: b) 5 times

Question 9: What is the output of the following code?

python

```
for i in range(2, 5):
    print(i)
```

a) 2, 3, 4
b) 0, 1, 2
c) 2, 3
d) 3, 4

Answer: a) 2, 3, 4

Question 10: What is the result of the following code?

python

```
sum = 0
for i in range(1, 5):
    sum += i
print(sum)
```

a) 10
b) 6
c) 4
d) 5

Answer: b) 6

Question 11: What is the output of the following code?

python

```
x = 0
while x < 5:
    x += 1
    if x == 3:
        break
    print(x)
```

a) 1, 2, 3
b) 1, 2
c) 1, 2, 4
d) 1, 2, 4, 5

Answer: b) 1, 2

Question 12: What is the output of the following code?

python

```
x = 0
while x < 5:
    x += 1
    if x == 3:
        continue
    print(x)
```

a) 1, 2, 3
b) 1, 2
c) 1, 2, 4
d) 1, 2, 4, 5

Answer: c) 1, 2, 4

Question 13: How many times will the following loop run?

python

```
x = 1
while x <= 10:
    x += 2
```

a) 4 times
b) 5 times
c) 6 times
d) Infinite loop

Answer: b) 5 times

Question 14: What is the output of the following code?

python

```
for i in range(3):
    for j in range(2):
        print(i, j)
```

a) (0, 0) (0, 1) (1, 0) (1, 1) (2, 0) (2, 1)
b) (1, 0) (1, 1) (2, 0) (2, 1)
c) (0, 0) (1, 0) (2, 0) (0, 1) (1, 1) (2, 1)
d) (0, 0) (0, 1) (1, 0) (1, 1) (2, 0) (2, 1) (3, 0) (3, 1)

Answer: a) (0, 0) (0, 1) (1, 0) (1, 1) (2, 0) (2, 1)

Question 15: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        print(i + j, end=' ')
    print()
```

a) 0 1 2 1 2 3 2 3 4
b) 0 1 2 3 4 5 6 7 8
c) 1 2 3 2 3 4 3 4 5
d) 1 2 3 4 5 6 7 8 9

Answer: c) 1 2 3 2 3 4 3 4 5

Question 16: What is the output of the following code?

python

```
for i in range(3):
    for j in range(1, i+2):
        print(j, end=' ')
    print()
```

a) 1 2 3 2 3 4 3 4 5
b) 1 1 2 1 2 3 1 2 3
c) 1 2 2 3 3 3
d) 1 2 3 4 5

Answer: b) 1 1 2 1 2 3 1 2 3

Question 17: What will be the output of the following code?

python

```
x = 0
while x < 5:
    x += 1
    if x == 3:
        continue
    print(x)
    if x == 4:
        break
```

a) 1, 2, 4
b) 1, 2, 4, 5
c) 1, 2, 4, 5, 6
d) 1, 2, 4, 5, 6, 7

Answer: a) 1, 2, 4

Question 18: What is the output of the following code?

python

```
x = 5
while x > 0:
    x -= 1
    if x == 3:
        continue
    print(x)
```

a) 4, 2, 1, 0
b) 5, 4, 2, 1, 0
c) 5, 4, 1, 0
d) 5, 4, 3, 1, 0

Answer: d) 5, 4, 3, 1, 0

Question 19: How many times will the following loop run?

python

```
x = 5
while x > 0:
    x -= 2
```

a) 1 time

b) 2 times
c) 3 times
d) Infinite loop

Answer: c) 3 times

Question 20: What is the output of the following code?

python

```
for i in range(5):
    if i == 2:
        break
    print(i)
```

a) 0, 1
b) 0, 1, 2
c) 1, 2
d) 0, 1, 2, 3, 4

Answer: a) 0, 1

Question 21: What is the output of the following code?

python

```
for i in range(5):
    if i == 2:
        continue
    print(i)
```

a) 0, 1, 3, 4
b) 0, 1, 2, 3, 4
c) 0, 1, 2
d) 1, 2, 3, 4

Answer: a) 0, 1, 3, 4

Question 22: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
```

```
        if i == j:
            break
        print(i, j)
```

a) 0 1
b) 0 0 1 2
c) 1 0
d) 0 1 2

Answer: a) 0 1

Question 23: What will be the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            continue
        print(i, j)
```

a) 0 1
b) 0 0 1 2
c) 1 0
d) 0 1 2

Answer: c) 1 0

Question 24: How many times will the following loop run?

python

```
for i in range(3):
    for j in range(3):
        if i + j == 2:
            break
```

a) 1 time
b) 2 times
c) 3 times
d) 4 times

Answer: c) 3 times

Question 25: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i + j == 2:
            continue
        print(i, j)
```

a) 0 0 0 1 1 0 1 1
b) 0 0 0 1 1 0 1 1 2 0 2 1 2 2
c) 0 0 0 1 1 0 1 1 2 0 2 1
d) 0 0 0 1 1 0 1 1 2 0

Answer: c) 0 0 0 1 1 0 1 1 2 0 2 1

Question 26: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            continue
        print(i, j)
```

a) 0 1 0 2 1 0 1 2 2 0 2 1
b) 0 0 1 0 1 2 2 0 2 1
c) 0 1 0 2 1 0 1 2
d) 0 1 2

Answer: a) 0 1 0 2 1 0 1 2 2 0 2 1

Question 27: What is the output of the following code?

python

```
x = 5
while x > 0:
    x -= 1
    if x == 3:
        break
    print(x)
```

a) 4, 2, 1, 0

b) 5, 4, 2, 1, 0
c) 5, 4, 1, 0
d) 5, 4, 3, 1, 0

Answer: a) 4, 2, 1, 0

Question 28: How many times will the following loop run?

python

```
x = 5
while x > 0:
    x -= 2
```

a) 1 time
b) 2 times
c) 3 times
d) Infinite loop

Answer: c) 3 times

Question 29: What is the output of the following code?

python

```
for i in range(5):
    if i == 2:
        break
    print(i)
```

a) 0, 1
b) 0, 1, 2
c) 1, 2
d) 0, 1, 2, 3, 4

Answer: a) 0, 1

Question 30: What is the output of the following code?

python

```
for i in range(5):
    if i == 2:
        continue
```

```
    print(i)
```

a) 0, 1, 3, 4
b) 0, 1, 2, 3, 4
c) 0, 1, 2
d) 1, 2, 3, 4

Answer: a) 0, 1, 3, 4

Question 31: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            break
        print(i, j)
```

a) 0 1
b) 0 0 1 2
c) 1 0
d) 0 1 2

Answer: a) 0 1

Question 32: What will be the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            continue
        print(i, j)
```

a) 0 1
b) 0 0 1 2
c) 1 0
d) 0 1 2

Answer: c) 1 0

Question 33: How many times will the following loop run?

python

```
for i in range(3):
    for j in range(3):
        if i + j == 2:
            break
```

a) 1 time
b) 2 times
c) 3 times
d) 4 times

Answer: c) 3 times

Question 34: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i + j == 2:
            continue
        print(i, j)
```

a) 0 0 0 1 1 0 1 1
b) 0 0 0 1 1 0 1 1 2 0 2 1 2 2
c) 0 0 0 1 1 0 1 1 2 0 2 1
d) 0 0 0 1 1 0 1 1 2 0

Answer: c) 0 0 0 1 1 0 1 1 2 0 2 1

Question 35: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            continue
        print(i, j)
```

a) 0 1 0 2 1 0 1 2 2 0 2 1
b) 0 0 1 0 1 2 2 0 2 1
c) 0 1 0 2 1 0 1 2
d) 0 1 2

Answer: a) 0 1 0 2 1 0 1 2 2 0 2 1

Question 36: What is the output of the following code?

python

```
x = 5
while x > 0:
    x -= 1
    if x == 3:
        break
    print(x)
```

a) 4, 2, 1, 0
b) 5, 4, 2, 1, 0
c) 5, 4, 1, 0
d) 5, 4, 3, 1, 0

Answer: a) 4, 2, 1, 0

Question 37: How many times will the following loop run?

python

```
x = 5
while x > 0:
    x -= 2
```

a) 1 time
b) 2 times
c) 3 times
d) Infinite loop

Answer: c) 3 times

Question 38: What is the output of the following code?

python

```
for i in range(5):
    if i == 2:
        break
    print(i)
```

a) 0, 1
b) 0, 1, 2
c) 1, 2
d) 0, 1, 2, 3, 4

Answer: a) 0, 1

Question 39: What is the output of the following code?

python

```
for i in range(5):
    if i == 2:
        continue
    print(i)
```

a) 0, 1, 3, 4
b) 0, 1, 2, 3, 4
c) 0, 1, 2
d) 1, 2, 3, 4

Answer: a) 0, 1, 3, 4

Question 40: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            break
        print(i, j)
```

a) 0 1
b) 0 0 1 2
c) 1 0
d) 0 1 2

Answer: a) 0 1

Question 41: What will be the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            continue
        print(i, j)
```

a) 0 1
b) 0 0 1 2
c) 1 0
d) 0 1 2

Answer: c) 1 0

Question 42: How many times will the following loop run?

python

```
for i in range(3):
    for j in range(3):
        if i + j == 2:
            break
```

a) 1 time
b) 2 times
c) 3 times
d) 4 times

Answer: c) 3 times

Question 43: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i + j == 2:
            continue
        print(i, j)
```

a) 0 0 0 1 1 0 1 1
b) 0 0 0 1 1 0 1 1 2 0 2 1 2 2
c) 0 0 0 1 1 0 1 1 2 0 2 1
d) 0 0 0 1 1 0 1 1 2 0

Answer: c) 0 0 0 1 1 0 1 1 2 0 2 1

Question 44: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            continue
        print(i, j)
```

a) 0 1 0 2 1 0 1 2 2 0 2 1
b) 0 0 1 0 1 2 2 0 2 1
c) 0 1 0 2 1 0 1 2
d) 0 1 2

Answer: a) 0 1 0 2 1 0 1 2 2 0 2 1

Question 45: What is the output of the following code?

python

```
x = 5
while x > 0:
    x -= 1
    if x == 3:
        break
    print(x)
```

a) 4, 2, 1, 0
b) 5, 4, 2, 1, 0
c) 5, 4, 1, 0
d) 5, 4, 3, 1, 0

Answer: a) 4, 2, 1, 0

Question 46: How many times will the following loop run?

python

```
x = 5
while x > 0:
    x -= 2
```

a) 1 time

b) 2 times
c) 3 times
d) Infinite loop

Answer: c) 3 times

Question 47: What is the output of the following code?

python

```
for i in range(5):
    if i == 2:
        break
    print(i)
```

a) 0, 1
b) 0, 1, 2
c) 1, 2
d) 0, 1, 2, 3, 4

Answer: a) 0, 1

Question 48: What is the output of the following code?

python

```
for i in range(5):
    if i == 2:
        continue
    print(i)
```

a) 0, 1, 3, 4
b) 0, 1, 2, 3, 4
c) 0, 1, 2
d) 1, 2, 3, 4

Answer: a) 0, 1, 3, 4

Question 49: What is the output of the following code?

python

```
for i in range(3):
    for j in range(3):
```

```
        if i == j:
            break
        print(i, j)
```

a) 0 1
b) 0 0 1 2
c) 1 0
d) 0 1 2

Answer: a) 0 1

Question 50: What will be the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            continue
        print(i, j)
```

a) 0 1
b) 0 0 1 2
c) 1 0
d) 0 1 2

Answer: c) 1 0

Question 1: What will be the output of the following code?

python

```
x = 5
if x > 2:
    if x < 10:
        print("A")
    else:
        print("B")
else:
    print("C")
```

a) A
b) B
c) C

d) None of the above

Answer: a) A

Explanation: The value of x is 5, which satisfies the condition x > 2 and also x < 10. So, the code will print "A".

Question 2: What is the output of the following code?

python

```
x = 10
y = 3
result = x // y
print(result)
```

a) 3
b) 3.33
c) 3.0
d) 3.3333333333333335

Answer: a) 3

Explanation: The // operator performs integer division in Python. So, 10 // 3 will give 3.

Question 3: What is the output of the following code?

python

```
x = 5
y = 10
if x > y:
    print("X is greater")
elif x < y:
    print("Y is greater")
```

a) X is greater
b) Y is greater
c) X is greater and Y is greater
d) None of the above

Answer: b) Y is greater

Explanation: The condition x < y is true because 5 is less than 10, so the code will print "Y is greater".

Question 4: What will be the value of x after the following code is executed?

python

```
x = 5
while x > 0:
    x -= 1
    if x == 3:
        continue
print(x)
```

a) 2
b) 1
c) 0
d) -1

Answer: c) 0

Explanation: The loop will run until x becomes 0. When x is 3, the continue statement will skip the remaining code inside the loop for that iteration. Therefore, the loop will eventually decrement x to 0 and then terminate. The final value of x printed will be 0.

Question 5: What is the output of the following code?

python

```
for i in range(1, 4):
    for j in range(1, i+1):
        print(i, end='')
    print()
```

a) 1
b) 22
c) 333
d) 1 2 3

Answer: c) 333

Explanation: The code uses nested loops to print the value of i repeatedly on each line. The outer loop runs three times (i.e., i takes values 1, 2, and 3). The inner loop will print the value of i on each line according to its current value. Therefore, it will print 1 three times, 2 two times, and 3 three times, resulting in the output "333".

Question 6: What will be the output of the following code?

python

```
x = 5
while x > 0:
    x -= 1
    if x == 2:
        break
print(x)
```

a) 2
b) 1
c) 0
d) -1

Answer: a) 2

Explanation: The loop will run until x becomes 0. When x is 2, the break statement will terminate the loop immediately. The final value of x printed will be 2.

Question 7: What is the output of the following code?

python

```
x = 10
while x > 0:
    x -= 2
    if x == 6:
        continue
    print(x)
```

a) 8 4 2 0
b) 10 8 6 4 2 0
c) 10 8 4 2 0
d) 10 8 6 2 0

Answer: a) 8 4 2 0

Explanation: The loop will run until x becomes 0. When x is 6, the continue statement will skip the remaining code inside the loop for that iteration. Therefore, 6 will not be printed. The loop will continue with the next iteration. The final values of x printed will be 8, 4, 2, and 0.

Question 8: What will be the output of the following code?

python

```
x = 5
while x > 0:
    x -= 1
    if x == 0:
        break
print(x)
```

a) 4
b) 3
c) 2
d) 1

Answer: a) 4

Explanation: The loop will run until x becomes 0. When x is 0, the break statement will terminate the loop immediately without decrementing x further. The final value of x printed will be 4.

Question 9: What is the output of the following code?

python

```
x = 5
while x > 0:
    x -= 1
    if x == 3:
        continue
    print(x)
```

a) 4 2 1 0
b) 5 4 2 1 0
c) 5 4 1 0
d) 5 4 3 1 0

Answer: a) 4 2 1 0

Explanation: The loop will run until x becomes 0. When x is 3, the continue statement will skip the remaining code inside the loop for that iteration. Therefore, 3 will not be printed. The loop will continue with the next iteration. The final values of x printed will be 4, 2, 1, and 0.

Question 10: What will be the output of the following code?

python

```
for i in range(3):
    for j in range(3):
        if i == j:
            continue
        print(i, j)
```

a) 0 1 0 2 1 0 1 2
b) 0 0 1 0 1 2 2 0 2 1
c) 0 1 0 2 1 0 1 2 2 0 2 1
d) 0 1 2

Answer: a) 0 1 0 2 1 0 1 2

Explanation: The code uses nested loops to print the values of i and j where i is not equal to j. The outer loop runs three times (i.e., i takes values 0, 1, and 2). The inner loop runs three times for each value of i. When i is equal to j, the continue statement will skip that iteration. Therefore, the code will print all combinations of i and j where i is not equal to j. The output will be "0 1 0 2 1 0 1 2".

Question 1: What is the purpose of the "break" statement in programming?
a) To terminate the current loop and continue with the next iteration
b) To skip the current iteration and continue with the next one
c) To exit the entire program
d) To pause the execution of the program temporarily

Answer: a) To terminate the current loop and continue with the next iteration

Question 2: Which control structure allows the use of the "break" statement?
a) if-else
b) for loop
c) switch case
d) while loop

Answer: b) for loop

Question 3: When is the "break" statement commonly used?
a) To start a loop
b) To skip an iteration
c) To exit a loop prematurely
d) To pause the program

Answer: c) To exit a loop prematurely

Question 4: In a nested loop scenario, which loop will the "break" statement terminate?
a) Only the innermost loop
b) Only the outermost loop
c) All the nested loops
d) It depends on the condition specified

Answer: a) Only the innermost loop

Question 5: What does the "continue" statement do in a loop?
a) Skips the remaining code in the loop and proceeds to the next iteration
b) Terminates the loop and resumes the program execution
c) Pauses the loop temporarily
d) Restarts the loop from the beginning

Answer: a) Skips the remaining code in the loop and proceeds to the next iteration

Question 6: Which control structure allows the use of the "continue" statement?
a) do-while loop
b) switch case
c) for loop
d) if-else

Answer: c) for loop

Question 7: What is the primary use of the "continue" statement?
a) To skip the current loop and exit the loop immediately
b) To pause the loop temporarily
c) To restart the loop from the beginning
d) To skip the current iteration and proceed with the next one

Answer: d) To skip the current iteration and proceed with the next one

Question 8: In a loop with nested if-else statements, where would the "continue" statement take effect?
a) Only within the if-else block
b) Only within the else block
c) Within both the if and else blocks
d) Outside the if-else blocks

Answer: c) Within both the if and else blocks

Question 9: How does the "continue" statement differ from the "break" statement?
a) "Continue" terminates the loop, while "break" skips the current iteration.
b) "Continue" exits the entire program, while "break" skips the current iteration.
c) "Continue" skips the current iteration, while "break" terminates the loop.
d) "Continue" and "break" are identical and can be used interchangeably.

Answer: c) "Continue" skips the current iteration, while "break" terminates the loop.

Question 10: Which of the following is true about the "break" and "continue" statements?
a) Both "break" and "continue" can only be used with while loops.
b) Both "break" and "continue" can only be used with for loops.
c) Both "break" and "continue" can be used with all types of loops.
d) Neither "break" nor "continue" can be used with loops.

Answer: c) Both "break" and "continue" can be used with all types of loops.
Question 1: In Python, which of the following data types is used to store a sequence of characters?
a) Integer
b) String
c) Float
d) Boolean

Answer: b) String

Question 2: Which method is used to find the length of a string in Python?
a) len()
b) length()
c) size()
d) count()

Answer: a) len()

Question 3: What will be the output of the following code snippet?

python

```
string_var = "Hello, World!"
print(string_var[7])
```

a) H
b) ,
c) W
d) r

Answer: c) W

Question 4: Which of the following methods is used to convert a string to uppercase in Python?
a) toUpperCase()
b) upper()
c) uppercase()
d) to_uppercase()

Answer: b) upper()

Question 5: What is the result of the following operation in Python?

python

"Hello" + " " + "World"
a) "Hello World"
b) "HelloWorld"
c) "Hello World"
d) "Hello+World"

Answer: a) "Hello World"

Question 6: Which method is used to check if a string contains only alphabetical characters?
a) isalpha()
b) isnumeric()
c) isdigit()
d) isalnum()

Answer: a) isalpha()

Question 7: Which of the following is the correct way to access the last character of a string in Python?
a) string_var[last]
b) string_var[-1]
c) string_var[last()]
d) string_var[-1()]

Answer: b) string_var[-1]

Question 8: What does the following Python code do?

python

word = "Python"
result = word[::-1]
print(result)
a) Reverses the string and prints "nohtyP"
b) Prints "Python" in reverse order
c) Raises a syntax error
d) Prints "not a palindrome"

Answer: a) Reverses the string and prints "nohtyP"

Question 9: Which method is used to remove leading and trailing whitespaces from a string?
a) trim()
b) strip()
c) clean()
d) remove()

Answer: b) strip()

Question 10: What is the output of the following code in Python?

python

str1 = "apple"
str2 = "banana"
result = str1 + str2
print(result)
a) applebanana
b) apple,banana
c) apple + banana
d) Error: cannot concatenate 'str' and 'str'

Answer: a) applebanana

Question 11: Tuples are denoted by which type of brackets in Python?
a) {}
b) ()
c) []
d) <>

Answer: b) ()

Question 12: Can the elements of a tuple be modified after its creation?
a) Yes, using the 'modify()' method
b) Yes, using indexing and assignment
c) No, tuples are immutable
d) No, tuples are constant

Answer: c) No, tuples are immutable

Question 13: What is the result of the following operation in Python?

python

```
tuple1 = (1, 2, 3)
tuple2 = (4, 5, 6)
result = tuple1 + tuple2
print(result)
```

a) (1, 2, 3, 4, 5, 6)
b) (1, 2, 3) + (4, 5, 6)
c) (5, 7, 9)
d) Error: cannot concatenate tuples

Answer: a) (1, 2, 3, 4, 5, 6)

Question 14: How do you access the second element of a tuple named 'my_tuple' in Python?
a) my_tuple[2]
b) my_tuple(2)
c) my_tuple.2
d) my_tuple[1]

Answer: d) my_tuple[1]

Question 15: What is the purpose of the 'count()' method in Python tuples?
a) To count the number of elements in the tuple
b) To count the occurrences of a specific element in the tuple
c) To count the total number of tuples in a list
d) To count the occurrences of a tuple in a dictionary

Answer: b) To count the occurrences of a specific element in the tuple

Question 1: What is the purpose of the "pass" statement in Python?
a) To pause the program temporarily
b) To skip the current iteration in a loop

c) To define a placeholder for future code
d) To terminate the program immediately

Answer: c) To define a placeholder for future code

Question 2: What will happen when the "pass" statement is executed?
a) It will raise a syntax error
b) It will execute the code inside the "pass" block
c) It will skip the code inside the "pass" block
d) It will pause the program indefinitely

Answer: c) It will skip the code inside the "pass" block

Question 3: In which scenario is the "pass" statement commonly used?
a) To terminate a loop prematurely
b) To pause the program execution
c) To create an empty function or class
d) To skip an iteration in a loop

Answer: c) To create an empty function or class

Question 4: How is the "pass" statement different from a comment?
a) Comments are used for debugging, while "pass" is used for empty blocks
b) "Pass" is used for single-line comments, while comments are used for multi-line explanations
c) Comments are ignored during runtime, while "pass" is executed like any other statement
d) There is no difference; "pass" and comments are interchangeable

Answer: c) Comments are ignored during runtime, while "pass" is executed like any other statement

Question 5: Which of the following statements is true about the "pass" statement?
a) It can only be used in loops
b) It can only be used in functions
c) It can be used anywhere in the code
d) It can be used only in conditional statements

Answer: c) It can be used anywhere in the code

Strings:

Question 6: What is the output of the following code in Python?

python

str1 = "Hello"
str2 = "World"
result = str1 + str2
print(result)
a) "Hello World"
b) "HelloWorld"
c) "Hello World"
d) "Hello+World"

Answer: a) "Hello World"

Question 7: Which method is used to find the length of a string in Python?
a) len()
b) length()
c) size()
d) count()

Answer: a) len()

Question 8: How do you access the last character of a string named 'my_string' in Python?
a) my_string[-1]
b) my_string(last)
c) my_string[len(my_string)]
d) my_string.last()

Answer: a) my_string[-1]

Question 9: What will be the output of the following code in Python?

python

string_var = "Python is fun!"
print(string_var[7:9])
a) "is"
b) "is "
c) " is"
d) "fun"

Answer: a) "is"

Question 10: Which method is used to convert a string to uppercase in Python?

a) toUpperCase()
b) upper()
c) uppercase()
d) to_uppercase()

Answer: b) upper()

Question 11: What does the following Python code do?

python

```
word = "Python"
result = word[::-1]
print(result)
```

a) Reverses the string and prints "nohtyP"
b) Prints "Python" in reverse order
c) Raises a syntax error
d) Prints "not a palindrome"

Answer: a) Reverses the string and prints "nohtyP"

Question 12: Which method is used to remove leading and trailing whitespaces from a string?
a) trim()
b) strip()
c) clean()
d) remove()

Answer: b) strip()

Tuples:

Question 13: Tuples are denoted by which type of brackets in Python?
a) {}
b) ()
c) []
d) <>

Answer: b) ()

Question 14: Can the elements of a tuple be modified after its creation?
a) Yes, using the 'modify()' method
b) Yes, using indexing and assignment

c) No, tuples are immutable
d) No, tuples are constant

Answer: c) No, tuples are immutable

Question 15: What is the result of the following operation in Python?

python

```
tuple1 = (1, 2, 3)
tuple2 = (4, 5, 6)
result = tuple1 + tuple2
print(result)
```

a) (1, 2, 3, 4, 5, 6)
b) (1, 2, 3) + (4, 5, 6)
c) (5, 7, 9)
d) Error: cannot concatenate tuples

Answer: a) (1, 2, 3, 4, 5, 6)

Question 16: How do you access the second element of a tuple named 'my_tuple' in Python?
a) my_tuple[2]
b) my_tuple(2)
c) my_tuple.2
d) my_tuple[1]

Answer: d) my_tuple[1]

Question 17: What is the purpose of the 'count()' method in Python tuples?
a) To count the number of elements in the tuple
b) To count the occurrences of a specific element in the tuple
c) To count the total number of tuples in a list
d) To count the occurrences of a tuple in a dictionary

Answer: b) To count the occurrences of a specific element in the tuple

Question 18: Which of the following is a valid way to create an empty tuple in Python?
a) tuple_var = []
b) tuple_var = {}
c) tuple_var = ()
d) tuple_var = None

Answer: c) tuple_var = ()

Question 19: What is the output of the following code in Python?

python

```
my_tuple = (1, 2, 3, 4, 5)
result = my_tuple[1:4]
print(result)
```

a) (1, 2, 3, 4)
b) (2, 3, 4)
c) (2, 3, 4, 5)
d) (1, 2, 3)

Answer: b) (2, 3, 4)

Question 20: How do you check if a specific element exists in a tuple?
a) Using the 'contains()' method
b) Using the 'in' keyword
c) Using the 'exist()' function
d) Using the 'has()' method

Answer: b) Using the 'in' keyword

Question 21: What is the output of the following code in Python?

python

```
my_tuple = (10, 20, 30, 40, 50)
result = my_tuple[-3]
print(result)
```

a) 10
b) 30
c) 40
d) 50

Answer: b) 30

Question 22: Which of the following methods is used to find the index of the first occurrence of a specific element in a tuple?
a) index()
b) find()

c) search()
d) position()

Answer: a) index()

Question 23: What is the output of the following code in Python?

python

```
my_tuple = (1, 2, 3, 4, 5, 4)
result = my_tuple.count(4)
print(result)
```

a) 0
b) 1
c) 2
d) 3

Answer: c) 2

Question 24: How do you create a tuple with a single element in Python?
a) single_tuple = (1)
b) single_tuple = 1
c) single_tuple = (1,)
d) single_tuple = [1]

Answer: c) single_tuple = (1,)

Question 25: What is the output of the following code in Python?

python

```
my_tuple = (1, 2, 3, 4, 5)
result = my_tuple[::-1]
print(result)
```

a) (1, 2, 3, 4, 5)
b) (5, 4, 3, 2, 1)
c) (5, 4, 3, 2)
d) (1, 5, 4, 3, 2)

Answer: b) (5, 4, 3, 2, 1)

Question 1: What is the correct way to access the first character of a string named 'my_string' in Python?

a) my_string(0)
b) my_string[0]
c) my_string.first()
d) my_string[-1]

Answer: b) my_string[0]

Question 2: What will be the output of the following code in Python?

python

```
text = "Python"
print(text[2])
```

a) "t"
b) "h"
c) "o"
d) "y"

Answer: a) "t"

Question 3: How do you access the last character of a string named 'word' in Python?
a) word[-1]
b) word.last()
c) word[len(word)]
d) word[end()]

Answer: a) word[-1]

Question 4: What is the output of the following code in Python?

python

```
message = "Hello, World!"
print(message[7:12])
```

a) "Hello"
b) "World"
c) ", Wor"
d) "World!"

Answer: b) "World"

Question 5: Which of the following statements is true regarding accessing strings in Python?

a) Strings cannot be accessed character by character
b) Strings can only be accessed from the end to the beginning
c) Strings in Python are 0-indexed, and individual characters can be accessed using square brackets []
d) Strings in Python can only be accessed using the 'access()' function

Answer: c) Strings in Python are 0-indexed, and individual characters can be accessed using square brackets []

Question 6: What is the output of the following code in Python?

python

text = "Hello, Python!"
print(text[:5])
a) "Hello"
b) "Hello,"
c) "Python"
d) "Pytho"

Answer: a) "Hello"

Question 7: How do you access the second-to-last character of a string named 'text' in Python?
a) text[-2]
b) text[-1]
c) text[len(text)-2]
d) text[1]

Answer: a) text[-2]

Question 8: What is the correct way to access a substring of a string named 'text' starting from the 4th character to the end?
a) text[4:]
b) text[:4]
c) text[3:]
d) text[4:end]

Answer: a) text[4:]

Question 9: What will be the output of the following code in Python?

python

message = "Welcome to Python"
print(message[-6:-2])
a) "Welcome"
b) "come"
c) "thon"
d) "Pyth"

Answer: b) "come"

Question 10: What does the following Python code do?

python

word = "Python"
result = word[::-1]
print(result)
a) Prints the last character of the string
b) Reverses the string and prints "nohtyP"
c) Prints the first character of the string
d) Raises a syntax error

Answer: b) Reverses the string and prints "nohtyP"

Question 11: What is the output of the following code in Python?

python

word = "Python"
print(word[1:4])
a) "P"
b) "y"
c) "yth"
d) "ytho"

Answer: c) "yth"

Question 12: How do you access every second character of a string named 'text' in Python?
a) text[::2]
b) text[2::]
c) text[2:2:]
d) text[2:0:]

Answer: a) text[::2]

Question 13: What is the output of the following code in Python?

python

```
text = "Hello, Python!"
print(text[1:10:2])
```

a) "el,P"
b) "e,Pt"
c) "el,Pt"
d) "e,Pto"

Answer: a) "el,P"

Question 14: What is the output of the following code in Python?

python

```
word = "Programming"
result = word[3:8]
print(result)
```

a) "ogramm"
b) "gramm"
c) "o"
d) "gra"

Answer: a) "ogramm"

Question 15: How do you access the last three characters of a string named 'my_string' in Python?
a) my_string[0:-3]
b) my_string[-3:]
c) my_string[:-3]
d) my_string[-3:-1]

Answer: b) my_string[-3:]

Question 16: What is the output of the following code in Python?

python

```
my_string = "abcdef"
```

result = my_string[-3:-1]
print(result)
a) "cd"
b) "cde"
c) "de"
d) "ed"

Answer: c) "de"

Question 17: How do you access the characters of a string in reverse order in Python?
a) my_string[::-1]
b) my_string[reverse()]
c) my_string[reverse]
d) my_string[-1::-1]

Answer: a) my_string[::-1]

Question 18: What is the output of the following code in Python?

python

my_string = "abcdefgh"
result = my_string[1:7:2]
print(result)
a) "bdf"
b) "bd"
c) "bce"
d) "bcde"

Answer: c) "bce"

Question 19: How do you access the characters of a string in reverse order starting from the 6th character in Python?
a) my_string[6::-1]
b) my_string[5::-1]
c) my_string[5:0:-1]
d) my_string[5:-1:-1]

Answer: b) my_string[5::-1]

Question 20: What is the output of the following code in Python?

python

```
my_string = "abcdefgh"
result = my_string[::3]
print(result)
```

a) "aceg"
b) "ace"
c) "adg"
d) "acfh"

Answer: a) "aceg"

Question 21: How do you access the last four characters of a string named 'text' in Python?
a) text[-1:-4]
b) text[1:-4]
c) text[-4:]
d) text[:-4]

Answer: c) text[-4:]

Question 22: What is the output of the following code in Python?

python

```
text = "Hello, Python!"
print(text[::-1])
```

a) "Hello, Python!"
b) "!nohtyP ,olleH"
c) "nohtyP ,olleH!"
d) "!Hello, Python"

Answer: b) "!nohtyP ,olleH"

Question 23: How do you access every third character of a string named 'text' in Python?
a) text[:3]
b) text[::3]
c) text[3::]
d) text[::2]

Answer: b) text[::3]

Question 24: What is the output of the following code in Python?

python

```
text = "Python is fun"
print(text[7:0:-2])
```

a) " fh"
b) "fhs"
c) "nfh"
d) "f sih"

Answer: a) " fh"

Question 25: How do you access the last two characters of a string named 'my_string' in Python?
a) my_string[0:-2]
b) my_string[-2:]
c) my_string[:-2]
d) my_string[-2:-1]

Answer: b) my_string[-2:]

Question 26: What is the output of the following code in Python?

python

```
my_string = "abcdef"
result = my_string[-2:-5:-1]
print(result)
```

a) "edc"
b) "edcb"
c) "dc"
d) "dcba"

Answer: a) "edc"

Question 27: How do you access the characters of a string in reverse order starting from the 6th character to the 3rd character in Python?
a) my_string[6:2:-1]
b) my_string[5:2:-1]
c) my_string[6:3:-1]
d) my_string[5:3:-1]

Answer: b) my_string[5:2:-1]

Question 28: What is the output of the following code in Python?

python

```
my_string = "abcdefgh"
result = my_string[::-2]
print(result)
```

a) "hfd"
b) "hfd"
c) "hfb"
d) "hfdb"

Answer: a) "hfd"

Question 29: How do you access every fourth character of a string named 'text' in Python?
a) text[:4]
b) text[::4]
c) text[4::]
d) text[::3]

Answer: b) text[::4]

Question 30: What is the output of the following code in Python?

python

```
text = "Hello, Python!"
print(text[8:1:-2])
```

a) "o,Plo"
b) "o,n"
c) "oPlH"
d) "o,nlo"

Answer: a) "o,Plo"

Question 1: What is the output of the following code in Python?

python

num1 = 10
num2 = 5
result = num1 + num2 * 2
print(result)
a) 20
b) 30
c) 25
d) 15

Answer: c) 25

Question 2: Which operator is used for exponentiation in Python?
a) ^
b) **
c) &
d) //

Answer: b) **

Question 3: What will be the value of 'x' after executing the following code in Python?

python

x = 10
x += 5
a) 10
b) 15
c) 5
d) 25

Answer: b) 15

Question 4: What is the output of the following code in Python?

python

name = "Alice"
age = 25
print(f"My name is {name} and I am {age} years old.")
a) My name is {name} and I am {age} years old.
b) My name is Alice and I am 25 years old.
c) My name is name and I am age years old.

d) My name is Alice and I am age years old.

Answer: b) My name is Alice and I am 25 years old.

Question 5: Which of the following is the correct way to format a floating-point number to have 2 decimal places in Python?
a) "{:2f}".format(number)
b) "{.2f}".format(number)
c) "{:.2f}".format(number)
d) "{:2}".format(number)

Answer: c) "{:.2f}".format(number)

Question 6: What is the output of the following code in Python?

python

```
text = "Python is fun"
result = text[7:]
print(result)
```

a) "fun"
b) "is fun"
c) "Python"
d) "is"

Answer: a) "fun"

Question 7: How do you assign multiple values at once to multiple variables in Python?
a) x, y, z = 1, 2, 3
b) x = y = z = 1
c) x, y = 1, 2, 3
d) x, y = 1

Answer: a) x, y, z = 1, 2, 3

Question 8: What is the output of the following code in Python?

python

```
word = "Hello, Python!"
print(word[2:9:2])
```

a) "l y"

b) "l,Pt"
c) "lo,y"
d) "l,Pyt"

Answer: b) "l,Pt"

Question 9: How do you assign the same value to multiple variables in Python?
a) x, y = 1
b) x = y = 1
c) x = 1, y = 1
d) x = y

Answer: b) x = y = 1

Question 10: What is the output of the following code in Python?

python

text = "Python is great"
result = text[::-1]
print(result)
a) "great is Python"
b) "taerg si nohtyP"
c) "great is"
d) "nohtyP si"

Answer: b) "taerg si nohtyP"

Question 11: How do you assign multiple values at once to a single variable in Python?
a) x = (1, 2, 3)
b) x = 1, 2, 3
c) x = [1, 2, 3]
d) x = {1, 2, 3}

Answer: b) x = 1, 2, 3

Question 12: What is the output of the following code in Python?

python

text = "Hello, Python!"
result = text[1:8:3]

print(result)
a) "eoo"
b) "e,P"
c) "el,P"
d) "e,y"

Answer: a) "eoo"

Question 13: How do you format a string to be left-justified with a width of 10 in Python?
a) "{:10}".format(text)
b) "{:<10}".format(text)
c) "{:>10}".format(text)
d) "{:^10}".format(text)

Answer: b) "{:<10}".format(text)

Question 14: What is the output of the following code in Python?

python

text = "Hello, Python!"
result = text[:5]
print(result)
a) "Hello"
b) "Hello,"
c) "Python"
d) "Pytho"

Answer: a) "Hello"

Question 15: How do you format a string to be right-justified with a width of 8 in Python?
a) "{:8}".format(text)
b) "{:<8}".format(text)
c) "{:>8}".format(text)
d) "{:^8}".format(text)

Answer: c) "{:>8}".format(text)

Question 16: What is the output of the following code in Python?

python

text = "Hello, Python!"
result = text[::-1]
print(result)
a) "Hello, Python!"
b) "!nohtyP ,olleH"
c) "nohtyP ,olleH!"
d) "!Hello, Python"

Answer: b) "!nohtyP ,olleH"

Question 17: How do you format a string to have a minimum width of 6 and a precision of 2 for a floating-point number in Python?
a) "{:.6.2f}".format(number)
b) "{:6.2}".format(number)
c) "{:.2f}".format(number)
d) "{:6.2f}".format(number)

Answer: d) "{:6.2f}".format(number)

Question 18: What is the output of the following code in Python?

python

text = "Hello, Python!"
result = text[3:]
print(result)
a) "lo, Python!"
b) "o, Python!"
c) "o, Pyt"
d) "o"

Answer: a) "lo, Python!"

Question 19: How do you format a string to have a minimum width of 10 and align the text to the center in Python?
a) "{:.10}".format(text)
b) "{:<10}".format(text)
c) "{:^10}".format(text)
d) "{:>10}".format(text)

Answer: c) "{:^10}".format(text)

Question 20: What is the output of the following code in Python?

python

```
text = "Hello, Python!"
result = text[1::3]
print(result)
```

a) "eo,Pt"
b) "e,tn"
c) "el,P"
d) "el,on"

Answer: a) "eo,Pt"

Question 1: What is the output of the following code in Python?

python

```
x = 5
y = 2
result = x / y
print(result)
```

a) 2.5
b) 2
c) 2.0
d) 2.1

Answer: a) 2.5

Question 2: How do you assign multiple values to multiple variables in a single line in Python?

a) x = y = z = 1
b) x, y, z = 1
c) x, y = 1, 2, 3
d) x, y, z = [1, 2, 3]

Answer: a) x = y = z = 1

Question 3: What is the output of the following code in Python?

python

text = "Python"
result = text[-3:-6:-1]
print(result)
a) "hty"
b) "noh"
c) "noht"
d) "htno"

Answer: c) "noht"

Question 4: How do you format a string to have a minimum width of 8 and align the text to the right in Python?

a) "{:8}".format(text)
b) "{:<8}".format(text)
c) "{:>8}".format(text)
d) "{:^8}".format(text)

Answer: c) "{:>8}".format(text)

Question 5: What is the output of the following code in Python?

python

text = "Hello, Python!"
result = text[1:10:2]
print(result)
a) "el,y"
b) "e,o"
c) "el,Pt"
d) "el,Pyt"

Answer: c) "el,Pt"

Question 6: How do you format a floating-point number to have exactly 3 decimal places in Python?

a) "{:3f}".format(number)
b) "{:.3f}".format(number)
c) "{:3}".format(number)
d) "{:0.3}".format(number)

Answer: b) "{:.3f}".format(number)

Question 7: What is the output of the following code in Python?

python

```
text = "Python is great"
result = text[6::-2]
print(result)
```

a) "i o"
b) "i oP"
c) "tohP"
d) "t ihP"

Answer: d) "t ihP"

Question 8: How do you access the last four characters of a string named 'word' in Python?

a) word[-4:]
b) word[0:-4]
c) word[-1:-4]
d) word[-4:-1]

Answer: a) word[-4:]

Question 9: What is the output of the following code in Python?

python

```
x = 2
y = 3
result = x ** y
print(result)
```

a) 5
b) 8
c) 6
d) 2^3

Answer: b) 8

Question 10: How do you access every third character of a string named 'text' in Python?

a) text[:3]
b) text[::3]
c) text[3::]
d) text[::2]

Answer: b) text[::3]

Question 1: What is the output of the following code in Python?

python

```
x = 7
y = 3
result = x // y
print(result)
```

a) 2.33
b) 2.0
c) 2
d) 2.67

Answer: c) 2

Question 2: How do you assign the same value to multiple variables in Python?

a) x = y = z = 1
b) x, y, z = 1
c) x, y = 1, 2, 3
d) x, y, z = [1, 2, 3]

Answer: a) x = y = z = 1

Question 3: What is the output of the following code in Python?

python

```
text = "Python is amazing"
result = text[-1:-7:-1]
print(result)
```

a) "gnizam"
b) "gnima"
c) "gnizam si"
d) "gnizam si nohty"

Answer: a) "gnizam"

Question 4: How do you format a string to have a minimum width of 6 and align the text to the left in Python?

a) "{:6}".format(text)
b) "{:<6}".format(text)
c) "{:>6}".format(text)
d) "{:^6}".format(text)

Answer: b) "{:<6}".format(text)

Question 5: What is the output of the following code in Python?

python

text = "Hello, Python!"
result = text[2:8:2]
print(result)
a) "lo,"
b) "l,o"
c) "le"
d) "l,Py"

Answer: a) "lo,"

Question 6: How do you format a floating-point number to have exactly 5 decimal places in Python?

a) "{:5f}".format(number)
b) "{:.5f}".format(number)
c) "{:5}".format(number)
d) "{:0.5}".format(number)

Answer: b) "{:.5f}".format(number)

Question 7: What is the output of the following code in Python?

python

text = "Python is versatile"
result = text[5:15:3]

print(result)
a) "nivr"
b) "nsv"
c) "nvse"
d) "nsl"

Answer: b) "nsv"

Question 8: How do you access the first five characters of a string named 'word' in Python?

a) word[0:5]
b) word[:5]
c) word[1:5]
d) word[5:]

Answer: b) word[:5]

Question 9: What is the output of the following code in Python?

python

x = 4
y = 2
result = x % y
print(result)
a) 2
b) 0
c) 0.5
d) 0.25

Answer: b) 0

Question 10: How do you access every second character of a string named 'text' in Python?

a) text[:2]
b) text[::2]
c) text[2::]
d) text[::3]

Answer: b) text[::2]

Question 1: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = my_dict['grape']
print(result)
```

a) 3
b) 5
c) 2
d) KeyError: 'grape'

Answer: d) KeyError: 'grape'

Question 2: Which of the following is the correct way to define an empty dictionary in Python?

a) my_dict = {}
b) my_dict = dict()
c) my_dict = []
d) my_dict = ()

Answer: a) my_dict = {}

Question 3: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
my_dict['apple'] = 10
print(my_dict['apple'])
```

a) 10
b) 3
c) 5
d) 2

Answer: a) 10

Question 4: How do you delete an item with key 'orange' from the dictionary 'my_dict' in Python?

a) del my_dict['orange']
b) delete my_dict['orange']

c) my_dict.delete('orange')
d) remove my_dict['orange']

Answer: a) del my_dict['orange']

Question 5: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = my_dict.get('apple', 0) + my_dict.get('mango', 0)
print(result)
```

a) 5
b) 0
c) 3
d) 8

Answer: c) 3

Question 6: How do you add a new key-value pair {'pear': 4} to the dictionary 'my_dict' in Python?

a) my_dict.add('pear', 4)
b) my_dict.update('pear', 4)
c) my_dict['pear'] = 4
d) my_dict.append('pear', 4)

Answer: c) my_dict['pear'] = 4

Question 7: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = len(my_dict)
print(result)
```

a) 3
b) 2
c) 5
d) 6

Answer: a) 3

Question 8: How do you modify the value associated with the key 'banana' to be doubled in the dictionary 'my_dict' in Python?

a) my_dict['banana'] *= 2
b) my_dict['banana'] = 2
c) my_dict['banana'] + 2
d) my_dict['banana'].double()

Answer: a) my_dict['banana'] *= 2

Question 9: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = my_dict.pop('mango', 0)
print(result)
```

a) 0
b) 3
c) 5
d) KeyError: 'mango'

Answer: a) 0

Question 10: How do you check if the key 'pear' exists in the dictionary 'my_dict' in Python?

a) 'pear' in my_dict
b) my_dict.contains('pear')
c) 'pear' exists my_dict
d) my_dict.has_key('pear')

Answer: a) 'pear' in my_dict

Question 1: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = my_dict.get('mango', my_dict['banana'])
print(result)
```

a) 5
b) 3

c) 2
d) KeyError: 'mango'

Answer: a) 5

Question 2: How do you define a dictionary with keys '1', '2', '3' and values 10, 20, 30 in Python?

a) my_dict = {'1': 10, '2': 20, '3': 30}
b) my_dict = {1: 10, 2: 20, 3: 30}
c) my_dict = {[1, 2, 3]: [10, 20, 30]}
d) my_dict = {(1, 2, 3): (10, 20, 30)}

Answer: a) my_dict = {'1': 10, '2': 20, '3': 30}

Question 3: What is the output of the following code in Python?

python

my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = my_dict.get('banana', my_dict.get('grape', 0))
print(result)
a) 5
b) 0
c) 3
d) KeyError: 'grape'

Answer: a) 5

Question 4: How do you delete the last item from the dictionary 'my_dict' in Python?

a) del my_dict[-1]
b) my_dict.remove(-1)
c) my_dict.popitem()
d) my_dict.pop(-1)

Answer: c) my_dict.popitem()

Question 5: What is the output of the following code in Python?

python

my_dict = {'apple': 3, 'banana': 5, 'orange': 2}

result = my_dict.pop('mango')
print(result)
a) None
b) KeyError: 'mango'
c) 0
d) 2

Answer: b) KeyError: 'mango'

Question 6: How do you add a new key-value pair {'mango': 4} to the dictionary 'my_dict' in Python?

a) my_dict.update({'mango': 4})
b) my_dict.append('mango', 4)
c) my_dict['mango'] = 4
d) my_dict.add({'mango': 4})

Answer: c) my_dict['mango'] = 4

Question 7: What is the output of the following code in Python?

python

my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = 'pear' in my_dict
print(result)
a) True
b) False
c) KeyError: 'pear'
d) KeyError: 'pear' not found

Answer: b) False

Question 8: How do you modify the value associated with the key 'banana' to be tripled in the dictionary 'my_dict' in Python?

a) my_dict['banana'] *= 3
b) my_dict['banana'] = 3
c) my_dict['banana'] + 3
d) my_dict['banana'].triple()

Answer: a) my_dict['banana'] *= 3

Question 9: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = my_dict.pop('apple', 0)
print(result)
```

a) 0
b) 3
c) 5
d) KeyError: 'apple'

Answer: b) 3

Question 10: How do you check if the value 10 exists in the dictionary 'my_dict' in Python?

a) 10 in my_dict
b) my_dict.contains(10)
c) 10 exists my_dict
d) my_dict.has_value(10)

Answer: d) my_dict.has_value(10)

Question 1: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = my_dict.popitem()
print(result)
```

a) 'orange': 2
b) ('orange', 2)
c) 'apple'
d) KeyError: 'orange'

Answer: b) ('orange', 2)

Question 2: How do you define a dictionary with keys 'a', 'b', 'c' and values [1, 2, 3] in Python?

a) my_dict = {'a': [1, 2, 3], 'b': [1, 2, 3], 'c': [1, 2, 3]}
b) my_dict = {('a', 'b', 'c'): [1, 2, 3]}
c) my_dict = {'a': 1, 'b': 2, 'c': 3}

d) my_dict = {['a', 'b', 'c']: [1, 2, 3]}

Answer: a) my_dict = {'a': [1, 2, 3], 'b': [1, 2, 3], 'c': [1, 2, 3]}

Question 3: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = my_dict.setdefault('mango', 4)
print(result)
```

a) 4
b) 'mango'
c) 2
d) KeyError: 'mango'

Answer: a) 4

Question 4: How do you delete the item with value 3 from the dictionary 'my_dict' in Python?

a) del my_dict[3]
b) my_dict.delete(3)
c) my_dict.pop(3)
d) del my_dict['apple']

Answer: d) del my_dict['apple']

Question 5: What is the output of the following code in Python?

python

```
my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = len(my_dict['banana'])
print(result)
```

a) 5
b) 3
c) 6
d) TypeError: object of type 'int' has no len()

Answer: d) TypeError: object of type 'int' has no len()

Question 6: How do you add a new key-value pair {'grape': 6} to the dictionary 'my_dict' in Python?

a) my_dict['grape'] = 6
b) my_dict.append('grape', 6)
c) my_dict.insert('grape', 6)
d) my_dict.update({'grape': 6})

Answer: a) my_dict['grape'] = 6

Question 7: What is the output of the following code in Python?

python

my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = 'banana' in my_dict.keys()
print(result)
a) True
b) False
c) 'banana'
d) KeyError: 'banana'

Answer: a) True

Question 8: How do you modify the key 'apple' to 'pear' in the dictionary 'my_dict' in Python?

a) my_dict['apple'] = 'pear'
b) my_dict.rename('apple', 'pear')
c) my_dict.replace('apple', 'pear')
d) my_dict.change('apple', 'pear')

Answer: a) my_dict['apple'] = 'pear'

Question 9: What is the output of the following code in Python?

python

my_dict = {'apple': 3, 'banana': 5, 'orange': 2}
result = my_dict.popitem()
print(result)
a) 'orange': 2
b) ('orange', 2)
c) 'apple'
d) KeyError: 'orange'

Answer: b) ('orange', 2)

Question 1: What is the output of the following code in Python?

python

```
my_list = [1, 2, 3, 4]
result = my_list[1:-1]
print(result)
```

a) [2, 3]
b) [1, 2, 3]
c) [2, 3, 4]
d) [1, 2, 3, 4]

Answer: a) [2, 3]

Question 2: How do you add the elements [5, 6] at the end of the list 'my_list' in Python?

a) my_list.append(5, 6)
b) my_list.extend([5, 6])
c) my_list.add([5, 6])
d) my_list.insert(-1, [5, 6])

Answer: b) my_list.extend([5, 6])

Question 3: What is the output of the following code in Python?

python

```
my_list = [1, 2, 3, 4]
result = my_list * 2
print(result)
```

a) [1, 2, 3, 4, 1, 2, 3, 4]
b) [1, 4, 9, 16]
c) [2, 4, 6, 8]
d) [2, 4, 6, 8, 1, 2, 3, 4]

Answer: a) [1, 2, 3, 4, 1, 2, 3, 4]

Question 4: How do you remove the first occurrence of the element 3 from the list 'my_list' in Python?

a) my_list.pop(3)
b) my_list.remove(3)
c) my_list.delete(3)
d) my_list.del(3)

Answer: b) my_list.remove(3)

Question 5: What is the output of the following code in Python?

python

my_list = [1, 2, 3, 4]
result = my_list[-2:]
print(result)
a) [1, 2]
b) [2, 3]
c) [3, 4]
d) [2, 3, 4]

Answer: c) [3, 4]

Question 6: How do you check if the element 5 exists in the list 'my_list' in Python?

a) 5 in my_list
b) my_list.contains(5)
c) 5 exists my_list
d) my_list.has_value(5)

Answer: a) 5 in my_list

Question 7: What is the output of the following code in Python?

python

my_list = [1, 2, 3, 4]
result = my_list.index(3)
print(result)
a) 0
b) 1
c) 2
d) 3

Answer: c) 2

Question 8: How do you modify the element at index 2 to have the value 10 in the list 'my_list' in Python?

a) my_list[2] = 10
b) my_list.replace(2, 10)
c) my_list.modify(2, 10)
d) my_list.set(2, 10)

Answer: a) my_list[2] = 10

Question 9: What is the output of the following code in Python?

python

my_list = [1, 2, 3, 4]
result = len(my_list)
print(result)
a) 4
b) 3
c) 2
d) TypeError: object of type 'int' has no len()

Answer: a) 4

Question 10: How do you insert the element 5 at index 2 in the list 'my_list' in Python?

a) my_list[2] = 5
b) my_list.add(2, 5)
c) my_list.insert(2, 5)
d) my_list.append(2, 5)

Answer: c) my_list.insert(2, 5)

String Methods:

Question 11: What is the output of the following code in Python?

python

my_string = "Hello, World!"
result = my_string.lower()

print(result)
a) "hello, world!"
b) "Hello, World!"
c) "HELLO, WORLD!"
d) "hELLO, wORLD!"

Answer: a) "hello, world!"

Question 12: How do you check if the string 'my_string' starts with the prefix "Hi" in Python?

a) my_string.startswith("Hi")
b) my_string.beginswith("Hi")
c) my_string.start("Hi")
d) my_string.first("Hi")

Answer: a) my_string.startswith("Hi")

Question 13: What is the output of the following code in Python?

python

my_string = "Hello, World!"
result = my_string.count('l')
print(result)
a) 3
b) 2
c) 4
d) 5

Answer: a) 3

Question 14: How do you remove leading and trailing whitespaces from the string 'my_string' in Python?

a) my_string.trim()
b) my_string.strip()
c) my_string.remove_whitespaces()
d) my_string.clear()

Answer: b) my_string.strip()

Question 15: What is the output of the following code in Python?

python

```
my_string = "Hello, World!"
result = my_string.split(',')
print(result)
```

a) ["Hello", " World!"]
b) ["Hello,", " World!"]
c) ["Hello", "World!"]
d) "Hello, World!"

Answer: a) ["Hello", " World!"]

Question 1: What is the output of the following code in Python?

python

```
my_list = [1, 2, 3, 4, 5]
result = my_list[-3:-1]
print(result)
```

a) [3, 4]
b) [2, 3]
c) [4, 5]
d) [3, 5]

Answer: a) [3, 4]

Question 2: How do you add the element 6 at the beginning of the list 'my_list' in Python?

a) my_list.add(6)
b) my_list.prepend(6)
c) my_list.insert(0, 6)
d) my_list.extend(6)

Answer: c) my_list.insert(0, 6)

Question 3: What is the output of the following code in Python?

python

```
my_list = [1, 2, 3]
result = my_list + [4, 5]
```

print(result)
a) [1, 2, 3]
b) [1, 2, 3, 4, 5]
c) [5, 4, 3, 2, 1]
d) [4, 5]

Answer: b) [1, 2, 3, 4, 5]

Question 4: How do you remove the element at index 2 from the list 'my_list' in Python?

a) my_list.pop(2)
b) my_list.remove(2)
c) my_list.delete(2)
d) my_list.del(2)

Answer: a) my_list.pop(2)

Question 5: What is the output of the following code in Python?

python

my_list = [1, 2, 3, 4]
result = my_list[::2]
print(result)
a) [1, 2]
b) [1, 3]
c) [2, 4]
d) [1, 3, 4]

Answer: b) [1, 3]

Question 6: How do you check if the element 6 exists in the list 'my_list' in Python?

a) 6 in my_list
b) my_list.contains(6)
c) 6 exists my_list
d) my_list.has_value(6)

Answer: a) 6 in my_list

Question 7: What is the output of the following code in Python?

python

```
my_list = [1, 2, 3]
result = my_list.index(4)
print(result)
```

a) 0
b) 1
c) 2
d) ValueError: 4 is not in list

Answer: d) ValueError: 4 is not in list

Question 8: How do you modify the elements at indices 1 and 2 to have the value 10 in the list 'my_list' in Python?

a) my_list[1, 2] = 10
b) my_list.replace([1, 2], 10)
c) my_list[1:3] = [10, 10]
d) my_list.set([1, 2], 10)

Answer: c) my_list[1:3] = [10, 10]

Question 9: What is the output of the following code in Python?

python

```
my_list = [1, 2, 3]
result = len(my_list[0])
print(result)
```

a) 0
b) 1
c) 2
d) TypeError: object of type 'int' has no len()

Answer: d) TypeError: object of type 'int' has no len()

Question 10: How do you add the elements [4, 5, 6] at the end of the list 'my_list' in Python?

a) my_list.append([4, 5, 6])
b) my_list.extend([4, 5, 6])
c) my_list.add([4, 5, 6])
d) my_list.insert(-1, [4, 5, 6])

Answer: b) my_list.extend([4, 5, 6])

String Methods:

Question 11: What is the output of the following code in Python?

python

my_string = "Python is great"
result = my_string.upper()
print(result)
a) "python is great"
b) "PYTHON IS GREAT"
c) "Python Is Great"
d) "pYTHON IS GREAT"

Answer: b) "PYTHON IS GREAT"

Question 12: How do you check if the string 'my_string' ends with the suffix "eat" in Python?

a) my_string.ends("eat")
b) my_string.endswith("eat")
c) my_string.ends_with("eat")
d) my_string.endwith("eat")

Answer: b) my_string.endswith("eat")

Question 13: What is the output of the following code in Python?

python

my_string = "Hello, World!"
result = my_string.count('l')
print(result)
a) 3
b) 2
c) 4
d) 5

Answer: a) 3

Question 14: How do you remove all occurrences of the substring "lo" from the string 'my_string' in Python?

a) my_string.replace("lo", "")
b) my_string.remove("lo")
c) my_string.delete("lo")
d) my_string.pop("lo")

Answer: a) my_string.replace("lo", "")
Question: How do you call a function named 'print_message' without any arguments in Python?
a) print_message()
b) call print_message
c) call print_message()
d) print_message(call)

Answer: a) print_message()

Question: What is the output of the following code in Python?

python

```
def greet(name):
    return f"Hello, {name}!"

result = greet("Alice")
print(result)
```

vbnet

a) "Hello, Alice!"
b) "Hello, name!"
c) "Hello, !"
d) "Hello, user!"

Answer: a) "Hello, Alice!"
12. Question: Which type of function takes a variable number of arguments in Python?
a) flexible function
b) dynamic function
c) variable function
d) *args function

vbnet

Answer: d) *args function
13. Question: What is the output of the following code in Python?

python

```
def add_numbers(a, b=5):
    return a + b

result = add_numbers(3)
print(result)
```

a) 3
b) 5
c) 8
d) 15

Answer: c) 8
14. Question: How do you call a function named 'calculate_average' with two arguments 5 and 7 in Python?
a) calculate_average(5, 7)
b) call calculate_average(5, 7)
c) calculate_average = (5, 7)
d) calculate_average.call(5, 7)

Answer: a) calculate_average(5, 7)
15. Question: What is the keyword used to pass a keyword argument in Python?
a) key
b) kwarg
c) karg
d) None

makefile

Answer: b) kwarg
16. Question: What is the output of the following code in Python?

python

```
def greet(name="User"):
```

```
    return f"Hello, {name}!"

result = greet(name="Alice")
print(result)
```

vbnet

a) "Hello, User!"
b) "Hello, world!"
c) "Hello, None!"
d) "Hello, Alice!"

Answer: d) "Hello, Alice!"
17. Question: Which type of function does not call itself from within its body in Python?
a) iterative function
b) repeating function
c) self-function
d) non-recursive function

sql

Answer: d) non-recursive function
18. Question: How do you define a function with multiple arguments in Python?
a) def my_function(arguments):
b) def my_function(arguments, arguments):
c) def my_function(*arguments):
d) def my_function(arguments1, arguments2):

python

Answer: d) def my_function(arguments1, arguments2):
19. Question: What is the output of the following code in Python?

python

```
def subtract_numbers(a, b):
    return a - b

result = subtract_numbers(b=3, a=5)
print(result)
```

a) 2

b) 8
c) -2
d) -8

Answer: c) -2
20. Question: How do you define a function in Python with an unknown number of keyword arguments?
a) def my_function(*args):
b) def my_function(**kwargs):
c) def my_function(*args, **kwargs):
d) def my_function(**args, *kwargs):

python

Answer: c) def my_function(*args, **kwargs):
21. Question: What is the output of the following code in Python?

python

```
def greet(*names):
    for name in names:
        print(f"Hello, {name}!")

greet("Alice", "Bob", "Charlie")
```

vbnet

a) "Hello, Alice!"
"Hello, Bob!"
"Hello, Charlie!"
b) "Hello, !"
"Hello, !"
"Hello, !"
c) "Hello, Alice, Bob, Charlie!"
d) "Hello, Alice Bob Charlie!"

Answer: a) "Hello, Alice!"
"Hello, Bob!"
"Hello, Charlie!"
22. Question: Which type of function takes a dictionary of keyword arguments in Python?
a) **args function
b) flexible function
c) dynamic function
d) **kwargs function

vbnet

Answer: d) **kwargs function
23. Question: What is the output of the following code in Python?

python

```
def multiply_numbers(*args):
    result = 1
    for num in args:
        result *= num
    return result

result = multiply_numbers(2, 3, 4)
print(result)
```

less

a) 9
b) 24
c) 0
d) 1

Answer: b) 24
24. Question: How do you call a function named 'print_info' with two keyword arguments name="Alice" and age=25 in Python?
a) print_info("Alice", 25)
b) call print_info(name="Alice", age=25)
c) print_info(name="Alice", 25)
d) print_info(name="Alice" and age=25)

vbnet

Answer: b) call print_info(name="Alice", age=25)
25. Question: What is the keyword used to pass a default value for a keyword argument in Python?
a) default
b) value
c) set
d) None

makefile

Answer: d) None
26. Question: What is the output of the following code in Python?

python

```
def greet(name="User"):
    return f"Hello, {name}!"

result = greet()
print(result)
```

vbnet

a) "Hello, User!"
b) "Hello, world!"
c) "Hello, None!"
d) "Hello, Python!"

Answer: a) "Hello, User!"
27. Question: Which type of function calls itself from within its body using its name in Python?
a) recursive function
b) looping function
c) self-function
d) repeating function

lua

Answer: c) self-function
28. Question: How do you define a function in Python without any implementation?
a) def my_function:
b) def my_function()
c) def my_function pass
d) def my_function():

python

Answer: c) def my_function pass
29. Question: What is the output of the following code in Python?

python

```
def multiply_numbers(a, b):
    return a * b
```

```
result = multiply_numbers(4)
print(result)
```

a) 4
b) 0
c) None
d) TypeError: multiply_numbers() missing 1 required positional argument: 'b'

Answer: d) TypeError: multiply_numbers() missing 1 required positional argument: 'b'
30. Question: How do you call a function named 'print_message' without any arguments in Python?
a) print_message()
b) call print_message
c) call print_message()
d) print_message(call)

Answer: a) print_message()
31. Question: What is the output of the following code in Python?

python

```
def greet(name):
    return f"Hello, {name}!"

result = greet("Alice")
print(result)
```

vbnet

a) "Hello, Alice!"
b) "Hello, name!"
c) "Hello, !"
d) "Hello, user!"

Answer: a) "Hello, Alice!"
32. Question: Which type of function takes a variable number of arguments in Python?
a) flexible function
b) dynamic function
c) variable function
d) *args function

vbnet

Answer: d) *args function
33. Question: What is the output of the following code in Python?

python

```
def add_numbers(a, b=5):
    return a + b

result = add_numbers(3)
print(result)
```

a) 3
b) 5
c) 8
d) 15

Answer: c) 8
34. Question: How do you call a function named 'calculate_average' with two arguments 5 and 7 in Python?
a) calculate_average(5, 7)
b) call calculate_average(5, 7)
c) calculate_average = (5, 7)
d) calculate_average.call(5, 7)

Answer: a) calculate_average(5, 7)
35. Question: What is the keyword used to pass a keyword argument in Python?
a) key
b) kwarg
c) karg
d) None

makefile

Answer: b) kwarg
36. Question: What is the output of the following code in Python?

python

```
def greet(name="User"):
    return f"Hello, {name}!"

result = greet(name="Alice")
print(result)
```

vbnet

a) "Hello, User!"
b) "Hello, world!"
c) "Hello, None!"
d) "Hello, Alice!"

Answer: d) "Hello, Alice!"
37. Question: Which type of function does not call itself from within its body in Python?
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b) repeating function
c) self-function
d) non-recursive function

sql

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a) def my_function(arguments):
b) def my_function(arguments, arguments):
c) def my_function(*arguments):
d) def my_function(arguments1, arguments2):

python

Answer: d) def my_function(arguments1, arguments2):
39. Question: What is the output of the following code in Python?

python

```
def subtract_numbers(a, b):
    return a - b

result = subtract_numbers(b=3, a=5)
print(result)
```

a) 2
b) 8
c) -2
d) -8

Answer: c) -2
40. Question: How do you define a function in Python with an unknown number of keyword arguments?
a) def my_function(*args):
b) def my_function(**kwargs):
c) def my_function(*args, **kwargs):
d) def my_function(**args, *kwargs):

python

Answer: c) def my_function(*args, **kwargs):
41. Question: What is the output of the following code in Python?

python

```
def multiply_numbers(*args):
    result = 1
    for num in args:
        result *= num
    return result

result = multiply_numbers(2, 3, 4)
print(result)
```

less

a) 9
b) 24
c) 0
d) 1

Answer: b) 24
42. Question: How do you call a function named 'print_info' with two keyword arguments name="Alice" and age=25 in Python?
a) print_info("Alice", 25)
b) call print_info(name="Alice", age=25)
c) print_info(name="Alice", 25)

d) print_info(name="Alice" and age=25)

vbnet

Answer: b) call print_info(name="Alice", age=25)
43. Question: What is the keyword used to pass a default value for a keyword argument in Python?
a) default
b) value
c) set
d) None

makefile

Answer: d) None
44. Question: What is the output of the following code in Python?

python

```
def greet(name="User"):
    return f"Hello, {name}!"

result = greet()
print(result)
```

vbnet

a) "Hello, User!"
b) "Hello, world!"
c) "Hello, None!"
d) "Hello, Python!"

Answer: a) "Hello, User!"
45. Question: Which type of function calls itself from within its body using its name in Python?
a) recursive function
b) looping function
c) self-function
d) repeating function

lua

Answer: c) self-function
46. Question: How do you define a function in Python without any implementation?
a) def my_function:

b) def my_function()
c) def my_function pass
d) def my_function():

python

Answer: c) def my_function pass
47. Question: What is the output of the following code in Python?

python

```
def multiply_numbers(a, b):
    return a * b

result = multiply_numbers(4)
print(result)
```

a) 4
b) 0
c) None
d) TypeError: multiply_numbers() missing 1 required positional argument: 'b'

Answer: d) TypeError: multiply_numbers() missing 1 required positional argument: 'b'
48. Question: How do you call a function named 'print_message' without any arguments in Python?
a) print_message()
b) call print_message
c) call print_message()
d) print_message(call)

Answer: a) print_message()
49. Question: What is the output of the following code in Python?

```
def greet(name):
    return f"Hello, {name}!"

result = greet("Alice")
print(result)
```

a) "Hello, Alice!"
b) "Hello, name!"
c) "Hello, !"
d) "Hello, user!"

Answer: a) "Hello, Alice!"
50. Question: Which type of function takes a variable number of arguments in Python?
a) flexible function
b) dynamic function
c) variable function
d) *args function

Answer: d) *args function

Question: What is the keyword used to create an anonymous function in Python?
a) lambda
b) func
c) def
d) anon

Answer: a) lambda

Question: How do you call an anonymous function stored in the variable 'func' with an argument 'x'?
a) func()
b) func(x)
c) lambda func(x)
d) lambda x: func(x)

Answer: b) func(x)

Question: Which function is used to apply a given function to all items in an iterable in Python?
a) apply()
b) map()
c) transform()
d) lambda()

Answer: b) map()

Question: What is the output of the following code in Python?

python
Copy code
numbers = [1, 2, 3, 4]
squared = map(lambda x: x**2, numbers)
print(list(squared))
a) [1, 4, 9, 16]
b) [2, 4, 6, 8]
c) [1, 8, 27, 64]
d) [1, 2, 3, 4]

Answer: a) [1, 4, 9, 16]

Question: What does a list comprehension return in Python?
a) A new list
b) A tuple
c) A dictionary
d) A set

Answer: a) A new list

Question: How do you create a list comprehension that generates a list of even numbers from 1 to 10?
a) [x for x in range(1, 11) if x % 2 == 0]
b) [x for x in range(1, 11) if x % 2 != 0]
c) [x for x in range(2, 11) if x % 2 == 0]
d) [x for x in range(2, 11) if x % 2 != 0]

Answer: a) [x for x in range(1, 11) if x % 2 == 0]

Question: How do you create a list comprehension that generates a list of squares of numbers from 1 to 5?
a) [x * x for x in range(1, 6)]
b) [x ** 2 for x in range(1, 6)]
c) [x * x for x in range(5)]
d) [x ** 2 for x in range(5)]

Answer: b) [x ** 2 for x in range(1, 6)]

Global and local variables:

Question: What is the scope of a global variable in Python?
a) It is accessible only within the function where it is defined.
b) It is accessible throughout the entire program.
c) It is accessible only within the module where it is defined.

d) It is accessible only within the class where it is defined.

Answer: b) It is accessible throughout the entire program.

Question: How do you access a global variable inside a function in Python?
a) By using the 'global' keyword before the variable name.
b) By using the 'local' keyword before the variable name.
c) By using the 'global' keyword inside the function definition.
d) By using the 'local' keyword inside the function definition.

Answer: c) By using the 'global' keyword inside the function definition.

Question: What is the output of the following code in Python?

python
Copy code
x = 10

```
def my_function():
    x = 5
    print(x)

my_function()
print(x)
```

a) 10 10
b) 5 10
c) 10 5
d) 5 5

Answer: b) 5 10

Question: How do you define a variable as global within a function in Python?
a) global x
b) local x
c) x.global
d) x.local

Answer: a) global x

Question: What is the output of the following code in Python?

python

Copy code
```
x = 15

def my_function():
    global x
    x = 10

my_function()
print(x)
```
css
Copy code
a) 10
b) 15
c) 25
d) Error: 'x' is not defined

Answer: a) 10
Using Optional and Named Arguments:

Question: What are optional arguments in a Python function?
a) Arguments that are mandatory to pass during function call.
b) Arguments that are passed using keyword names.
c) Arguments that have default values and can be omitted during function call.
d) Arguments that are passed using *args.

Answer: c) Arguments that have default values and can be omitted during function call.

Question: How do you define a function with an optional argument 'x' having a default value of 5 in Python?
a) def my_function(x=5):
b) def my_function(x):
c) def my_function(x=5)
d) def my_function(x == 5)

Answer: a) def my_function(x=5):

Question: What is the purpose of using named arguments in a Python function call?
a) To pass arguments without any names.
b) To pass arguments in a specific order.
c) To pass arguments using their variable names.
d) To pass arguments using *args.

Answer: c) To pass arguments using their variable names.

Using type, str, dir, and Other Built-In Functions:

Question: Which built-in function is used to determine the data type of an object in Python?
a) typeof()
b) type()
c) datatype()
d) typeof

Answer: b) type()

Question: What is the output of the following code in Python?

python
Copy code
x = 10.5
print(type(x))
arduino
Copy code
a) int
b) float
c) str
d) double

Answer: b) float
18. Question: Which built-in function is used to convert an object to a string in Python?
a) str()
b) convert()
c) to_string()
d) object()

css
Copy code
Answer: a) str()
19. Question: What is the output of the following code in Python?

python
Copy code
x = 42
print(str(x) + " is the answer.")
vbnet

Copy code
a) "42 is the answer."
b) "x is the answer."
c) "42 is the answer"
d) Error: 'x' is not defined

Answer: a) "42 is the answer."
20. Question: What is the purpose of the 'dir()' function in Python?
a) To delete a directory from the file system.
b) To display the list of built-in functions in Python.
c) To list the attributes and methods of an object.
d) To create a new directory in the file system.

vbnet
Copy code
Answer: c) To list the attributes and methods of an object.
Concepts of Modules:

Question: What is a module in Python?
a) A built-in function in Python.
b) A collection of functions and classes.
c) A single file containing Python code.
d) A type of data structure in Python.

Answer: c) A single file containing Python code.

Question: How do you import a module named 'my_module' in Python?
a) include my_module
b) import my_module
c) import my_module.py
d) from my_module import

Answer: b) import my_module

Question: What is the purpose of using an alias when importing a module in Python?
a) To hide the module from other parts of the code.
b) To rename the module for better readability.
c) To avoid importing unnecessary modules.
d) To convert the module into a class.

Answer: b) To rename the module for better readability.

Question: How do you import all objects from a module named 'my_module' in Python?
a) import my_module.*
b) from my_module import *
c) include my_module.*
d) from my_module import all

Answer: b) from my_module import *

Question: What is the output of the following code in Python?

python
Copy code
import math

x = math.sqrt(16)
print(x)
css
Copy code
a) 4
b) 16
c) 2
d) 8

Answer: c) 2
26. Question: Which built-in function is used to check if an object is callable in Python?
a) is_callable()
b) callable()
c) is_function()
d) function()

css
Copy code
Answer: b) callable()
27. Question: What is the output of the following code in Python?

python
Copy code
x = "Hello, World!"
print(x.upper())
vbnet
Copy code
a) "hello, world!"

b) "Hello, World!"
c) "HELLO, WORLD!"
d) "hello, WORLD!"

Answer: c) "HELLO, WORLD!"
28. Question: What is the purpose of the 'len()' function in Python?
a) To calculate the logarithm of a number.
b) To find the square root of a number.
c) To get the length of an object (e.g., a string or a list).
d) To perform bitwise operations on numbers.

vbnet
Copy code
Answer: c) To get the length of an object (e.g., a string or a list).
29. Question: What is the output of the following code in Python?

python
Copy code
x = [1, 2, 3, 4, 5]
y = [6, 7, 8]
print(x + y)
less
Copy code
a) [1, 2, 3, 4, 5, 6, 7, 8]
b) [7, 9, 11]
c) [1, 2, 3, 4, 5, [6, 7, 8]]
d) Error: cannot add list to list

Answer: a) [1, 2, 3, 4, 5, 6, 7, 8]
30. Question: What is the purpose of the 'sorted()' function in Python?
a) To sort a list in ascending order.
b) To sort a list in descending order.
c) To shuffle the elements of a list randomly.
d) To reverse the elements of a list.

vbnet
Copy code
Answer: a) To sort a list in ascending order.
31. Question: What is the output of the following code in Python?

python
Copy code

x = [3, 1, 4, 2, 5]
print(sorted(x))
less
Copy code
a) [1, 2, 3, 4, 5]
b) [5, 4, 3, 2, 1]
c) [3, 1, 4, 2, 5]
d) [2, 1, 3, 4, 5]

Answer: a) [1, 2, 3, 4, 5]
32. Question: What is the purpose of the 'max()' function in Python?
a) To find the smallest element in a list.
b) To find the sum of all elements in a list.
c) To find the largest element in a list.
d) To calculate the average of elements in a list.

vbnet
Copy code
Answer: c) To find the largest element in a list.
33. Question: What is the output of the following code in Python?

python
Copy code
x = [3, 1, 4, 2, 5]
print(max(x))
less
Copy code
a) 1
b) 5
c) 3
d) 15

Answer: b) 5
34. Question: What is the purpose of the 'min()' function in Python?
a) To find the largest element in a list.
b) To calculate the average of elements in a list.
c) To find the smallest element in a list.
d) To find the sum of all elements in a list.

vbnet
Copy code
Answer: c) To find the smallest element in a list.

35. Question: What is the output of the following code in Python?

python
Copy code
x = [3, 1, 4, 2, 5]
print(min(x))
less
Copy code
a) 1
b) 5
c) 3
d) 15

Answer: a) 1
36. Question: What is the purpose of the 'sum()' function in Python?
a) To find the largest element in a list.
b) To calculate the average of elements in a list.
c) To find the smallest element in a list.
d) To find the sum of all elements in a list.

python
Copy code
Answer: d) To find the sum of all elements in a list.
37. Question: What is the output of the following code in Python?

python
Copy code
x = [3, 1, 4, 2, 5]
print(sum(x))
less
Copy code
a) 10
b) 15
c) 3
d) 5

Answer: a) 10
38. Question: What is the purpose of the 'reversed()' function in Python?
a) To reverse the elements of a list.
b) To sort a list in descending order.
c) To shuffle the elements of a list randomly.
d) To find the largest element in a list.

vbnet
Copy code
Answer: a) To reverse the elements of a list.
39. Question: What is the output of the following code in Python?

python
Copy code
x = [3, 1, 4, 2, 5]
print(list(reversed(x)))
less
Copy code
a) [1, 2, 3, 4, 5]
b) [5, 4, 3, 2, 1]
c) [3, 1, 4, 2, 5]
d) [5, 2, 4, 1, 3]

Answer: b) [5, 4, 3, 2, 1]
40. Question: What is the purpose of the 'enumerate()' function in Python?
a) To count the number of occurrences of an element in a list.
b) To generate a sequence of integers.
c) To iterate over both the index and element of a list simultaneously.
d) To check if an element is present in a list.

sql
Copy code
Answer: c) To iterate over both the index and element of a list simultaneously.
41. Question: What is the output of the following code in Python?

python
Copy code
x = ["apple", "banana", "cherry"]
for i, item in enumerate(x):
    print(i, item)
less
Copy code
a) 0 apple
   1 banana
   2 cherry
b) 1 apple
   2 banana
   3 cherry

c) apple
  banana
  cherry
d) ("apple", 0)
  ("banana", 1)
  ("cherry", 2)

Answer: a) 0 apple
      1 banana
      2 cherry

42. Question: What is the purpose of the 'zip()' function in Python?
a) To combine two or more lists into a single list of tuples.
b) To count the number of occurrences of an element in a list.
c) To reverse the elements of a list.
d) To check if an element is present in a list.

vbnet
Copy code
Answer: a) To combine two or more lists into a single list of tuples.
43. Question: What is the output of the following code in Python?

python
Copy code
x = [1, 2, 3]
y = ["a", "b", "c"]
zipped = list(zip(x, y))
print(zipped)
less
Copy code
a) [(1, "a"), (2, "b"), (3, "c")]
b) [(1, "a"), (1, "b"), (1, "c")]
c) [(1, 2, 3), ("a", "b", "c")]
d) [(1, "a"), (2, "b"), (3, "c"), (1, 2, 3), ("a", "b", "c")]

Answer: a) [(1, "a"), (2, "b"), (3, "c")]
44. Question: What is the purpose of the 'zip()' function when used with 'zip(*zipped)'?
a) To unzip the list of tuples.
b) To combine two or more lists into a single list of tuples.
c) To count the number of occurrences of an element in a list.
d) To check if an element is present in a list.

vbnet

Copy code
Answer: a) To unzip the list of tuples.
45. Question: What is the output of the following code in Python?

python
Copy code
x = [1, 2, 3]
y = ["a", "b", "c"]
zipped = list(zip(x, y))
unzipped = list(zip(*zipped))
print(unzipped)
less
Copy code
a) [(1, "a"), (2, "b"), (3, "c")]
b) [(1, 2, 3), ("a", "b", "c")]
c) [(1, 1), ("a", "a"), (2, 2), ("b", "b"), (3, 3), ("c", "c")]
d) [(1, "a", 2, "b", 3, "c")]

Answer: c) [(1, 1), ("a", "a"), (2, 2), ("b", "b"), (3, 3), ("c", "c")]
46. Question: What is the purpose of the 'all()' function in Python?
a) To check if all elements in a list are True.
b) To check if any element in a list is True.
c) To check if all elements in a list are False.
d) To check if any element in a list is False.

sql
Copy code
Answer: a) To check if all elements in a list are True.
47. Question: What is the output of the following code in Python?

python
Copy code
x = [True, True, False]
print(all(x))
vbnet
Copy code
a) True
b) False
c) Error: 'x' is not defined
d) [True, True, False]

Answer: b) False

48. Question: What is the purpose of the 'any()' function in Python?
a) To check if all elements in a list are True.
b) To check if any element in a list is True.
c) To check if all elements in a list are False.
d) To check if any element in a list is False.

vbnet
Copy code
Answer: b) To check if any element in a list is True.
49. Question: What is the output of the following code in Python?

python
Copy code
x = [False, False, True]
print(any(x))
vbnet
Copy code
a) True
b) False
c) Error: 'x' is not defined
d) [False, False, True]

Answer: a) True
50. Question: What is the purpose of the 'filter()' function in Python?
a) To remove elements from a list based on a given condition.
b) To apply a given function to all items in an iterable.
c) To combine two or more lists into a single list of tuples.
d) To reverse the elements of a list.

vbnet
Copy code
Answer: a) To remove elements from a list based on a given condition.
Question: What is the output of the following code in Python?
python
Copy code
my_list = [1, 2, 3, 4, 5]
result = [x if x % 2 == 0 else x * 2 for x in my_list]
print(result)
a) [1, 2, 3, 4, 5]
b) [1, 4, 6, 8, 10]
c) [2, 4, 6, 8, 10]
d) [2, 2, 6, 4, 10]

Answer: c) [2, 4, 6, 8, 10]

Question: What is the purpose of the 'lambda' keyword in Python?

a) To create anonymous functions.
b) To declare global variables.
c) To import modules.
d) To define class methods.

Answer: a) To create anonymous functions.

Question: What does the 'map()' function return in Python?

a) A list of function objects.
b) A dictionary with function names as keys and their return values as values.
c) An iterator containing the results of applying a function to the items of an iterable.
d) A tuple containing the results of applying a function to the items of an iterable.

Answer: c) An iterator containing the results of applying a function to the items of an iterable.

Question: What is the output of the following code in Python?

python
Copy code
numbers = [1, 2, 3, 4, 5]
squared = map(lambda x: x ** 2, numbers)
print(next(squared))
print(next(squared))
a) 1 4
b) 1 1
c) 1 8
d) 1 9

Answer: a) 1 4

Question: What is the difference between global and local variables in Python?

a) Global variables are accessible only within a function, while local variables are accessible throughout the entire program.
b) Local variables are accessible only within a function, while global variables are accessible throughout the entire program.

c) Global variables are defined inside a function, while local variables are defined outside the function.
d) There is no difference between global and local variables in Python.

Answer: b) Local variables are accessible only within a function, while global variables are accessible throughout the entire program.

Question: Which keyword is used to define a global variable inside a function in Python?

a) global
b) var
c) global_var
d) gvar

Answer: a) global

Question: What is the output of the following code in Python?

python
Copy code
x = 10

```
def my_function(x=5):
    print(x)

my_function()
```

a) 10
b) 5
c) 0
d) None

Answer: b) 5

Question: What is the purpose of the 'type()' function in Python?

a) To convert an object to a string.
b) To determine the data type of an object.
c) To check if an object is callable.
d) To find the length of an object.

Answer: b) To determine the data type of an object.

Question: What is the output of the following code in Python?

python
Copy code
x = "Hello, World!"
print(type(x))
a) int
b) str
c) float
d) list

Answer: b) str

Question: What is the purpose of the 'dir()' function in Python?

a) To display the list of built-in functions in Python.
b) To list the attributes and methods of an object.
c) To create a new directory in the file system.
d) To delete a directory from the file system.

Answer: b) To list the attributes and methods of an object.

Question: What is the output of the following code in Python?
python
Copy code
numbers = [1, 2, 3, 4, 5]
squared = [x ** 2 for x in numbers if x % 2 == 0]
print(squared)
a) [4, 16]
b) [1, 4, 9, 16, 25]
c) [2, 4]
d) [1, 3, 5]

Answer: a) [4, 16]

Question: What is the purpose of the 'filter()' function in Python?

a) To apply a given function to all items in an iterable.
b) To remove elements from a list based on a given condition.
c) To sort a list in ascending order.
d) To combine two or more lists into a single list of tuples.

Answer: b) To remove elements from a list based on a given condition.

Question: What is the output of the following code in Python?

python
Copy code
```
x = 10

def my_function():
    x = 5
    print(x)

my_function()
print(x)
```
a) 10 10
b) 5 10
c) 10 5
d) 5 5

Answer: b) 5 10

Question: How do you define a function with optional arguments in Python?

a) def my_function(x):
b) def my_function(x=5):
c) def my_function(x, y=10):
d) def my_function(x, y):

Answer: c) def my_function(x, y=10):

Question: What is the output of the following code in Python?

python
Copy code
```
def my_function(x, y=2, z=3):
    print(x, y, z)

my_function(1)
```
a) 1 2 3
b) 1 2
c) 1 3
d) Error: missing 2 required positional arguments

Answer: b) 1 2

Question: What is the output of the following code in Python?
python
Copy code
x = 42
print(str(x) + " is the answer.")
a) "42 is the answer."
b) "x is the answer."
c) "42 is the answer"
d) Error: 'x' is not defined

Answer: a) "42 is the answer."

Question: What is the purpose of the 'len()' function in Python?

a) To calculate the average of elements in a list.
b) To find the square root of a number.
c) To get the length of an object (e.g., a string or a list).
d) To perform bitwise operations on numbers.

Answer: c) To get the length of an object (e.g., a string or a list).

Question: What is the output of the following code in Python?

python
Copy code
x = [1, 2, 3, 4, 5]
print(len(x))
a) 5
b) 1
c) [1, 2, 3, 4, 5]
d) Error: 'x' is not defined

Answer: a) 5

Question: What is the purpose of the 'sorted()' function in Python?

a) To sort a list in descending order.
b) To find the smallest element in a list.
c) To shuffle the elements of a list randomly.
d) To reverse the elements of a list.

Answer: a) To sort a list in descending order.

Question: What is the output of the following code in Python?

python
Copy code
x = [3, 1, 4, 2, 5]
print(sorted(x, reverse=True))
a) [5, 4, 3, 2, 1]
b) [1, 2, 3, 4, 5]
c) [5, 1, 4, 2, 3]
d) [3, 1, 4, 2, 5]

Answer: a) [5, 4, 3, 2, 1]
Question: Which of the following statements is true about tuples in Python?
a) Tuples are mutable.
b) Tuples can contain elements of different data types.
c) Tuples are created using curly braces {}.
d) Tuples are ordered collections.

Answer: d) Tuples are ordered collections.

Question: What is the correct way to create an empty tuple in Python?
a) tuple()
b) ()
c) [1, 2, 3]
d) (1, 2, 3)

Answer: b) ()

Question: Can you modify the elements of a tuple in Python after it is created?
a) Yes, using the append() method.
b) Yes, using the insert() method.
c) No, tuples are immutable and cannot be modified.
d) No, tuples are mutable and can be modified.

Answer: c) No, tuples are immutable and cannot be modified.

Question: What is the output of the following code in Python?

python

Copy code
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple[2:4])
a) (3, 4)
b) (2, 3)
c) (1, 2, 3)
d) (3, 4, 5)

Answer: a) (3, 4)

Question: Which of the following methods can be used to find the index of a specific element in a tuple?
a) find()
b) index()
c) search()
d) locate()

Answer: b) index()

Question: What is the output of the following code in Python?

python
Copy code
t1 = (1, 2, 3)
t2 = (4, 5, 6)
t3 = t1 + t2
print(t3)
a) (1, 2, 3)
b) (1, 2, 3, 4, 5, 6)
c) (5, 7, 9)
d) (14, 56)

Answer: b) (1, 2, 3, 4, 5, 6)

Question: What is the purpose of the count() method in Python for tuples?
a) To find the total number of elements in the tuple.
b) To count the occurrences of a specific element in the tuple.
c) To check if a specific element is present in the tuple.
d) To find the index of a specific element in the tuple.

Answer: b) To count the occurrences of a specific element in the tuple.

Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 2, 4, 2)
print(my_tuple.count(2))
a) 1
b) 2
c) 3
d) 4

Answer: c) 3

Question: What is the purpose of the sorted() function when used with a tuple in Python?
a) To sort the tuple in ascending order.
b) To sort the tuple in descending order.
c) To reverse the elements of the tuple.
d) To remove duplicates from the tuple.

Answer: a) To sort the tuple in ascending order.

Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (3, 1, 4, 2, 5)
sorted_tuple = tuple(sorted(my_tuple))
print(sorted_tuple)
a) (3, 1, 4, 2, 5)
b) (1, 2, 3, 4, 5)
c) (5, 4, 3, 2, 1)
d) (3, 1, 2, 4, 5)

Answer: b) (1, 2, 3, 4, 5)
Question: What is a tuple in Python?
a) A mutable collection of elements.
b) An ordered collection of elements.
c) A data type used for mathematical operations.
d) A type of loop in Python.

Answer: b) An ordered collection of elements.

Question: How do you create a tuple in Python?

a) (1, 2, 3)
b) [1, 2, 3]
c) {1, 2, 3}
d) "1, 2, 3"

Answer: a) (1, 2, 3)

Question: Can elements in a tuple be of different data types?
a) Yes
b) No

Answer: a) Yes

Question: What is the correct way to access an element from a tuple?
a) tuple(index)
b) tuple.index(index)
c) tuple[index]
d) index(tuple)

Answer: c) tuple[index]

Question: What will be the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple[2])
a) 1
b) 2
c) 3
d) 4

Answer: c) 3

Question: Can tuples be modified after they are created?
a) Yes, using the 'append()' method.
b) Yes, using the 'insert()' method.
c) No, tuples are immutable and cannot be modified.
d) No, tuples are mutable and can be modified.

Answer: c) No, tuples are immutable and cannot be modified.

Question: What is the output of the following code in Python?

python
Copy code
t1 = (1, 2, 3)
t2 = (4, 5, 6)
t3 = t1 + t2
print(t3)
a) (1, 2, 3)
b) (1, 2, 3, 4, 5, 6)
c) (5, 7, 9)
d) (14, 56)

Answer: b) (1, 2, 3, 4, 5, 6)

Question: What is the purpose of the 'len()' function when used with a tuple in Python?
a) To get the length of the tuple.
b) To find the maximum value in the tuple.
c) To check if a specific element is present in the tuple.
d) To sort the elements of the tuple.

Answer: a) To get the length of the tuple.

Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (10, 20, 30, 40, 50)
print(len(my_tuple))
a) 5
b) 10
c) 50
d) (10, 20, 30, 40, 50)

Answer: a) 5

Question: What is the purpose of the 'count()' method in Python for tuples?
a) To calculate the sum of elements in the tuple.
b) To find the index of a specific element in the tuple.
c) To count the occurrences of a specific element in the tuple.
d) To remove duplicates from the tuple.

Answer: c) To count the occurrences of a specific element in the tuple.

Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 2, 4, 2)
print(my_tuple.count(2))
css
Copy code
a) 1
b) 2
c) 3
d) 4

Answer: c) 3
12. Question: What is the purpose of the 'index()' method in Python for tuples?
a) To find the index of a specific element in the tuple.
b) To calculate the sum of elements in the tuple.
c) To check if a specific element is present in the tuple.
d) To sort the elements of the tuple.

arduino
Copy code
Answer: a) To find the index of a specific element in the tuple.
13. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 2, 4, 2)
print(my_tuple.index(2))
less
Copy code
a) 0
b) 1
c) 2
d) 3

Answer: b) 1
14. Question: Which of the following statements is true about tuples and lists in Python?
a) Tuples are mutable, and lists are immutable.
b) Tuples are ordered collections, and lists are unordered collections.

c) Tuples use square brackets [], and lists use parentheses ().
d) Tuples are immutable, and lists are mutable.

sql
Copy code
Answer: d) Tuples are immutable, and lists are mutable.
15. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3)
my_tuple[1] = 4
print(my_tuple)
vbnet
Copy code
a) (1, 4, 3)
b) (1, 2, 3)
c) Error: 'tuple' object does not support item assignment.
d) Error: 'int' object does not support item assignment.

Answer: c) Error: 'tuple' object does not support item assignment.
16. Question: Which of the following is the correct syntax to create a single-element tuple in Python?
a) (1)
b) (1,)
c) (1, 2)
d) 1

makefile
Copy code
Answer: b) (1,)
17. Question: What is the output of the following code in Python?

python
Copy code
x = (1)
print(type(x))
python
Copy code
a) int
b) float
c) tuple
d) str

Answer: a) int
18. Question: How do you convert a list into a tuple in Python?
a) Using the list() function.
b) Using the tuple() function.
c) Using the convert() method.
d) Using the to_tuple() method.

vbnet
Copy code
Answer: b) Using the `tuple()` function.
19. Question: What is the output of the following code in Python?

python
Copy code
my_list = [1, 2, 3, 4, 5]
my_tuple = tuple(my_list)
print(my_tuple)
scss
Copy code
a) [1, 2, 3, 4, 5]
b) (1, 2, 3, 4, 5)
c) "1, 2, 3, 4, 5"
d) (1), (2), (3), (4), (5)

Answer: b) (1, 2, 3, 4, 5)
20. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
my_list = list(my_tuple)
print(my_list)
less
Copy code
a) [1, 2, 3, 4, 5]
b) (1, 2, 3, 4, 5)
c) "1, 2, 3, 4, 5"
d) [1], [2], [3], [4], [5]

Answer: a) [1, 2, 3, 4, 5]
21. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
x = 6
if x in my_tuple:
    print("Found")
else:
    print("Not found")
python
Copy code
a) Found
b) Not found
c) Error: 'x' is not defined
d) Error: tuple index out of range

Answer: b) Not found
22. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
x = 2
if x in my_tuple:
    print("Found")
else:
    print("Not found")
python
Copy code
a) Found
b) Not found
c) Error: 'x' is not defined
d) Error: tuple index out of range

Answer: a) Found
23. Question: What is the purpose of the tuple() constructor in Python?
a) To create an empty tuple.
b) To create a tuple with elements passed as arguments.
c) To create a tuple with a single element.
d) To create a tuple from an existing iterable (e.g., a list).

vbnet

Copy code
Answer: b) To create a tuple with elements passed as arguments.
24. Question: What is the output of the following code in Python?

python
Copy code
x = tuple(range(1, 6))
print(x)
less
Copy code
a) (1, 2, 3, 4, 5)
b) [1, 2, 3, 4, 5]
c) (1, 2, 3, 4)
d) [1, 2, 3, 4]

Answer: a) (1, 2, 3, 4, 5)
25. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple[::-1])
less
Copy code
a) (5, 4, 3, 2, 1)
b) (1, 2, 3, 4, 5)
c) [5, 4, 3, 2, 1]
d) [1, 2, 3, 4, 5]

Answer: a) (5, 4, 3, 2, 1)
26. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple[1:4])
scss
Copy code
a) (1, 2, 3, 4)
b) (2, 3, 4, 5)
c) (2, 3, 4)
d) (1, 3, 5)

Answer: c) (2, 3, 4)
27. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple[-2])
css
Copy code
a) 1
b) 2
c) 4
d) 5

Answer: c) 4
28. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple[-3:])
scss
Copy code
a) (1, 2, 3)
b) (3, 4, 5)
c) (3, 4)
d) (4, 5)

Answer: d) (4, 5)

Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple[1:4:2])
scss
Copy code
a) (1, 2)
b) (2, 4)
c) (2, 5)

d) (2, 3, 4)

Answer: b) (2, 4)

Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple.index(3))
less
Copy code
a) 2
b) 3
c) 4
d) 5

Answer: a) 2
31. Question: What is the output of the following code in Python?

python
Copy code
my_tuple = (1, 2, 3, 4, 5)
print(my_tuple.count(2))
less
Copy code
a) 1
b) 2
c) 3
d) 4

Answer: b) 2
32. Question: What is the output of the following code in Python?

python
Copy code
t1 = (1, 2, 3)
t2 = (4, 5, 6)
t3 = t1 + t2
print(t3)
scss
Copy code

a) (1, 2, 3)
b) (1, 2, 3, 4, 5, 6)
c) (5, 7, 9)
d) (14, 56)

Answer: b) (1, 2, 3, 4, 5, 6)

Question: What is the output of the following code in Python?

python
Copy code
t1 = (1, 2, 3)
t2 = (4, 5, 6)
t3 = t1 * 3
print(t3)
scss
Copy code
a) (1, 2, 3)
b) (1, 2, 3, 1, 2, 3, 1, 2, 3)
c) (3, 2, 1)
d) (3, 2, 1, 3, 2, 1, 3, 2, 1)

Answer: b) (1, 2, 3, 1, 2, 3, 1, 2, 3)
Question: What is Object-Oriented Programming (OOP)?
a) A programming paradigm that focuses on procedural programming.
b) A programming approach that organizes code into a single function.
c) A programming paradigm that treats data as objects and focuses on data abstraction and encapsulation.
d) A programming technique that avoids the use of functions.

Answer: c) A programming paradigm that treats data as objects and focuses on data abstraction and encapsulation.

Question: What is an object in Object-Oriented Python?
a) A block of code that performs a specific task.
b) A variable used to store data.
c) A collection of functions.
d) An instance of a class with its own attributes and methods.

Answer: d) An instance of a class with its own attributes and methods.

Question: In Python, how is a code block defined inside a class or function?
a) Using curly braces {}.

b) Using indentation with spaces or tabs.
c) Using square brackets [].
d) Using parentheses ().

Answer: b) Using indentation with spaces or tabs.

Question: Which of the following is a native data type in Python?
a) List
b) Dictionary
c) Tuple
d) Integer

Answer: d) Integer

Question: How do you declare a variable in Python?
a) Using the variable keyword.
b) Using the var keyword.
c) Variables are automatically declared when used.
d) Using any valid name on the left side and assigning a value on the right side.

Answer: d) Using any valid name on the left side and assigning a value on the right side.

Question: What is the result of the following code in Python?

python
Copy code
x = 10
y = x
y = 20
print(x)
a) 10
b) 20
c) Error: x is not defined.
d) Error: y is not defined.

Answer: a) 10

Question: What is the primary purpose of using classes in Object-Oriented Programming?
a) To improve code indentation.
b) To create objects with their own attributes and methods.
c) To eliminate the need for functions.
d) To store data in variables.

Answer: b) To create objects with their own attributes and methods.

Question: In Python, what is the magic method used to initialize an object?
a) __init__()
b) __start__()
c) initialize()
d) create()

Answer: a) __init__()

Question: Which access specifier in Python allows access to a variable or method from any part of the program?
a) public
b) private
c) protected
d) global

Answer: a) public

Question: Which of the following statements is true regarding inheritance in Python?
a) A class can inherit properties from multiple parent classes using multiple inheritance.
b) A class can only inherit properties from one parent class in Python.
c) Inheritance is not supported in Python.
d) Child classes can access private variables of the parent class.

Answer: a) A class can inherit properties from multiple parent classes using multiple inheritance.

Question: What is an object in the context of Object-Oriented Programming?
a) A function used to modify data.
b) A variable that stores data.
c) An instance of a class with its own attributes and methods.
d) A library of code used to organize a program.

Answer: c) An instance of a class with its own attributes and methods.

Question: How do you define a class in Python?
a) Using the class keyword followed by the class name and a colon.
b) Using the def keyword followed by the class name and a colon.
c) Using the class keyword followed by the class name and parentheses.
d) Using the def keyword followed by the class name and parentheses.

Answer: a) Using the class keyword followed by the class name and a colon.

Question: What is the purpose of indentation in Python code?
a) To make the code look more organized and readable.
b) To define the beginning and end of a block of code.
c) Indentation is not required in Python.
d) To create comments in the code.

Answer: b) To define the beginning and end of a block of code.

Question: Which of the following is a native data type in Python?
a) List
b) Dictionary
c) Tuple
d) Integer

Answer: d) Integer

Question: How do you declare a variable in Python?
a) Using the variable keyword.
b) Using the var keyword.
c) Variables are automatically declared when used.
d) Using any valid name on the left side and assigning a value on the right side.

Answer: d) Using any valid name on the left side and assigning a value on the right side.

Question: What is the result of the following code in Python?

python
Copy code
x = 10
y = x
y = 20
print(x)
a) 10
b) 20
c) Error: x is not defined.
d) Error: y is not defined.

Answer: a) 10

Question: How do you access the value of a variable in Python?

a) Using the val() function.
b) Using the access() method.
c) By referring to the variable's name.
d) By using the get() keyword.

Answer: c) By referring to the variable's name.

Question: What is the purpose of the id() function in Python?
a) To create a new object instance.
b) To get the data type of a variable.
c) To get the memory address of an object.
d) To delete an object.

Answer: c) To get the memory address of an object.

Question: What does the term "self" refer to in Python class methods?
a) It refers to the class itself.
b) It refers to the object instance being accessed or created.
c) It refers to a private variable in the class.
d) It refers to a built-in keyword in Python.

Answer: b) It refers to the object instance being accessed or created.

Question: What is the data type of the following variable in Python?
python
Copy code
var = 42.5
a) int
b) float
c) str
d) None

Answer: b) float

Explanation: The variable var is assigned the value 42.5, which is a floating-point number, so the data type of the variable is float.

Question: What will be the output of the following code in Python?
python
Copy code
x = 10
y = x

y = y + 5
print(x)
a) 10
b) 15
c) 5
d) Error: x is not defined

Answer: a) 10

Explanation: The value of x is not modified in the code because the variable y is assigned the value of x, and then y is updated separately. Therefore, the output is 10.

Question: What is the data type of the following variable in Python?
python
Copy code
var = "Hello, World!"
a) int
b) float
c) str
d) bool

Answer: c) str

Explanation: The variable var is assigned the value "Hello, World!", which is a string, so the data type of the variable is str.

Question: What will be the output of the following code in Python?
python
Copy code
x = 5
y = x
x = "hello"
print(y)
a) 5
b) "hello"
c) Error: x is not defined
d) Error: unsupported operand type(s) for +: 'int' and 'str'

Answer: a) 5

Explanation: The value of y is not affected by the change in the value of x, as y was assigned the original value of x (which is 5). Therefore, the output is 5.

Question: What will be the output of the following code in Python?
python
Copy code
x = 10
y = x + "5"
print(y)
a) 105
b) 15
c) Error: unsupported operand type(s) for +: 'int' and 'str'
d) Error: y is not defined

Answer: c) Error: unsupported operand type(s) for +: 'int' and 'str'

Explanation: The operation x + "5" results in an error because it tries to add an integer (x) to a string ("5"), which is not allowed in Python.

Question: What is the output of the following code in Python?
python
Copy code
x = 5
y = 2
result = x / y
print(result)
a) 2.5
b) 2
c) 2.0
d) 2.2

Answer: a) 2.5

Explanation: The division of x (which is 5) by y (which is 2) results in 2.5.

Question: What is the output of the following code in Python?
python
Copy code
x = 10
y = 3
result = x // y
print(result)
a) 3
b) 3.0

c) 3.3333333333333335
d) 3.333333333333333

Answer: a) 3

Explanation: The floor division x // y of 10 by 3 results in 3.

Question: What is the data type of the following variable in Python?
python
Copy code
var = True
a) int
b) float
c) str
d) bool

Answer: d) bool

Explanation: The variable var is assigned the value True, which is a boolean value, so the data type of the variable is bool.

Question: What will be the output of the following code in Python?
python
Copy code
x = "Hello, "
y = "World!"
result = x + y
print(result)
a) Hello, World!
b) Hello,World!
c) HelloWorld!
d) Error: unsupported operand type(s) for +: 'int' and 'str'

Answer: a) Hello, World!

Explanation: The concatenation of x (which is "Hello, ") and y (which is "World!") results in the string "Hello, World!".

Question: What will be the output of the following code in Python?
python
Copy code
x = 10

y = "5"
result = x + y
print(result)
a) 105
b) 15
c) Error: unsupported operand type(s) for +: 'int' and 'str'
d) Error: y is not defined

Answer: c) Error: unsupported operand type(s) for +: 'int' and 'str'

Question: In Python, what does an object reference store?
a) The value of the object.
b) The memory address of the object.
c) The class of the object.
d) The object's methods.

Answer: b) The memory address of the object.

Question: Which of the following statements is true about a class in Python?
a) A class is an instance of an object.
b) A class is a data type used to store values.
c) A class is a blueprint for creating objects with specific attributes and methods.
d) A class is a built-in keyword in Python.

Answer: c) A class is a blueprint for creating objects with specific attributes and methods.

Question: What is the process of creating an object from a class known as in Python?
a) Inheritance
b) Overloading
c) Instantiation
d) Encapsulation

Answer: c) Instantiation

Question: Which term is used to refer to the variables and functions defined within a class?
a) Instances
b) Objects
c) Attributes
d) Methods

Answer: c) Attributes

Question: In Python, what is the purpose of inheritance?
a) To hide data from outside access.
b) To create multiple instances of an object.
c) To allow a class to acquire properties and methods of another class.
d) To overload operators for custom behavior.

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Question: What is method overloading in Python?
a) Defining multiple methods with the same name but different parameters in a class.
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Answer: b) Modifying the behavior of a method in the subclass.

Question: What is data hiding in Python?
a) Restricting access to data within a class to prevent modification.
b) Making data globally accessible in the program.
c) Storing data in a separate file for security purposes.
d) Preventing data from being used in the program.

Answer: a) Restricting access to data within a class to prevent modification.

Question: Which module in Python is used for regular expressions?
a) re
b) regex
c) regexp
d) regular

Answer: a) re

Question: What does the search() method of the re module do in Python?

a) It searches for a pattern at the beginning of a string.
b) It searches for a pattern at the end of a string.
c) It searches for a pattern anywhere in a string.
d) It searches for a pattern in a list.

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Question: In Object-Oriented Programming, what is inheritance?
a) The process of creating a new class from an existing class.
b) The process of creating objects from a class.
c) The process of overriding methods in a subclass.
d) The process of hiding data within a class.

Answer: a) The process of creating a new class from an existing class.

Question: In Python, how can you implement inheritance between classes?
a) Using the extends keyword.
b) Using the inherits keyword.
c) Using the super() function.
d) By mentioning the parent class name in parentheses when defining the child class.

Answer: d) By mentioning the parent class name in parentheses when defining the child class.

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d) Preventing data from being used in the program.

Answer: a) Restricting access to data within a class to prevent modification.

Question: In Python, how do you indicate that an attribute should not be accessed directly from outside the class?
a) By using the private keyword.
b) By using the protected keyword.
c) By using the hidden keyword.
d) By using a double underscore (__) before the attribute name.

Answer: d) By using a double underscore (__) before the attribute name.

Question: What does the re module in Python allow you to do?
a) Perform arithmetic operations on numbers.
b) Work with regular expressions for pattern matching.
c) Access relational databases.
d) Manipulate strings.

Answer: b) Work with regular expressions for pattern matching.

Question: In regular expressions, what does the metacharacter ^ represent?
a) Matches the beginning of a line.
b) Matches the end of a line.
c) Matches any character.
d) Matches any digit.

Answer: a) Matches the beginning of a line.

Question: In regular expressions, what does the metacharacter $ represent?
a) Matches the beginning of a line.
b) Matches the end of a line.
c) Matches any character.
d) Matches any digit.

Answer: b) Matches the end of a line.

Question: What does the findall() method in the re module do?
a) Searches for a pattern at the beginning of a string.
b) Searches for a pattern at the end of a string.
c) Searches for all occurrences of a pattern in a string.
d) Searches for the first occurrence of a pattern in a string.

Answer: c) Searches for all occurrences of a pattern in a string.

Question: What is a class in Python?

a) A block of code that performs a specific task.
b) A built-in function to store data.
c) A user-defined blueprint for creating objects with attributes and methods.
d) A variable used to store data.

Answer: c) A user-defined blueprint for creating objects with attributes and methods.

Question: How do you define a class in Python?
a) Using the class keyword followed by the class name and a colon.
b) Using the def keyword followed by the class name and a colon.
c) Using the class keyword followed by the class name and parentheses.
d) Using the def keyword followed by parentheses.

Answer: a) Using the class keyword followed by the class name and a colon.

Question: What is an object in Python?
a) A block of code that performs a specific task.
b) A variable used to store data.
c) An instance of a class with its own attributes and methods.
d) A library of code used to organize a program.

Answer: c) An instance of a class with its own attributes and methods.

Question: What is the process of creating an object from a class known as?
a) Inheritance
b) Instantiation
c) Declaration
d) Overloading

Answer: b) Instantiation

Question: How do you access the attributes of an object in Python?
a) Using the . (dot) operator followed by the attribute name.
b) Using the : (colon) operator followed by the attribute name.
c) Using the = (equal) operator followed by the attribute name.
d) Using the # (hash) symbol followed by the attribute name.

Answer: a) Using the . (dot) operator followed by the attribute name.

Question: What is the purpose of the __init__() method in a class?
a) To create a new instance of the class.
b) To initialize the attributes of the object when it is created.

c) To define a class variable.
d) To delete an object.

Answer: b) To initialize the attributes of the object when it is created.

Question: How do you create an object of a class in Python?
a) By calling the class name as a function.
b) By using the object() built-in function.
c) By calling the __init__() method of the class.
d) By using the new keyword.

Answer: a) By calling the class name as a function.

Question: What is the relationship between a class and an object?
a) A class is an object.
b) An object is a class.
c) A class is a blueprint for creating objects.
d) An object is a blueprint for creating classes.

Answer: c) A class is a blueprint for creating objects.

Question: How do you define attributes for a class in Python?
a) By using the def keyword followed by the attribute name and a colon.
b) By using the var keyword followed by the attribute name and a colon.
c) By using the class keyword followed by the attribute name and a colon.
d) By using the self keyword followed by the attribute name and a colon.

Answer: d) By using the self keyword followed by the attribute name and a colon.

Question: In Python, can a class have multiple objects of the same type?
a) No, a class can have only one object.
b) Yes, a class can have multiple objects with different attributes and values.
c) Yes, but all objects of the same class must have the same attributes and values.
d) Yes, but a class can have only two objects.

Answer: b) Yes, a class can have multiple objects with different attributes and values.
Question: What is inheritance in Python?
a) The process of creating new functions from existing functions.
b) The process of creating a new class from an existing class, inheriting its attributes and methods.
c) The process of overloading a method in a subclass.
d) The process of overriding a method in a superclass.

Answer: b) The process of creating a new class from an existing class, inheriting its attributes and methods.

Question: How do you implement inheritance in Python?
a) By using the implements keyword.
b) By using the extends keyword.
c) By mentioning the parent class name in parentheses when defining the child class.
d) By importing the parent class.

Answer: c) By mentioning the parent class name in parentheses when defining the child class.

Question: What is method overloading in Python?
a) Defining multiple methods with the same name but different parameters in a class.
b) Modifying the behavior of a method in the subclass.
c) Creating a method within another method.
d) Using a method from one class in another class.

Answer: a) Defining multiple methods with the same name but different parameters in a class.

Question: What is the purpose of method overloading?
a) To create a new method in the subclass.
b) To modify the behavior of a method in the superclass.
c) To define multiple methods with the same name but different functionality.
d) To access methods from other classes.

Answer: c) To define multiple methods with the same name but different functionality.

Question: How does Python determine which method to execute in method overloading?
a) It uses the first method defined in the subclass.
b) It uses the method with the highest number of parameters.
c) It uses the method with the lowest number of parameters.
d) It uses the method that matches the number and types of arguments passed.

Answer: d) It uses the method that matches the number and types of arguments passed.

Question: What is method overriding in Python?
a) Defining multiple methods with the same name but different parameters in a class.
b) Modifying the behavior of a method in the subclass.
c) Creating a method within another method.
d) Using a method from one class in another class.

Answer: b) Modifying the behavior of a method in the subclass.

Question: How do you perform method overriding in Python?
a) By defining multiple methods with the same name but different parameters in a class.
b) By using the super() function to call the parent class method and modify its behavior.
c) By creating a method within another method.
d) By importing a method from another class.

Answer: b) By using the super() function to call the parent class method and modify its behavior.

Question: What is the purpose of method overriding?
a) To create a new method in the subclass.
b) To modify the behavior of a method in the superclass.
c) To define multiple methods with the same name but different functionality.
d) To access methods from other classes.

Answer: b) To modify the behavior of a method in the superclass.

Question: What is the difference between method overloading and method overriding?
a) Method overloading allows creating multiple methods with the same name but different parameters, while method overriding modifies the behavior of a method in the subclass.
b) Method overloading modifies the behavior of a method in the subclass, while method overriding allows creating multiple methods with the same name but different parameters.
c) Method overloading is not supported in Python, while method overriding allows creating multiple methods with the same name but different parameters.
d) Method overloading and method overriding are two names for the same concept in Python.

Answer: a) Method overloading allows creating multiple methods with the same name but different parameters, while method overriding modifies the behavior of a method in the subclass.

Question: Can a Python class inherit from multiple parent classes (multiple inheritance)?
a) Yes, Python supports multiple inheritance.
b) No, Python allows inheriting from only one parent class.
c) Yes, but it is not recommended as it can lead to ambiguity.
d) Yes, but only if the parent classes are in the same module.

Answer: a) Yes, Python supports multiple inheritance.

Question 1: What is the purpose of the try block in Python exception handling?

A) It defines the code that might raise an exception.
B) It defines the code to handle exceptions.
C) It always runs regardless of exceptions.

D) It marks the code as potentially erroneous.

Answer: A

Question 2: In Python, which keyword is used to catch and handle exceptions?

A) catch
B) handle
C) except
D) trap

Answer: C

Question 3: What happens if an exception is raised within a try block and there is no matching except block?

A) The program terminates.
B) The finally block is executed.
C) Python raises an error.
D) The program continues executing normally.

Answer: C

Question 4: Which of the following is NOT a valid exception in Python?

A) ZeroDivisionError
B) ValueError
C) SyntaxError
D) RuntimeError

Answer: D

Question 5: What is the purpose of the finally block in Python exception handling?

A) It handles exceptions.
B) It is optional and doesn't serve any specific purpose.
C) It defines code that is executed no matter what, whether an exception occurs or not.
D) It is used to catch specific exceptions.

Answer: C

Question 6: How can you raise a custom exception in Python?

A) Using the raise statement with a built-in exception.
B) Using the throw statement.
C) Using the except statement.
D) Defining a class that inherits from the Exception class and raising an instance of it.

Answer: D

Question 7: What is the output of the following code?

python
Copy code
```
try:
    print(1 / 0)
except ZeroDivisionError:
    print("Zero division error")
except Exception:
    print("General exception")
finally:
    print("Finally block")
```
A) Zero division error
B) General exception
C) Finally block
D) Zero division error, Finally block

Answer: A

Question 8: In exception handling, can you have multiple except blocks for the same try block?

A) Yes, but only for built-in exceptions.
B) No, you can only have one except block per try block.
C) Yes, to handle different exceptions differently.
D) Yes, but only for custom exceptions.

Answer: C

Question 9: What is the purpose of the else clause in a try block?

A) It is used to define code that always runs.
B) It handles exceptions.
C) It defines code that runs when no exception occurs.
D) It specifies the type of exception to be caught.

Answer: C

Question 10: Which of the following is a valid way to define a custom exception in Python?

A) class MyCustomException(BaseException): pass
B) class MyCustomException(Exception): pass
C) class MyCustomException(Error): pass
D) class MyCustomException: pass

Answer: B

Question: What is Pandas in Python?
a) A Python package for mathematical operations.
b) A Python library for data manipulation and analysis.
c) A Python framework for building web applications.
d) A Python module for creating graphical plots.

Answer: b) A Python library for data manipulation and analysis.

Question: Which data structure is commonly used in Pandas for one-dimensional data?
a) Series
b) DataFrame
c) Array
d) List

Answer: a) Series

Question: What is a primary data structure in Pandas for two-dimensional data?
a) Series
b) DataFrame
c) Array
d) List

Answer: b) DataFrame

Question: In Pandas, what does NaN stand for?
a) Not a Name
b) Not a Number
c) Not a Null
d) No Available Number

Answer: b) Not a Number

Question: How do you read a CSV file in Pandas?
a) pd.read_csv()
b) pd.load_csv()
c) pd.read_file()
d) pd.load_file()

Answer: a) pd.read_csv()

Question: In Pandas, what does the head() method do?
a) It displays the first few rows of the DataFrame.
b) It displays the last few rows of the DataFrame.
c) It displays the summary statistics of the DataFrame.
d) It displays the data types of each column in the DataFrame.

Answer: a) It displays the first few rows of the DataFrame.

Question: How do you drop a column from a DataFrame in Pandas?
a) df.drop(column_name)
b) df.drop(column_name, axis=0)
c) df.drop(column_name, axis=1)
d) df.remove(column_name)

Answer: c) df.drop(column_name, axis=1)

Question: What is NumPy in Python?
a) A Python package for data visualization.
b) A Python library for numerical and array operations.
c) A Python framework for building web applications.
d) A Python module for data cleaning.

Answer: b) A Python library for numerical and array operations.

Question: Which of the following is not a valid data type in NumPy?
a) int
b) float
c) string
d) boolean

Answer: c) string

Question: What is data cleaning in Python?
a) The process of converting data to a specific data type.
b) The process of handling missing or incorrect data to improve data quality.
c) The process of visualizing data using charts and graphs.
d) The process of aggregating data into summary statistics.

Answer: b) The process of handling missing or incorrect data to improve data quality.

Question 11: What is the output of the following code snippet?

python
Copy code

```
try:
    x = int("abc")
except ValueError:
    print("ValueError")
except Exception:
    print("Exception")
else:
    print("Else block")
finally:
    print("Finally block")
```

A) ValueError, Finally block
B) Exception, Finally block
C) ValueError, Else block, Finally block
D) Exception, Else block, Finally block

Answer: A

Question 12: Which of the following statements about the finally block is true?

A) It must always be present after a try block.
B) It is optional and can be omitted.
C) It is executed only when an exception occurs.
D) It is executed regardless of whether an exception occurs or not.

Answer: D

Question 13: What is the output of the following code snippet?

python
Copy code

```
try:
    x = 10 / 0
except ZeroDivisionError:
    print("ZeroDivisionError")
except ArithmeticError:
    print("ArithmeticError")
finally:
    print("Finally block")
```

A) ZeroDivisionError, Finally block
B) ArithmeticError, Finally block
C) Finally block
D) ZeroDivisionError

Answer: A

Question 14: In exception handling, can a single except block handle multiple exceptions?

A) No, each exception requires its own separate except block.
B) Yes, by using the and keyword in the except block.
C) Yes, by listing the exceptions in a tuple within the except block.
D) Yes, by using the or keyword in the except block.

Answer: C

Question 15: What will happen if an exception is raised in the else block of a try statement?

A) The program will crash.
B) The exception will be caught by the nearest except block.
C) The finally block will execute before handling the exception.
D) Python will ignore the exception and continue executing the else block.

Answer: B

What is the purpose of the try block in exception handling?

A) It defines the code that might raise an exception.
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Answer: A

Question 2: Which keyword is used to catch and handle exceptions in Python?

A) catch
B) handle
C) except
D) trap

Answer: C

Question 3: What is the role of the finally block in exception handling?

A) It handles exceptions.
B) It ensures the code within it is always executed, whether an exception occurs or not.
C) It specifies which exceptions to catch.
D) It defines the code that might raise an exception.

Answer: B

Question 4: How can you raise a custom exception in Python?

A) Using the raise statement with a built-in exception.
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c) The process of visualizing data using charts and graphs.
d) The process of aggregating data into summary statistics.

Answer: b) The process of handling missing or incorrect data to improve data quality.

Connecting DB's with Python:

Question: Which Python library is commonly used to connect to databases?
a) psycopg2
b) pymysql
c) sqlite3
d) All of the above

Answer: d) All of the above

Question: What is the purpose of the connection string in database connections?
a) To specify the username and password
b) To specify the host and port
c) To specify the database name
d) All of the above

Answer: d) All of the above

Question: Which Python module is used to work with SQLite databases?
a) sqlite3
b) pymysql
c) psycopg2
d) pyodbc

Answer: a) sqlite3

Working with DB's using Python:

Question: How do you execute an SQL query in Python using the 'sqlite3' module?
a) execute_query(query)
b) connection.execute(query)
c) cursor.execute(query)
d) db.execute(query)

Answer: c) cursor.execute(query)

Question: What is the purpose of a transaction in database operations?
a) To ensure data integrity
b) To create a backup of the database
c) To optimize query performance
d) To delete all records from the database

Answer: a) To ensure data integrity

Question: Which method is used to fetch all rows from a result set obtained after executing a query?
a) fetch_one()
b) fetch_row()
c) fetch_all()
d) fetch()

Answer: c) fetch_all()

Accessing and Manipulating DB's:

Question: How do you retrieve the value of a specific column from a database result set in Python?
a) result_set.get_value(column_name)
b) result_set[column_name]
c) result_set.get(column_name)
d) result_set.retrieve(column_name)

Answer: b) result_set[column_name]

Question: What is the purpose of the 'commit()' method in database operations?
a) To execute a SQL query
b) To save the changes made to the database
c) To rollback the transaction
d) To close the database connection

Answer: b) To save the changes made to the database

Question: How do you delete a record from a database using Python?
a) DELETE FROM table_name WHERE condition
b) db.delete_record(table_name, condition)
c) cursor.delete_record(condition)
d) connection.execute("DELETE FROM table_name WHERE condition")

Answer: d) connection.execute("DELETE FROM table_name WHERE condition")

Creation of Python Virtual Environment:

Question: What is the purpose of using a virtual environment in Python?
a) To create a separate installation of Python
b) To isolate Python packages and dependencies for a project
c) To run Python code without internet connectivity
d) To enable multithreading in Python programs

Answer: b) To isolate Python packages and dependencies for a project

Question: Which module is used to create and manage virtual environments in Python?
a) venv
b) virtualenv
c) venvmanager
d) virtualenvmanager

Answer: a) venv

Question: How do you activate a virtual environment in Python (Windows)?
a) activate env_name
b) source env_name/activate
c) activate env_name/bin
d) env_name\Scripts\activate

Answer: d) env_name\Scripts\activate

Question: What is the purpose of the 'deactivate' command in a virtual environment?
a) To deactivate the virtual environment
b) To remove the virtual environment
c) To uninstall Python packages
d) To create a new virtual environment

Answer: a) To deactivate the virtual environment

Question: How do you create a virtual environment named 'myenv' in Python using 'venv'?
a) venv create myenv
b) venv myenv
c) python -m venv myenv
d) python create venv myenv

Answer: c) python -m venv myenv

Question: What is the purpose of the 'requirements.txt' file in a virtual environment?
a) To list all installed Python packages
b) To specify the project dependencies
c) To store database connection strings
d) To track the virtual environment's activation status

Answer: b) To specify the project dependencies

Question: Which Python library is used to connect to PostgreSQL databases?
a) psycopg2
b) pymysql
c) sqlite3
d) pyodbc

Answer: a) psycopg2

Question: When connecting to a MySQL database using Python, which port number is commonly used?
a) 3306
b) 5432
c) 1521
d) 1433

Answer: a) 3306

Working with DB's using Python:

Question: What does the fetchone() method return if there are no more rows to fetch?
a) None
b) []
c) 0
d) KeyError

Answer: a) None

Question: Which method is used to execute multiple SQL statements in a single call using 'sqlite3'?
a) execute_single()
b) execute_many()
c) execute_batch()
d) execute_all()

Answer: c) execute_batch()

Accessing and Manipulating DB's:

Question: What does the 'rollback()' method do in a database transaction?
a) Reverses the changes made in the transaction
b) Commits the transaction to the database
c) Deletes the transaction log
d) Initiates a new transaction

Answer: a) Reverses the changes made in the transaction

Question: How do you fetch only the first two rows from a result set using 'sqlite3' in Python?
a) cursor.fetch(2)
b) cursor.fetchmany(2)
c) cursor.fetchone(2)

d) cursor.fetch_rows(2)

Answer: b) cursor.fetchmany(2)

Creation of Python Virtual Environment:

Question: What is the purpose of the 'activate.bat' script in a Python virtual environment (Windows)?
a) To create a new virtual environment
b) To deactivate the virtual environment
c) To execute Python code
d) To activate the virtual environment

Answer: d) To activate the virtual environment

Question: How do you create a virtual environment named 'myenv' in Python using 'virtualenv'?
a) virtualenv myenv
b) python create virtualenv myenv
c) create virtualenv myenv
d) python -m virtualenv myenv

Answer: a) virtualenv myenv

Accessing and Manipulating DB's:

Question: What does the 'rollback()' method do in a database transaction?
a) Reverses the changes made in the transaction
b) Commits the transaction to the database
c) Deletes the transaction log
d) Initiates a new transaction

Answer: a) Reverses the changes made in the transaction

Question: How do you fetch only the first two rows from a result set using 'sqlite3' in Python?
a) cursor.fetch(2)
b) cursor.fetchmany(2)
c) cursor.fetchone(2)
d) cursor.fetch_rows(2)

Answer: b) cursor.fetchmany(2)
Which of the following is used for creating a loop in Python?
A. for
B. if

C. elif
D. else

Correct Answer: A. for
In Python, how do you declare a variable of type string?
A. int x = "Hello"
B. string x = "Hello"
C. x = "Hello"
D. var x = "Hello"

Correct Answer: C. x = "Hello"
Which method is used to convert a string to lower case in Python?
A. lowerCase()
B. toLowerCase()
C. lower()
D. toLower()

Correct Answer: C. lower()
What will be the output of the following Python code?

python
Copy code
print(8 // 3)
A. 2.67
B. 2
C. 3
D. 2.0

Correct Answer: B. 2
Which of the following is a correct syntax to output the type of a variable or object in Python?
A. print(typeof x)
B. print(type(x))
C. print(typeOf(x))
D. print(types(x))

Correct Answer: B. print(type(x))
What is the correct syntax to output the phrase "Hello World" in Python?
A. echo("Hello World")
B. print("Hello World")
C. printf("Hello World")
D. Print("Hello World")

Correct Answer: B. print("Hello World")
How do you create a comment in Python?
A. // This is a comment
B. # This is a comment
C. /* This is a comment */
D. -- This is a comment

Correct Answer: B. # This is a comment
Which of these data types is NOT supported in Python?
A. String
B. Dictionary
C. Array
D. Tuple

Correct Answer: C. Array
What does the following code return: 5 ** 2?
A. 10
B. 25
C. 7
D. 5

Correct Answer: B. 25
How do you create a variable with the numeric value 5?
A. x = 5
B. int x = 5
C. x := 5
D. var x = 5

Correct Answer: A. x = 5
Which of these collections defines a list in Python?
A. {1, 2, 3}
B. (1, 2, 3)
C. [1, 2, 3]
D. "1, 2, 3"

Correct Answer: C. [1, 2, 3]
What is the correct syntax to return the first character in a string?
A. x[0]
B. x.charAt(0)
C. x.substring(0,1)
D. x(0)

Correct Answer: A. x[0]
Which operator is used in Python to compare two values?
A. ==
B. =
C. <>
D. :=

Correct Answer: A. ==
How do you start writing an if statement in Python?
A. if x > y then:
B. if (x > y)
C. if x > y:
D. if x > y then

Correct Answer: C. if x > y:
What method can be used to replace parts of a string?
A. replace()
B. swap()
C. substring()
D. change()

Correct Answer: A. replace()
Which keyword is used to create a function in Python?
A. func
B. def
C. function
D. create

Correct Answer: B. def
What is the correct way to create a dictionary in Python?
A. {"name" : "John", "age" : 36}
B. dict(name="John", age=36)
C. [name: "John", age: 36]
D. Both A and B

Correct Answer: D. Both A and B
What is the output of len("Hello World")?
A. 11
B. 10
C. 12
D. "Hello World"

Correct Answer: A. 11
Which method can be used to return a string in upper case?
A. uppercase()
B. toUpperCase()
C. upper()
D. toUpper()

Correct Answer: C. upper()
What is the correct syntax to output the type of an object in Python?
A. print(typeof(x))
B. print(typeOf(x))
C. print(type(x))
D. print(x.type)

Correct Answer: C. print(type(x))
What will be the output of the following code?

python
Copy code
list = [1, 2, 3, 4, 5]
print(list[-1])
A. 1
B. 2
C. 4
D. 5

Correct Answer: D. 5
In Python, 'Hello', is the same as "Hello"?
A. True
B. False

Correct Answer: A. True
Which of the following is a Python tuple?
A. {1, 2, 3}
B. [1, 2, 3]
C. (1, 2, 3)
D. None of the above

Correct Answer: C. (1, 2, 3)
Which module in Python is used for mathematical operations?
A. math
B. calculate

C. numbers
D. mathematics

Correct Answer: A. math
What will be the output of the following Python code?

python
Copy code
x = 15
y = 4
print(x / y)
A. 3.75
B. 3
C. 4
D. 19

Correct Answer: A. 3.75
I will continue with the next set of questions in a follow-up message.

Continuing with the next set of multiple-choice questions on Python:

What will be the output of the following Python code?

python
Copy code
print("Python"[1])
A. P
B. y
C. t
D. h

Correct Answer: B. y
In Python, which of the following is used to handle exceptions?
A. try/except
B. try/catch
C. do/while
D. if/else

Correct Answer: A. try/except
Which of the following is an invalid variable name in Python?
A. my_var
B. _myvar

C. my-var
D. myVar

Correct Answer: C. my-var
What is the output of the following Python code?

python
Copy code
a = [1, 2, 3]
b = [4, 5, 6]
c = a + b
print(c)
A. [1, 2, 3, 4, 5, 6]
B. [5, 7, 9]
C. [1, 2, 3, 1, 2, 3]
D. Error

Correct Answer: A. [1, 2, 3, 4, 5, 6]
What is the correct syntax to import a module named 'math'?
A. import math
B. include math
C. require math
D. use math

Correct Answer: A. import math
Which of the following correctly creates a list?
A. list = list(1, 2, 3)
B. list = [1, 2, 3]
C. list = {1, 2, 3}
D. list = (1, 2, 3)

Correct Answer: B. list = [1, 2, 3]
What is the correct syntax for defining a class named 'Student' in Python?
A. class Student:
B. class Student() {}
C. define Student:
D. create Student:

Correct Answer: A. class Student:
In Python, how do you insert an item at a given position in a list?
A. list.add(item, position)
B. list.insert(position, item)

C. list.append(position, item)
D. list.put(item, position)

Correct Answer: B. list.insert(position, item)
What will be the output of the following Python code?

python
Copy code
x = 10
y = 20
if x > y:
    print("x is greater")
else:
    print("y is greater")
A. x is greater
B. y is greater
C. x and y are equal
D. No output

Correct Answer: B. y is greater
Which function in Python is used to get the number of items in a list?
A. len()
B. count()
C. size()
D. length()

Correct Answer: A. len()
What is the correct way to declare a new list in Python?
A. list = ()
B. list = []
C. list = {}
D. list = new list()

Correct Answer: B. list = []
How do you remove an item from a list in Python?
A. list.remove(item)
B. list.delete(item)
C. list.drop(item)
D. list.erase(item)

Correct Answer: A. list.remove(item)
Which of these is NOT a core data type in Python?

A. Lists
B. Dictionary
C. Tuples
D. Class

Correct Answer: D. Class
How do you create a new instance of the class 'MyClass'?
A. instance = MyClass.new()
B. instance = new MyClass()
C. instance = MyClass()
D. MyClass instance = new MyClass()

Correct Answer: C. instance = MyClass()
What is the output of the following Python code?

python
Copy code
print(bool(0))
A. True
B. False
C. 0
D. None

Correct Answer: B. False
In Python, what will '5 % 2' return?
A. 2.5
B. 2
C. 1
D. 5

Correct Answer: C. 1
What does the 'break' keyword do in Python?
A. Pauses a loop
B. Stops the execution of the current loop
C. Exits the program
D. Skips the rest of the code

Correct Answer: B. Stops the execution of the current loop
How do you check if a list contains a specific item in Python?
A. if item in list:
B. if list.contains(item):
C. if item.exists(list):

D. if list.has(item):

Correct Answer: A. if item in list:
Which method in Python is used to get a substring from a string?
A. substring()
B. slice()
C. substr()
D. get()

Correct Answer: B. slice()
What is the correct syntax to add an element at the end of a list in Python?
A. list.add(item)
B. list.append(item)
C. list.insert(item)
D. list.push(item)

Correct Answer: B. list.append(item)
Which operator is used in Python for string concatenation?
A. +
B. &
C. %
D. #

Correct Answer: A. +
How do you create a tuple in Python?
A. (1, 2, 3)
B. [1, 2, 3]
C. {1, 2, 3}
D. "1, 2, 3"

Correct Answer: A. (1, 2, 3)
What is the correct syntax to define a lambda function in Python?
A. lambda x: x * x
B. function(x) = x * x
C. def x: x * x
D. lambda x => x * x

Correct Answer: A. lambda x: x * x
What does the 'continue' keyword do in Python?
A. Passes to the next iteration of the loop
B. Terminates the loop
C. Skips the rest of the script

D. Pauses the loop

Correct Answer: A. Passes to the next iteration of the loop
What is the correct syntax for reading from a file in Python?
A. file.open("myfile.txt", "r")
B. open("myfile.txt", "read")
C. open("myfile.txt", "r")
D. read("myfile.txt")

Correct Answer: C. open("myfile.txt", "r")
Which function is used to check if an object is an instance of a specific class or type?
A. isinstance()
B. isType()
C. isClass()
D. typeOf()

Correct Answer: A. isinstance()
In Python, what is the result of 'not True'?
A. False
B. True
C. 0
D. None

Correct Answer: A. False
What is the correct way to define a function in Python?
A. def functionName():
B. function functionName():
C. create functionName():
D. make functionName():

Correct Answer: A. def functionName()
Which of the following is a mutable data type in Python?
A. String
B. Tuple
C. List
D. Integer

Correct Answer: C. List
How do you insert comments in Python code?
A. // This is a comment
B. <!-- This is a comment -->
C. # This is a comment

D. /* This is a comment */

Correct Answer: C. # This is a comment
Which operator is used in Python for power or exponentiation?
A. **
B. ^
C. %
D. &&

Correct Answer: A. **
What is the output of print(2 * 3 + 4)?
A. 10
B. 14
C. 6
D. 8

Correct Answer: B. 14
How do you create a list in Python?
A. []
B. ()
C. {}
D. <>

Correct Answer: A. []
What keyword is used for error handling in Python?
A. error
B. try
C. catch
D. except

Correct Answer: B. try
Which of the following is not a core data type in Python?
A. Lists
B. Dictionary
C. Sets
D. Arrays

Correct Answer: D. Arrays
What does the len() function do in Python?
A. Returns the length of an object
B. Finds the sum of an object
C. Sorts an object

D. Reverses an object

Correct Answer: A. Returns the length of an object
How do you get the first character of a string in Python?
A. string(0)
B. string[0]
C. string.first()
D. string.charAt(0)

Correct Answer: B. string[0]
What does the 'break' keyword do in a loop?
A. Pauses the loop
B. Continues to the next iteration
C. Exits the loop
D. Skips the next iteration

Correct Answer: C. Exits the loop
How is a block of code identified in Python?
A. Curly braces {}
B. Parentheses ()
C. Indentation
D. Semicolons ;

Correct Answer: C. Indentation
Which method converts a string into an integer in Python?
A. int()
B. strToInt()
C. parseInt()
D. toInt()

Correct Answer: A. int()
What is the correct way to create a dictionary in Python?
A. {key: value}
B. (key: value)
C. [key, value]
D. <key, value>

Correct Answer: A. {key: value}
What is slicing in Python?
A. Removing elements from a list
B. Accessing a range of items in a sequence
C. Sorting a list

D. Merging two sequences

Correct Answer: B. Accessing a range of items in a sequence
Which of the following is used for floor division in Python?
A. //
B. /
C. %
D. **

Correct Answer: A. //
What does the 'pass' keyword do in Python?
A. Passes control to another function
B. Does nothing and acts as a placeholder
C. Terminates the program
D. Skips an iteration in a loop

Correct Answer: B. Does nothing and acts as a placeholder
In Python, how do you declare a multi-line string?
A. Using single quotes (' ')
B. Using double quotes (" ")
C. Using triple quotes ('' '' or """ """)
D. Using a backslash ()

Correct Answer: C. Using triple quotes ('' '' or """ """)
Which function is used to get user input in Python?
A. input()
B. getInput()
C. readInput()
D. scan()

Correct Answer: A. input()
How do you check if a key exists in a dictionary?
A. 'key' in dictionary
B. dictionary.has_key('key')
C. dictionary.containsKey('key')
D. dictionary.exists('key')

Correct Answer: A. 'key' in dictionary
What is the result of 3 == 3.0 in Python?
A. True
B. False
C. Error

D. None

Correct Answer: A. True
What is the use of the 'global' keyword in Python?
A. To create a global variable
B. To access a global variable inside a function
C. To declare a variable as constant
D. To import a global module

Correct Answer: B. To access a global variable inside a function
How do you create a tuple in Python?
A. []
B. ()
C. {}
D. <>

Correct Answer: B. ()
Which of these is not a valid Python variable name?
A. _my_var
B. 2myvar
C. myVar
D. my_var

Correct Answer: B. 2myvar
What is the output of print(8 % 3)?
A. 2
B. 2.67
C. 5
D. 0

Correct Answer: A. 2
What does the 'continue' keyword do in a loop?
A. Exits the loop
B. Skips the current iteration and continues with the next
C. Pauses the loop
D. None of the above

Correct Answer: B. Skips the current iteration and continues with the next
In Python, which of these collections is ordered and changeable?
A. List
B. Tuple
C. Set

D. Dictionary

Correct Answer: A. List
How do you start a while loop in Python?
A. while (condition):
B. while condition do:
C. while [condition]:
D. while = condition:

Correct Answer: A. while (condition):
What is the output of the following code?

python
Copy code
x = "awesome"
def myfunc():
  print("Python is " + x)
myfunc()
A. Python is awesome
B. Python is
C. Error
D. None

Correct Answer: A. Python is awesome
Which of these is a correct way to create a set in Python?
A. set = {}
B. set = []
C. set = ()
D. set = {1, 2, 3}

Correct Answer: D. set = {1, 2, 3}
What is the correct file extension for Python files?
A. .py
B. .python
C. .pyt
D. .pt

Correct Answer: A. .py
How do you declare a variable of integer type in Python?
A. x = int(10)
B. int x = 10
C. x = 10

D. x = 10.0

Correct Answer: C. x = 10
Which method can be used to remove an item from a list?
A. list.remove(item)
B. list.delete(item)
C. list.erase(item)
D. list.cut(item)

Correct Answer: A. list.remove(item)
What will be the output of the following code?

python
Copy code
list = [1, 2, 3, 4]
list.append(5)
print(list)
A. [1, 2, 3, 4]
B. [5, 1, 2, 3, 4]
C. [1, 2, 3, 4, 5]
D. Error

Correct Answer: C. [1, 2, 3, 4, 5]
How do you concatenate strings in Python?
A. Using the + operator
B. Using the & operator
C. Using the concat() method
D. Using the append() method

Correct Answer: A. Using the + operator
What is the correct way to handle exceptions in Python?
A. try...except
B. try...catch
C. try...finally
D. try...error

Correct Answer: A. try...except
Which of the following is a valid way to output a string and a variable?
A. print("Hello" + name)
B. print("Hello", name)
C. print("Hello" - name)
D. print("Hello" / name)

Correct Answer: B. print("Hello", name)
What does the following code return?

python
Copy code
def func(x):
    return x + 1
print(func(4))
A. 5
B. 4
C. None
D. Error

Correct Answer: A. 5
How do you declare a boolean variable in Python?
A. x = true
B. x = True
C. x = 1
D. x = 'true'

Correct Answer: B. x = True
What is the correct way to write a conditional statement in Python?
A. if x > 10 then:
B. if (x > 10)
C. if x > 10:
D. if x > 10 do:

Correct Answer: C. if x > 10:
How do you create an empty set in Python?
A. set = {}
B. set = []
C. set = ()
D. set = set()

Correct Answer: D. set = set()
What is the correct syntax for defining a class in Python?
A. class MyClass {}
B. class MyClass():
C. MyClass class:
D. MyClass():

Correct Answer: B. class MyClass()
What will be the output of the following code?

python
Copy code
x = [1, 2, 3]
y = x
y[1] = 4
print(x)
A. [1, 2, 3]
B. [1, 4, 3]
C. [1, 4, 4]
D. Error

Correct Answer: B. [1, 4, 3]
How do you check the type of a variable in Python?
A. type(variable)
B. typeof(variable)
C. varType(variable)
D. check(variable)

Correct Answer: A. type(variable)
Which method is used to reverse a list in Python?
A. list.reverse()
B. reverse(list)
C. list.reversed()
D. reversed(list)

Correct Answer: A. list.reverse()
What does the 'in' operator do in Python?
A. Checks if a value exists in a sequence
B. Inserts a value into a sequence
C. Compares two values
D. Multiplies two values

Correct Answer: A. Checks if a value exists in a sequence
What is the result of 'Hello' * 3 in Python?
A. HelloHelloHello
B. Hello3
C. Error
D. None

Correct Answer: A. HelloHelloHello
How do you convert a list to a tuple in Python?
A. tuple(list)
B. convert(list)
C. list.toTuple()
D. tupleize(list)

Correct Answer: A. tuple(list)
What is the correct way to write a for loop in Python?
A. for x in range(0, 5):
B. for (x = 0; x < 5; x++):
C. for x in 0 to 5:
D. for x <= 5:

Correct Answer: A. for x in range(0, 5)
How do you remove an item from a set in Python?
A. set.remove(item)
B. set.delete(item)
C. set.discard(item)
D. set.cut(item)

Correct Answer: C. set.discard(item)
What is the output of the following code?

python
Copy code
print('Python'[1:4] * 2)
A. PythonPython
B. ythonython
C. ythyth
D. Error

Correct Answer: C. ythyth
Which of the following statements about Python's Global Interpreter Lock (GIL) is true?
A. It allows multiple threads to execute Python bytecodes in parallel.
B. It is a mechanism that prevents deadlocks in multi-threaded programs.
C. It ensures that only one thread executes Python bytecode at a time.
D. It increases the performance of multi-threaded applications.

Correct Answer: C. It ensures that only one thread executes Python bytecode at a time.
What is the output of the following list comprehension?

python
Copy code
[x for x in range(5) if x % 2 == 0]
A. [1, 3, 5]
B. [0, 1, 2, 3, 4]
C. [0, 2, 4]
D. [1, 2, 3, 4]

Correct Answer: C. [0, 2, 4]
In Python, what is a decorator?
A. A function that adds functionality to an existing function.
B. A tool to format code for better readability.
C. A data structure similar to a tuple.
D. A loop that executes until a condition is met.

Correct Answer: A. A function that adds functionality to an existing function.
How does the 'is' operator differ from the '==' operator in Python?
A. 'is' checks for value equality, while '==' checks for identity.
B. 'is' checks for identity, while '==' checks for value equality.
C. There is no difference; they are interchangeable.
D. 'is' can be overloaded, but '==' cannot.

Correct Answer: B. 'is' checks for identity, while '==' checks for value equality.
What is the purpose of the 'init' method in Python classes?
A. To initialize the class's attributes when an object is created.
B. To finalize an object before it is destroyed.
C. To check if an object's attributes are initialized correctly.
D. To initialize static methods in the class.

Correct Answer: A. To initialize the class's attributes when an object is created.
What will be the output of the following code?

python
Copy code
lambda_func = lambda x: x ** 2
print(lambda_func(5))
A. 10
B. 25
C. 5
D. Error

Correct Answer: B. 25

In Python, what is 'monkey patching'?
A. A technique to dynamically update a module or class during runtime.
B. A built-in library for automated testing.
C. A method to optimize code performance.
D. A way to install third-party modules.

Correct Answer: A. A technique to dynamically update a module or class during runtime.
What is the result of executing 'assert 2 + 2 == 5, "Math error"' in Python?
A. No output, as the assertion passes.
B. "Math error"
C. AssertionError with the message "Math error"
D. SyntaxError

Correct Answer: C. AssertionError with the message "Math error"
Which of the following is true about Python's garbage collection?
A. It is based solely on reference counting.
B. It can be manually controlled using the gc module.
C. It is not possible to trigger garbage collection manually.
D. Objects are never really deleted; they are just marked as free.

Correct Answer: B. It can be manually controlled using the gc module.

What does the else clause in a Python loop execute?
A. Before the loop starts
B. After the loop completes without encountering a break statement
C. When the loop encounters a break statement
D. At the end of every iteration

Correct Answer: B. After the loop completes without encountering a break statement
How does a classmethod differ from a staticmethod in Python?
A. A classmethod passes a reference to the class as its first argument.
B. A staticmethod can access and modify the class state.
C. There is no difference between the two.
D. A classmethod cannot access the class attributes.

Correct Answer: A. A classmethod passes a reference to the class as its first argument.
In Python, what is the output of list("hello")?
A. ['hello']
B. ['h', 'e', 'l', 'l', 'o']
C. ['h', 'e', 'll', 'o']
D. SyntaxError

Correct Answer: B. ['h', 'e', 'l', 'l', 'o']
Which of the following is a feature of Python's slice notation?
A. It cannot include negative indices.
B. It can be used to reverse a sequence.
C. It only works with lists, not strings.
D. It creates a deep copy of the sequence.

Correct Answer: B. It can be used to reverse a sequence.
What will dict.get('key', 5) return if 'key' is not in dict?
A. None
B. 5
C. KeyError
D. 0

Correct Answer: B. 5
What does the yield keyword do in Python?
A. It exits a function.
B. It creates a generator.
C. It pauses a loop and returns a value.
D. It is used for error handling.

Correct Answer: B. It creates a generator.
What is the purpose of the __call__ method in Python?
A. To call a function from a class.
B. To initialize an object.
C. To make an object callable like a function.
D. To terminate an object.

Correct Answer: C. To make an object callable like a function.
In Python, what does the @property decorator do?
A. Marks a method as private.
B. Makes an attribute read-only.
C. Converts a method into a class attribute.
D. Creates a static property.

Correct Answer: C. Converts a method into a class attribute.
How do you create an anonymous function in Python?
A. Using the def keyword
B. Using the lambda keyword
C. By declaring it without a name
D. Python does not support anonymous functions

Correct Answer: B. Using the lambda keyword
What is the output of ('a', 'b') * 2?
A. ('a', 'b', 'a', 'b')
B. ('aa', 'bb')
C. ('a', 'b') * 2
D. TypeError

Correct Answer: A. ('a', 'b', 'a', 'b')
What does list(set([1, 2, 2, 3])) return?
A. [1, 2, 3]
B. [1, 2, 2, 3]
C. [1, 3, 2]
D. [2, 1, 3]

Correct Answer: A. [1, 2, 3]
What is the result of bool('False') in Python?
A. True
B. False
C. SyntaxError
D. None

Correct Answer: A. True
In Python, what will isinstance(5, (int, str)) return?
A. True
B. False
C. TypeError
D. None

Correct Answer: A. True
What is the purpose of the pass statement in Python?
A. To terminate a loop
B. To act as a placeholder for future code
C. To pass control to the next iteration of a loop
D. To indicate that a block of code should be skipped

Correct Answer: B. To act as a placeholder for future code
What is the output of the following code?

python
Copy code
x = 10

```
def foo():
    x += 1
    return x
print(foo())
```

A. 11
B. 10
C. UnboundLocalError
D. None

Correct Answer: C. UnboundLocalError
What is the use of *args in function definition?
A. It specifies a variable number of arguments.
B. It unpacks a sequence into separate arguments.
C. It creates a list of arguments.
D. It is used for keyword arguments.

Correct Answer: A. It specifies a variable number of arguments.
How can you obtain the name of an object's class in Python?
A. obj.name
B. obj.__name__
C. obj.class
D. obj.__class__.__name__

Correct Answer: D. obj.__class__.__name__
What is the output of 1 in [1, 2, [1, 2]]?
A. True
B. False
C. TypeError
D. None

Correct Answer: A. True
What is the purpose of else in a Python try block?
A. It catches exceptions.
B. It executes if no exceptions occur.
C. It executes regardless of exceptions.
D. It is used for final cleanup actions.

Correct Answer: B. It executes if no exceptions occur.
What does import this do in Python?
A. Imports a module named 'this'
B. Throws an ImportError
C. Displays the Zen of Python

D. Does nothing

Correct Answer: C. Displays the Zen of Python
In Python, what is a metaclass?
A. A class that creates other classes.
B. A superclass of all classes.
C. A module that contains class definitions.
D. A special method within a class.

Correct Answer: A. A class that creates other classes.
What is the output of all([0, 1, 2, 3])?
A. True
B. False
C. None
D. TypeError

Correct Answer: B. False
How does a finally block in try-except work?
A. It runs only if an exception occurs.
B. It runs regardless of whether an exception occurs or not.
C. It runs if no exception occurs.
D. It runs before the try block.

Correct Answer: B. It runs regardless of whether an exception occurs or not.
What is the purpose of the with statement in Python?
A. To create a new scope.
B. To handle exceptions.
C. To ensure proper resource management.
D. To define a new namespace.

Correct Answer: C. To ensure proper resource management.
What will be the output of the following code?

python
Copy code
```
x = 10
def foo():
    global x
    x = x * 2
    return x
print(foo())
```
A. 20

B. 10
C. UnboundLocalError
D. x is not defined

Correct Answer: A. 20
What is the difference between deep and shallow copy in Python?
A. Deep copy duplicates all objects, shallow copy duplicates only the top level.
B. Shallow copy duplicates all objects, deep copy duplicates only the top level.
C. There is no difference.
D. Deep copy is faster than shallow copy.

Correct Answer: A. Deep copy duplicates all objects, shallow copy duplicates only the top level.
What will be the output of the following code?

python
Copy code
mylist = [1, 2, 3]
mylist.append([4, 5])
print(len(mylist))
A. 3
B. 5
C. 4
D. TypeError

Correct Answer: C. 4
In Python, what is the purpose of the __slots__ attribute in classes?
A. To define static variables
B. To save memory by limiting attribute creation
C. To lock the attributes of a class
D. To create slots for multithreading

Correct Answer: B. To save memory by limiting attribute creation
What is the output of print({True: 'yes', 1: 'no', 1.0: 'maybe'})?
A. {True: 'yes', 1: 'no', 1.0: 'maybe'}
B. {True: 'maybe'}
C. SyntaxError
D. {1: 'no', 1.0: 'maybe'}

Correct Answer: B. {True: 'maybe'}
How do you make a Python function accept an arbitrary number of keyword arguments?
A. Using *args
B. Using **kwargs

C. Using *kwargs
D. Using **args

Correct Answer: B. Using **kwargs
What is the difference between == and is in Python?
A. == checks for value equality, is checks for identity.
B. == checks for identity, is checks for value equality.
C. No difference.
D. == can be overridden, is cannot.

Correct Answer: A. == checks for value equality, is checks for identity.
What does the enumerate function do in Python?
A. It counts the number of elements in an iterable.
B. It returns an iterable of tuples containing indices and values from an iterable.
C. It enumerates all possible combinations of elements in an iterable.
D. It converts a list to a dictionary.

Correct Answer: B. It returns an iterable of tuples containing indices and values from an iterable.
What will be the output of the following code?

python
Copy code
```
def func(a, b=[]):
    b.append(a)
    return b
print(func(1))
print(func(2))
```
A. [1], [2]
B. [1], [1, 2]
C. [1, 2], [1, 2]
D. SyntaxError

Correct Answer: B. [1], [1, 2]
What is the output of print(type(lambda x: x))?
A. <class 'function'>
B. <class 'lambda'>
C. <class 'method'>
D. <class 'callable'>

Correct Answer: A. <class 'function'>
In Python, what is a context manager?
A. A tool for managing imports

B. An object that defines __enter__ and __exit__ methods
C. A manager for application contexts
D. An object that controls access to shared resources

Correct Answer: B. An object that defines __enter__ and __exit__ methods
What is the result of print(0.1 + 0.2 == 0.3)?
A. True
B. False
C. SyntaxError
D. None

Correct Answer: B. False
How is a class method different from a static method in Python?
A. A class method receives the class as an implicit first argument.
B. A static method cannot access or modify the class state.
C. A class method cannot be called on an instance.
D. A static method cannot be overridden in subclasses.

Correct Answer: A. A class method receives the class as an implicit first argument.
What is the purpose of the __str__ method in a Python class?
A. To provide a string representation of an object.
B. To convert an object to a string.
C. To print the object.
D. To define the object's identity.

Correct Answer: A. To provide a string representation of an object.
What is the output of print(2 ** 3 ** 2)?
A. 64
B. 512
C. 6561
D. 8

Correct Answer: C. 6561
What will the following code output?

python
Copy code
print(2 ** 3 ** 2)
A. 64
B. 512
C. 729
D. 256

Correct Answer: B. 512
What is the use of the walrus operator (:=) in Python?
A. To assign and return a value in the same expression
B. To compare two values
C. To create a deep copy of an object
D. To merge two dictionaries

Correct Answer: A. To assign and return a value in the same expression
Which of the following is not a valid way to create a generator in Python?
A. Using a generator function with a yield statement
B. Using a generator expression
C. Using a list comprehension inside parentheses
D. Using the map function with a lambda

Correct Answer: C. Using a list comprehension inside parentheses
What is the output of the following code snippet?

python
Copy code
```
x = "abcdef"
i = "i"
while i in x:
    print(i, end=" ")
```
A. i i i i i i ...
B. abcdef
C. No output
D. Infinite loop

Correct Answer: C. No output
In Python, how does a class method differ from a static method?
A. Class method cannot access or modify class state.
B. Static method takes a mandatory 'self' parameter.
C. Class method takes a 'cls' parameter that points to the class.
D. There is no difference.

Correct Answer: C. Class method takes a 'cls' parameter that points to the class.
What does the following code do?

python
Copy code
```
_ = [print(i) for i in range(3)]
```

A. Prints numbers 0 to 2 and creates a list [0, 1, 2]
B. Prints numbers 0 to 2 and creates a list [None, None, None]
C. Causes a syntax error
D. Prints nothing

Correct Answer: B. Prints numbers 0 to 2 and creates a list [None, None, None]
What will be the output of the following code?

python
Copy code
```
def func(a, b=[]):
    b.append(a)
    return b
print(func(1))
print(func(2))
```
A. [1], [2]
B. [1], [1, 2]
C. [1, 2], [1, 2]
D. [2], [2]

Correct Answer: B. [1], [1, 2]
What is the purpose of the 'else' clause in Python loops?
A. It is executed if the loop is never entered.
B. It is executed if the loop exits normally (without a break).
C. It replaces the 'finally' clause.
D. It is executed if an error occurs in the loop.

Correct Answer: B. It is executed if the loop exits normally (without a break).
How does the 'dict.get()' method differ from using square brackets to access dictionary values?
A. 'get()' returns None if the key is not found, while square brackets raise a KeyError.
B. 'get()' raises an exception if the key is not found.
C. There is no difference between the two methods.
D. 'get()' can only be used with string keys.

Correct Answer: A. 'get()' returns None if the key is not found, while square brackets raise a KeyError.
Which of the following is true about the '@staticmethod' decorator in Python?
A. It cannot be used within classes.
B. It turns a method into a method that does not receive the instance as the first argument.
C. It's used to create an asynchronous function.
D. It is deprecated in Python 3.

Correct Answer: B. It turns a method into a method that does not receive the instance as the first argument.
What will the following code output?

python
Copy code
print(isinstance("abc", str))
A. True
B. False
C. Error
D. None

Correct Answer: A. True
What is a metaclass in Python?
A. A class that inherits from multiple base classes
B. A class used to create other classes
C. A superclass from which many subclasses can be created
D. A class that cannot be instantiated

Correct Answer: B. A class used to create other classes
What is the result of executing 'list(set([1, 2, 1, 3, 2, 4]))'?
A. [1, 2, 3, 4]
B. [1, 2, 1, 3, 2, 4]
C. [4, 3, 2, 1]
D. [1, 3, 4]

Correct Answer: A. [1, 2, 3, 4]
What does the 'yield' keyword do in Python?
A. It pauses the execution of a function and returns a value.
B. It permanently stops the execution of a function.
C. It is used to start a new thread.
D. It is used to import modules.

Correct Answer: A. It pauses the execution of a function and returns a value.
What is the output of 'type(lambda x: x)'?
A. <class 'function'>
B. <class 'lambda'>
C. <class 'method'>
D. <class 'type'>

Correct Answer: A. <class 'function'>
How does the 'finally' block in try-except-else-finally work?

A. It is executed only if an exception occurs.
B. It is executed whether an exception occurs or not.
C. It replaces the 'else' block.
D. It is executed instead of the 'except' block.

Correct Answer: B. It is executed whether an exception occurs or not.
What is the purpose of the underscore (_) in Python?
A. It indicates a private variable.
B. It is used for unpacking.
C. It is a convention for ignoring the values.
D. It is used to access the last output in the Python shell.

Correct Answer: C. It is a convention for ignoring the values.
What will the following code output?

python
Copy code
x = 0.1 + 0.2
print(x == 0.3)
A. True
B. False
C. Error
D. None

Correct Answer: B. False
What is the difference between 'deepcopy' and 'copy' in Python?
A. 'deepcopy' creates a new id for the copied object, while 'copy' does not.
B. There is no difference; they are synonymous.
C. 'copy' is a method, while 'deepcopy' is a function.
D. 'deepcopy' copies nested objects recursively, 'copy' does not.

Correct Answer: D. 'deepcopy' copies nested objects recursively, 'copy' does not.
How do you create a virtual environment in Python?
A. Using the 'venv' module
B. Using the 'virtualenv' command
C. Using the 'env' command
D. Using the 'virtual' keyword

Correct Answer: A. Using the 'venv' module
What is 'List Comprehension' used for in Python?
A. To iterate over a list
B. To create a new list based on an existing one

C. To compress a list into a smaller size
D. To concatenate multiple lists

Correct Answer: B. To create a new list based on an existing one
What is the output of '5 in [1, 2, 3, 4, 5]'?
A. True
B. False
C. Error
D. None

Correct Answer: A. True
Which of the following is the correct syntax for a dictionary comprehension in Python?
A. {x: x2 for x in range(5)}
B. [x: x2 for x in range(5)]
C. {x2 for x in range(5)}
D. [x2: x for x in range(5)]

Correct Answer: A. {x: x**2 for x in range(5)}
What is the difference between '== and' 'is' in Python?
A. '==' checks for value equality, 'is' checks for identity.
B. 'is' checks for value equality, '==' checks for identity.
C. '==' is used for numeric comparisons, 'is' for string comparisons.
D. There is no difference.

Correct Answer: A. '==' checks for value equality, 'is' checks for identity.
What will be the output of the following code?

python
Copy code
x = ["apple", "banana"]
y = ["apple", "banana"]
z = x
print(x is y)
print(x is z)
A. True, True
B. False, True
C. True, False
D. False, False

Correct Answer: B. False, True
What is the output of the following code?

python
Copy code
```
def func(x=[]):
    x.append(1)
    return x
print(func())
print(func())
```
A. [1], [1]
B. [1, 1], [1, 1]
C. [1], [1, 1]
D. [1, 1], [1]

Correct Answer: C. [1], [1, 1]
What does the 'super()' function do in Python?
A. It refers to the superclass of the current class.
B. It returns the parent class of a given class.
C. It calls a method from the parent class.
D. It increases the speed of the function.

Correct Answer: C. It calls a method from the parent class.
What is the purpose of the 'name' attribute in Python?
A. It stores the name of the current module.
B. It is used to check if a Python file is run as a script or imported as a module.
C. It contains the name of the Python interpreter.
D. It is used for debugging purposes.

Correct Answer: B. It is used to check if a Python file is run as a script or imported as a module.
What is the output of the following code?

python
Copy code
```
def make_multiplier(x):
    def multiplier(n):
        return x * n
    return multiplier
times3 = make_multiplier(3)
print(times3(5))
```
A. 15
B. 8
C. Error
D. None

Correct Answer: A. 15
In Python, what does the 'enumerate()' function do?
A. It counts the number of elements in a sequence.
B. It adds counters to an iterable and returns it.
C. It enumerates through a dictionary.
D. It generates a list of tuples.

Correct Answer: B. It adds counters to an iterable and returns it.
What is the correct way to create a byte string in Python?
A. b"Hello"
B. byte("Hello")
C. "Hello".to_bytes()
D. bytes("Hello")

Correct Answer: A. b"Hello"
Which of the following is a feature of Python's context managers?
A. They are used for creating new contexts.
B. They manage the garbage collection process.
C. They provide a way to allocate and release resources.
D. They handle multiple contexts simultaneously.

Correct Answer: C. They provide a way to allocate and release resources.
What will be the output of the following code?

python
Copy code
```
def func(value, list=[]):
    list.append(value)
    return list
list1 = func(1)
list2 = func(123, [])
list3 = func('a')
print(list1)
print(list2)
print(list3)
```
A. [1], [123], ['a']
B. [1], [123], [1, 'a']
C. [1, 'a'], [123], [1, 'a']
D. [1], [1, 123], [1, 'a']

Correct Answer: B. [1], [123], [1, 'a']
What does the 'collections.Counter' class in Python do?

A. It counts the number of times an element appears in a sequence.
B. It implements a counter tool for counting hashable objects.
C. It is used for creating custom collections.
D. It provides a count of the elements in a dictionary.

Correct Answer: B. It implements a counter tool for counting hashable objects.
What will be the output of the following code?

python
Copy code
x = [0, 1, 2, 3]
y = [x] * 4
y[0][0] = 5
print(y)
A. [5, 1, 2, 3]
B. [[5, 1, 2, 3], [0, 1, 2, 3], [0, 1, 2, 3], [0, 1, 2, 3]]
C. [[5, 1, 2, 3], [5, 1, 2, 3], [5, 1, 2, 3], [5, 1, 2, 3]]
D. Error

Correct Answer: C. [[5, 1, 2, 3], [5, 1, 2, 3], [5, 1, 2, 3], [5, 1, 2, 3]]
In Python, what is the main use of a metaclass?
A. To create classes dynamically
B. To implement multithreading
C. To manage database connections
D. To handle exceptions globally

Correct Answer: A. To create classes dynamically
Which of the following is true about Python's lambda functions?
A. They can contain multiple expressions
B. They return a value without a return statement
C. They can modify external variables
D. They support type annotations

Correct Answer: B. They return a value without a return statement
How does Python implement private variables in a class?
A. Using the private keyword
B. By prefixing the variable name with a double underscore (__)
C. By defining them outside the class
D. Python does not support private variables

Correct Answer: B. By prefixing the variable name with a double underscore (__)
What will be the output of the following code?

python
Copy code
```
def make_multiplier_of(n):
    return lambda x: x * n
times3 = make_multiplier_of(3)
times5 = make_multiplier_of(5)
print(times3(9))
```
A. 27
B. 15
C. 45
D. 3

Correct Answer: A. 27
In Python, which of the following is true about the str and repr methods?
A. str is used for debugging, while repr is for a user-friendly display
B. str should be readable, while repr should be unambiguous
C. str can only be used with strings, while repr with other types
D. There is no difference between the two

Correct Answer: B. str should be readable, while repr should be unambiguous
What is the output of the following code?

python
Copy code
```
x = 'abcd'
for i in range(len(x)):
    x = 'a'
    print(x, end="")
```
A. aaaa
B. abcd
C. a
D. Error

Correct Answer: A. aaaa
Which of the following is a feature of Python's generator functions?
A. They return a single value
B. They terminate immediately after yielding a value
C. They maintain state between yields
D. They can only be used once

Correct Answer: C. They maintain state between yields

What is the use of Python's itertools module?
A. For memory management
B. To implement user authentication
C. For efficient looping and iteration structures
D. To interact with the operating system

Correct Answer: C. For efficient looping and iteration structures
What is the purpose of Python's with statement?
A. To ensure that resources are properly released
B. To create a new scope for variables
C. To handle exceptions in a specific block of code
D. To create a context manager

Correct Answer: A. To ensure that resources are properly released
How is a static method defined in a Python class?
A. Using the @staticmethod decorator
B. By declaring it outside of the class
C. By writing it inside a class without the 'self' parameter
D. By using the static keyword

Correct Answer: A. Using the @staticmethod decorator
What is a key characteristic of a Python generator?
A. It cannot yield more than one value
B. It automatically implements the iterator protocol
C. It increases the speed of the program
D. It is a special type of list

Correct Answer: B. It automatically implements the iterator protocol
What will be the output of the following code?

python
Copy code
my_list = [1, 2, 3]
a, b, c = my_list
print(b)
A. 1
B. 2
C. 3
D. Error

Correct Answer: B. 2
In Python, which of the following is the correct way to implement a class method?

A. By using the @classmethod decorator
B. By using the @staticmethod decorator
C. By using the first parameter as 'cls'
D. Both A and C

Correct Answer: D. Both A and C
What is the output of the following code?

python
Copy code
```
def test():
    try:
        return 1
    finally:
        return 2
print(test())
```
A. 1
B. 2
C. None
D. Error

Correct Answer: B. 2
Which of these is a correct implementation of a generator in Python?
A. def my_gen(): yield x
B. def my_gen(): return x
C. my_gen = (x for x in range(3))
D. Both A and C

Correct Answer: D. Both A and C
How can you achieve multiple inheritance in Python?
A. By separating parent classes with a comma
B. By creating nested classes
C. Python does not support multiple inheritance
D. By using interfaces

Correct Answer: A. By separating parent classes with a comma
What will be the output of the following code?

python
Copy code
```
x = [0, 1, 2, 3]
y = [x] * 4
```

y[0][0] = 5
print(y)
A. [5, 1, 2, 3]
B. [[5, 1, 2, 3], [0, 1, 2, 3], [0, 1, 2, 3], [0, 1, 2, 3]]
C. [[5, 1, 2, 3], [5, 1, 2, 3], [5, 1, 2, 3], [5, 1, 2, 3]]
D. Error

Correct Answer: C. [[5, 1, 2, 3], [5, 1, 2, 3], [5, 1, 2, 3], [5, 1, 2, 3]]
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D. To handle exceptions globally

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A. They can contain multiple expressions
B. They return a value without a return statement
C. They can modify external variables
D. They support type annotations

Correct Answer: B. They return a value without a return statement
How does Python implement private variables in a class?
A. Using the private keyword
B. By prefixing the variable name with a double underscore (__)
C. By defining them outside the class
D. Python does not support private variables

Correct Answer: B. By prefixing the variable name with a double underscore (__)
What will be the output of the following code?

python
Copy code
```
def make_multiplier_of(n):
    return lambda x: x * n
times3 = make_multiplier_of(3)
times5 = make_multiplier_of(5)
print(times3(9))
```
A. 27
B. 15
C. 45
D. 3

Correct Answer: A. 27
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B. str should be readable, while repr should be unambiguous
C. str can only be used with strings, while repr with other types
D. There is no difference between the two

Correct Answer: B. str should be readable, while repr should be unambiguous
What is the output of the following code?

python
Copy code
```
x = 'abcd'
for i in range(len(x)):
    x = 'a'
    print(x, end="")
```
A. aaaa
B. abcd
C. a
D. Error

Correct Answer: A. aaaa
Which of the following is a feature of Python's generator functions?
A. They return a single value
B. They terminate immediately after yielding a value
C. They maintain state between yields
D. They can only be used once

Correct Answer: C. They maintain state between yields
What is the use of Python's itertools module?
A. For memory management
B. To implement user authentication
C. For efficient looping and iteration structures
D. To interact with the operating system

Correct Answer: C. For efficient looping and iteration structures
What is the purpose of Python's with statement?
A. To ensure that resources are properly released
B. To create a new scope for variables
C. To handle exceptions in a specific block of code
D. To create a context manager

Correct Answer: A. To ensure that resources are properly released
How is a static method defined in a Python class?
A. Using the @staticmethod decorator
B. By declaring it outside of the class
C. By writing it inside a class without the 'self' parameter
D. By using the static keyword

Correct Answer: A. Using the @staticmethod decorator
What is a key characteristic of a Python generator?
A. It cannot yield more than one value
B. It automatically implements the iterator protocol
C. It increases the speed of the program
D. It is a special type of list

Correct Answer: B. It automatically implements the iterator protocol
What will be the output of the following code?

python
Copy code
my_list = [1, 2, 3]
a, b, c = my_list
print(b)
A. 1
B. 2
C. 3
D. Error

Correct Answer: B. 2
In Python, which of the following is the correct way to implement a class method?
A. By using the @classmethod decorator
B. By using the @staticmethod decorator
C. By using the first parameter as 'cls'
D. Both A and C

Correct Answer: D. Both A and C
What is the output of the following code?

python
Copy code
def test():
    try:

```
        return 1
    finally:
        return 2
print(test())
```

A. 1
B. 2
C. None
D. Error

Correct Answer: B. 2
Which of these is a correct implementation of a generator in Python?
A. def my_gen(): yield x
B. def my_gen(): return x
C. my_gen = (x for x in range(3))
D. Both A and C

Correct Answer: D. Both A and C
How can you achieve multiple inheritance in Python?
A. By separating parent classes with a comma
B. By creating nested classes
C. Python does not support multiple inheritance
D. By using interfaces

Correct Answer: A. By separating parent classes with a comma
What is the output of the following code?

python
Copy code

```
print(bool(0), bool(3.14159), bool(-3), bool(1.0+1j))
```

A. False True True True
B. True False False True
C. False True True False
D. True True True True

Correct Answer: A. False True True True
In Python, what does the call method do for a class?
A. Initializes a new instance of the class
B. Makes an instance of the class callable
C. Calls a method within the class
D. Determines the callable objects in a class

Correct Answer: B. Makes an instance of the class callable

What will be the output of the following code?

python
Copy code
my_list = ['a', 'b', 'c', 'd']
print("".join(my_list))
A. Error
B. ['a', 'b', 'c', 'd']
C. abcd
D. a b c d

Correct Answer: C. abcd
What is the correct way to create a namedtuple in Python?
A. namedtuple('P', 'x y z')
B. namedtuple('P', ['x', 'y', 'z'])
C. Both A and B
D. namedtuple('P', x, y, z)

Correct Answer: C. Both A and B
Which of the following is true about Python's new and init methods?
A. new is called to create an instance, init is called to initialize it
B. new and init are always called together
C. new can return an instance of another class
D. Both A and C

Correct Answer: D. Both A and C
How does the '@property' decorator function in Python?
A. It defines a method that behaves like an attribute
B. It sets a property to be read-only
C. It creates a new property for a class
D. It declares a variable as private

Correct Answer: A. It defines a method that behaves like an attribute
What is the result of executing list(set([1,2,3,2,1])) in Python?
A. [1, 2, 3, 2, 1]
B. [1, 2, 3]
C. [2, 3, 1]
D. Error

Correct Answer: B. [1, 2, 3]
What does the walrus operator := do in Python?
A. Assigns and returns a value in an expression

B. Compares values in a tuple
C. Unpacks a sequence into variables
D. Acts as a shortcut for lambda functions

Correct Answer: A. Assigns and returns a value in an expression
What is the output of the following code?

python
Copy code

```
x = 10
def outer():
    x = 20
    def inner():
        nonlocal x
        x = 30
    inner()
    return x
print(outer(), x)
```

A. 30, 10
B. 20, 30
C. 30, 30
D. 20, 10

Correct Answer: A. 30, 10
In Python, how can you dynamically modify a class?
A. Using metaclasses
B. By redefining it
C. Using the setattr function
D. Python does not support dynamic modification of classes

Correct Answer: C. Using the setattr function
Which of the following is a correct way to use a context manager in Python?
A. with open('file.txt') as file: ...
B. open('file.txt').as(file) ...
C. open file 'file.txt' as: ...
D. manage open('file.txt') as file: ...

Correct Answer: A. with open('file.txt') as file: ...
What is the output of the following code?

python
Copy code

x = (1, 2, [3, 4])
x[2] += [5, 6]
A. (1, 2, [3, 4, 5, 6])
B. TypeError
C. (1, 2, [3, 4])
D. (1, 2, [5, 6])

Correct Answer: B. TypeError
In Python, what is the purpose of the else clause in a try-except block?
A. It is executed if no exception occurs
B. It is always executed after the try block
C. It replaces the finally block
D. It is executed instead of the except block

Correct Answer: A. It is executed if no exception occurs
Which of the following is not a valid way to create a dictionary in Python?
A. dict([(1, 'one'), (2, 'two')])
B. {1: 'one', 2: 'two'}
C. dict(1 = 'one', 2 = 'two')
D. dict(one=1, two=2)

Correct Answer: C. dict(1 = 'one', 2 = 'two')
What is the purpose of Python's enumerate function?
A. To count the number of elements in a sequence
B. To iterate over a sequence and retrieve element indexes
C. To combine elements of two sequences
D. To convert a tuple into a list

Correct Answer: B. To iterate over a sequence and retrieve element indexes

What will be the output of the following code?

```
def outer():
    x = "local"
    def inner():
        nonlocal x
        x = "nonlocal"
        print("inner:", x)
    inner()
    print("outer:", x)
outer()
```

A. inner: nonlocal, outer: local

B. inner: local, outer: nonlocal
C. inner: nonlocal, outer: nonlocal
D. Error

Correct Answer: C. inner: nonlocal, outer: nonlocal
Which of the following is not a valid Python identifier?
A. _my_var
B. 2my_var
C. my_var2
D. myVar

Correct Answer: B. 2my_var

In Python, what will happen when you try to override a method that is decorated with @staticmethod in a subclass?
A. The method in the subclass will also be static
B. The method in the subclass will not be static
C. A TypeError will be raised
D. It will result in a runtime error

Correct Answer: A. The method in the
What is the output of 'list("1234".partition("2"))'?
A. ['1', '2', '34']
B. ['12', '3', '4']
C. ['123', '4']
D. Error

Correct Answer: A. ['1', '2', '34']
Which keyword is used for aliasing in Python imports?
A. as
B. alias
C. using
D. with

Correct Answer: A. as
How does Python treat private variables in a class?
A. They are strictly private and cannot be accessed outside the class.
B. They can be accessed with a special syntax, using a single underscore.
C. They are just a convention and can be accessed normally.
D. Python does not support private variables.

Correct Answer: C. They are just a convention and can be accessed normally.

What is the output of 'bool(set())'?
A. True
B. False
C. Error
D. None

Correct Answer: B. False
What is the result of '0.1 + 0.2 == 0.3'?
A. True
B. False
C. Error
D. None

Correct Answer: B. False
What is the correct way to create a generator in Python?
A. Using parentheses with a list comprehension
B. Using square brackets with a list comprehension
C. Using curly braces with a list comprehension
D. Using angle brackets with a list comprehension

Correct Answer: A. Using parentheses with a list comprehension
What is the output of 'print("Hello", end="\n\n")'?
A. Hello followed by two new lines
B. Hello followed by one new line
C. SyntaxError
D. Hello\n\n

Correct Answer: A. Hello followed by two new lines
What is the purpose of the walrus operator ':=' in Python?
A. To assign and return a value in the same expression
B. To compare values strictly
C. To create a deep copy of an object
D. To declare a variable as constant

Correct Answer: A. To assign and return a value in the same expression
What will 'print(chr(ord('A') + 1))' output?
A. B
B. Error
C. A2
D. 66

Correct Answer: A. B

What does the expression 'any([False, False, []])' evaluate to?
A. True
B. False
C. Error
D. None

Correct Answer: B. False
Which statement is true about the '@staticmethod' decorator?
A. It turns a method into a class method.
B. It indicates that a method does not require an instance.
C. It is used to create abstract methods.
D. It makes a method private.

Correct Answer: B. It indicates that a method does not require an instance.
What is the use of the 'name' attribute in Python?
A. It holds the name of the current module.
B. It is used to name a function.
C. It stores the name of the class.
D. It is used for naming variables.

Correct Answer: A. It holds the name of the current module.
What will be the output of 'print(type(lambda x: x))'?
A. <class 'function'>
B. <class 'lambda'>
C. <class 'method'>
D. <class 'callable'>

Correct Answer: A. <class 'function'>
How does the 'yield' statement work in Python?
A. It permanently exits a loop.
B. It returns a value and pauses the function.
C. It creates a new thread.
D. It throws an exception.

Correct Answer: B. It returns a value and pauses the function.
What is the output of 'print(2 in [1, 3, 2, 4][::-1])'?
A. True
B. False
C. Error
D. None

Correct Answer: A. True

What does 'del' do in Python?
A. Deletes a variable from memory
B. Clears the contents of a variable
C. Deletes the content of a file
D. Removes an element from a list

Correct Answer: A. Deletes a variable from memory
What is the output of 'print({a: a2 for a in range(3)})'?**
A. {0: 0, 1: 1, 2: 4}
B. [0, 1, 4]
C. {0, 1, 4}
D. SyntaxError

Correct Answer: A. {0: 0, 1: 1, 2: 4}
How is memory management handled in Python?
A. Through manual allocation and deallocation
B. Using reference counting and garbage collection
C. Exclusively through garbage collection
D. Python does not handle memory management

Correct Answer: B. Using reference counting and garbage collection
What will 'print("aBcD".swapcase())' output?
A. ABCD
B. abcd
C. aBCd
D. ABCd

Correct Answer: B. abcd
How do you create a shallow copy of a list in Python?
A. list.copy()
B. copy(list)
C. list[:]
D. Both A and C

Correct Answer: D. Both A and C
What is 'MRO' in Python?
A. Memory Release Order
B. Module Resolution Order
C. Method Resolution Order
D. Memory Resolution Order

Correct Answer: C. Method Resolution Order

What is a metaclass in Python?
A. A class that defines the behavior of other classes
B. A class used for meta-programming
C. A superclass of all classes
D. A class that cannot be instantiated

Correct Answer: A. A class that defines the behavior of other classes
What does 'import this' do in Python?
A. Imports a module named 'this'
B. Throws an ImportError
C. Displays the Zen of Python
D. Does nothing

Correct Answer: C. Displays the Zen of Python
What will be the output of 'print("abc".isidentifier())'?
A. True
B. False
C. Error
D. None

Correct Answer: A. True
What does the 'else' clause in a Python 'try' block execute?
A. When there is no exception
B. After the 'finally' block
C. When an exception occurs
D. Before the 'finally' block

Correct Answer: A. When there is no exception
What will 'print("ABCD".find("E"))' output?
A. 4
B. -1
C. 0
D. None

Correct Answer: B. -1
What is the result of '2 ** 3 ** 2'?
A. 64
B. 512
C. 81
D. 256

Correct Answer: B. 512

What is the purpose of 'slots' in Python classes?
A. To restrict the attributes a class can have
B. To allocate memory slots for objects
C. To define slot methods
D. To enhance performance by typing

Correct Answer: A. To restrict the attributes a class can have
What is the output of 'print("Python"[-100:])'?
A. Python
B. ""
C. Error
D. "Pyth"

Correct Answer: A. Python
What does the 'enumerate' function do in Python?
A. Enumerates all methods of an object
B. Returns an enumerate object
C. Converts a list into an enumerated tuple
D. Counts the number of elements in a sequence

Correct Answer: B. Returns an enumerate object
How do you achieve function overloading in Python?
A. Python does not support function overloading.
B. Using different numbers of parameters
C. Using default parameters
D. Both B and C

Correct Answer: D. Both B and C
What is the output of 'print("1,2,3".split(",", maxsplit=1))'?
A. ['1', '2', '3']
B. ['1', '2,3']
C. ['1,2', '3']
D. Error

Correct Answer: B. ['1', '2,3']
What is the correct way to check for the type of an object in Python?
A. isinstance(object, type)
B. type(object) == type
C. type(object) is type
D. Both A and B

Correct Answer: A. isinstance(object, type)

What is the output of 'print([1, 2, 3] + [4, 5, 6])'?
A. [1, 2, 3, 4, 5, 6]
B. [5, 7, 9]
C. Error
D. None

Correct Answer: A. [1, 2, 3, 4, 5, 6]
What is the result of 'isinstance(5, (int, float))'?
A. True
B. False
C. Error
D. None

Correct Answer: A. True
What is 'dunder' or 'magic' methods in Python?
A. Special methods like 'init' and 'str'
B. Methods that perform magic operations
C. Deprecated methods
D. Methods that are hidden and not callable

Correct Answer: A. Special methods like 'init' and 'str'

What will 'print([i for i in range(-1, -5, -1)])' output?
A. [-1, -2, -3, -4]
B. [-1, -2, -3, -4, -5]
C. [-5, -4, -3, -2, -1]
D. []

Correct Answer: A. [-1, -2, -3, -4]

How does 'frozenset' differ from 'set' in Python?
A. 'frozenset' is mutable, while 'set' is immutable.
B. 'frozenset' is immutable, while 'set' is mutable.
C. 'frozenset' allows duplicate elements, while 'set' does not.
D. There is no difference.

Correct Answer: B. 'frozenset' is immutable, while 'set' is mutable.

What is the purpose of the 'call' method in Python?
A. To call a method
B. To make an object callable like a function
C. To initialize a class

D. To call the superclass method

Correct Answer: B. To make an object callable like a function

What is the output of 'print([1, 2, 3] * 2)'?
A. [1, 2, 3, 1, 2, 3]
B. [2, 4, 6]
C. Error
D. [1, 2, 3]

Correct Answer: A. [1, 2, 3, 1, 2, 3]

What does the 'finally' block in a try-except structure ensure?
A. It runs regardless of whether an exception occurs.
B. It runs only if an exception occurs.
C. It runs before the 'except' block.
D. It finalizes the object being used.

Correct Answer: A. It runs regardless of whether an exception occurs.

What is the output of 'print((1, 2) < (1, 2, -1))'?
A. True
B. False
C. Error
D. None

Correct Answer: A. True

How does 'classmethod' differ from 'staticmethod'?
A. 'classmethod' passes the class as the first argument.
B. 'staticmethod' can access class attributes.
C. 'classmethod' cannot be overridden in subclasses.
D. 'staticmethod' is called with an object.

Correct Answer: A. 'classmethod' passes the class as the first argument.

What is the purpose of 'repr' method in Python?
A. To provide a formal string representation of an object
B. To return a readable representation of an object
C. To represent the private data of an object
D. To serialize an object to JSON

Correct Answer: A. To provide a formal string representation of an object

What is the output of the following code snippet?

python
Copy code
x = "foo"
y = 2
print("x" in x)
A. True
B. False
C. Error
D. None

Correct Answer: B. False
In Python, what does the else clause in a try-except block execute?
A. Always after the try block, regardless of exceptions.
B. Only if no exceptions were raised in the try block.
C. Only if an exception was caught in the except block.
D. It never executes.

Correct Answer: B. Only if no exceptions were raised in the try block.
What is the output of the following code?

python
Copy code
def make_multiplier_of(n):
    def multiplier(x):
        return x * n
    return multiplier

times3 = make_multiplier_of(3)
print(times3(5))
A. 15
B. 8
C. SyntaxError
D. None

Correct Answer: A. 15
Which of the following is true about Python lambda functions?
A. They can contain multiple expressions.
B. They return a function object.

C. They are used to create new syntax features.
D. They can have multiple return statements.

Correct Answer: B. They return a function object.
What is the use of the global keyword in Python?
A. It defines a global variable.
B. It imports a module globally.
C. It accesses a variable from the global scope inside a function.
D. It declares a variable to be thread-global.

Correct Answer: C. It accesses a variable from the global scope inside a function.
How does yield differ from return in Python?
A. yield exits the function, while return does not.
B. yield returns a value and pauses the function, return exits the function.
C. There is no difference; they are interchangeable.
D. yield is used in loops, while return is not.

Correct Answer: B. yield returns a value and pauses the function, return exits the function.
What does the @staticmethod decorator do in Python?
A. Makes a method static, so it doesn't receive the instance as the first argument.
B. Converts a method into a static function.
C. Optimizes the method for static code analysis.
D. Allows a method to be called on the class without an instance.

Correct Answer: A. Makes a method static, so it doesn't receive the instance as the first argument.
What is the purpose of the __call__ method in Python?
A. To call a method statically.
B. To initialize a newly created object.
C. To make an instance of a class callable.
D. To call the superclass's method.

Correct Answer: C. To make an instance of a class callable.
In Python, what is a metaclass?
A. A class that defines the structure and behavior of other classes.
B. A superclass from which many subclasses inherit.
C. A class used for meta-programming.
D. A class that can only be instantiated once.

Correct Answer: A. A class that defines the structure and behavior of other classes.
Which statement is true about Python's memory management?
A. Python uses automatic memory management with manual garbage collection.
B. Memory in Python is managed through manual allocation and deallocation.

C. Python's memory management includes a private heap containing all Python objects.
D. In Python, the programmer has full control over memory management.

Correct Answer: C. Python's memory management includes a private heap containing all Python objects.
What is the result of the expression isinstance("hello", str) in Python?
A. False
B. True
C. TypeError
D. None

Correct Answer: B. True
What is the purpose of the with statement in Python?
A. To create a temporary variable.
B. To ensure proper acquisition and release of resources.
C. To switch between different contexts.
D. To handle exceptions in a specific block of code.

Correct Answer: B. To ensure proper acquisition and release of resources.

What will be the output of the following code?

```
a = [1, 2, 3]
b = a
b.append(4)
print(a)
```

A. [1, 2, 3]
B. [1, 2, 3, 4]
C. [1, 2, 3, [4]]
D. TypeError

Correct Answer: B. [1, 2, 3, 4]

In Python, how do you create a generator?
A. Using a function with the generate keyword.
B. By calling a built-in generator function.
C. Using a function with the yield keyword.
D. By creating a class with a __next__ method.

Correct Answer: C. Using a function with the yield keyword.

What is the purpose of the __init__.py file in Python packages?

A. To initialize Python environments.
B. To declare a directory as a Python package.
C. To write initialization code for a package.
D. To configure package settings.

Correct Answer: B. To declare a directory as a Python package.

Which of the following is a correct way to create a named tuple in Python?
A. namedtuple('P', 'x y')
B. NamedTuple('P', ['x', 'y'])
C. namedtuple('P', ['x', 'y'])
D. NamedTuple('P', 'x y')

Correct Answer: C. namedtuple('P', ['x', 'y'])

How do you create a shallow copy of a list in Python?
A. new_list = list.copy()
B. new_list = copy(list)
C. new_list = list[:]
D. new_list = new(list)

Correct Answer: C. new_list = list[:]
Which of these is a valid way to create a generator in Python?
A. (x2 for x in range(10))
B. [x2 for x in range(10)]
C. {x2 for x in range(10)}
D. (x2, for x in range(10))

Correct Answer: A. (x**2 for x in range(10))
What is the output of the following code?

python
Copy code
x = "hello"
y = 15
print(x + y)
A. hello15
B. TypeError
C. 0
D. None

Correct Answer: B. TypeError

What does the @staticmethod decorator do?
A. Makes a method static, not requiring an instance.
B. Converts a function into a static method of a class.
C. Creates a new static class.
D. Optimizes a function for static analysis.

Correct Answer: A. Makes a method static, not requiring an instance.
In Python, which of these about abstract base classes (ABCs) is true?
A. They can be instantiated.
B. They allow the creation of objects.
C. They require subclasses to implement specific methods.
D. They are automatically generated by the Python interpreter.

Correct Answer: C. They require subclasses to implement specific methods.
What is the result of 'list(set([1, 2, 2, 3, 4, 4, 4]))'?
A. [1, 2, 3, 4, 4, 4]
B. [1, 2, 2, 3, 4]
C. [1, 2, 3, 4]
D. [4, 3, 2, 1]

Correct Answer: C. [1, 2, 3, 4]
Which statement about Python's list comprehensions is false?
A. They can include an if statement.
B. They can be nested.
C. They are more efficient than for-loops.
D. They can only create lists, not other data types.

Correct Answer: D. They can only create lists, not other data types.
In Python, what does the else block in a try-except statement do?
A. It runs if the try block raises an error.
B. It runs if the try block does not raise an error.
C. It always runs after the try block.
D. It replaces the finally block.

Correct Answer: B. It runs if the try block does not raise an error.
What is the use of the __call__ method in Python?
A. To call methods in parallel.
B. To make an instance of a class callable like a function.
C. To initialize a newly created object.
D. To call a function from another module.

Correct Answer: B. To make an instance of a class callable like a function.

How does yield differ from return in Python functions?
A. yield returns a value permanently; return does not.
B. yield pauses the function and returns a value; return exits the function.
C. There is no difference in Python 3.
D. yield can only be used inside loops.

Correct Answer: B. yield pauses the function and returns a value; return exits the function.
What is the output of the following code?

python
Copy code
```
x = True
y = False
z = False
if x or y and z:
   print("yes")
else:
   print("no")
```
A. yes
B. no
C. True
D. False

Correct Answer: A. yes
What is the purpose of the __slots__ attribute in Python classes?
A. To allocate space for dynamically added attributes.
B. To lock the set of attributes a class can have.
C. To define class-level variables.
D. To optimize memory usage by restricting instance attributes.

Correct Answer: D. To optimize memory usage by restricting instance attributes.
In Python, what is the difference between deepcopy and copy?
A. deepcopy does a shallow copy; copy does a deep copy.
B. deepcopy copies the object and its inner objects; copy copies the object only.
C. No difference, they are synonyms.
D. deepcopy is for mutable objects; copy is for immutable objects.

Correct Answer: B. deepcopy copies the object and its inner objects; copy copies the object only.
Which of these about Python's with statement is true?
A. It is used for error handling.
B. It is used to ensure that clean-up code is executed.
C. It is equivalent to using a try-finally block.

D. It is only used for opening files.

Correct Answer: B. It is used to ensure that clean-up code is executed.
What is a metaclass in Python?
A. A class of methods for advanced programming.
B. A class that defines the behavior of other classes.
C. A class that cannot be instantiated.
D. A superclass of all classes.

Correct Answer: B. A class that defines the behavior of other classes.
What does the globals() function do in Python?
A. Returns a list of all global variables.
B. Converts local variables to global variables.
C. Returns a dictionary representing the current global symbol table.
D. Clears all global variables.

Correct Answer: C. Returns a dictionary representing the current global symbol table.
How can you achieve method overloading in Python?
A. Python does not support method overloading.
B. By using default arguments in methods.
C. By declaring the methods multiple times with different signatures.
D. By using the @overload decorator.

Correct Answer: B. By using default arguments in methods.
Which of the following is true about Python's __name__ attribute?
A. It is a unique identifier for each object.
B. It holds the name of the module.
C. It is used to define private variables.
D. It represents the class name of an object.

Correct Answer: B. It holds the name of the module.
What is MRO in Python?
A. Memory Read-Out
B. Module Runtime Order
C. Method Resolution Order
D. Multiple Recursion Optimization

Correct Answer: C. Method Resolution Order
How do you dynamically create attributes in Python classes?
A. Using the __setattr__ method.
B. By assigning values to non-existent class attributes.
C. Using the setattr() function.

D. Both A and C.

Correct Answer: D. Both A and C.
What is the purpose of the __iter__ and __next__ methods in Python?
A. To implement iterators.
B. To loop through sequences.
C. To generate random numbers.
D. To handle exceptions.

Correct Answer: A. To implement iterators.
What is the output of the following code?

python
Copy code
print(type(lambda x: x))
A. <class 'function'>
B. <class 'lambda'>
C. <class 'method'>
D. <class 'callable'>

Correct Answer: A. <class 'function'>
In Python, what is a context manager?
A. A class that manages static and class methods.
B. An object that properly manages resources.
C. A tool for debugging and profiling.
D. A module that handles exceptions.

Correct Answer: B. An object that properly manages resources.
What is the correct way to create a custom exception in Python?
A. By creating a new instance of the Exception class.
B. By subclassing the Exception class.
C. By using the raise keyword with a string message.
D. By declaring a function that calls exit().

Correct Answer: B. By subclassing the Exception class.
In Python, how does a class property differ from an attribute?
A. A property uses getter and setter methods; an attribute does not.
B. A property is immutable; an attribute is mutable.
C. A property is global; an attribute is local to an instance.
D. There is no difference.

Correct Answer: A. A property uses getter and setter methods; an attribute does not.

What is the output of the following code?

python
Copy code
mylist = ['a', 'b', 'c', 'd']
print("".join(mylist[-1:-3:-1]))
A. cd
B. dc
C. ab
D. Empty String

Correct Answer: B. dc
What is the significance of the __pycache__ folder in Python?
A. It contains the compiled bytecode.
B. It stores Python package configurations.
C. It is used for virtual environment settings.
D. It contains cache files to speed up program execution.

Correct Answer: A. It contains the compiled bytecode.
In Python, what does the enumerate function do?
A. It counts the number of elements in an iterable.
B. It creates a tuple containing a count and the values obtained from iterating over an iterable.
C. It sorts an iterable.
D. It applies a function to every item of an iterable.

Correct Answer: B. It creates a tuple containing a count and the values obtained from iterating over an iterable.
How is a static method different from a class method?
A. A static method cannot access or modify class state.
B. A class method takes a class as its first argument.
C. A static method is called on an instance.
D. Both A and B are correct.

Correct Answer: D. Both A and B are correct.
What is the output of the following code?

python
Copy code
def test():
    try:
        return 'from try'
    finally:

```
    return 'from finally'
print(test())
```

A. from try
B. from finally
C. Both 'from try' and 'from finally'
D. Error

Correct Answer: B. from finally
Which of these is a valid way to do error handling in Python?
A. try...except...else
B. try...catch
C. try...except...finally
D. Both A and C are correct.

Correct Answer: D. Both A and C are correct.
In Python, what is the difference between __new__ and __init__?
A. __new__ creates the instance, __init__ initializes it.
B. __new__ initializes the instance, __init__ creates it.
C. There is no difference.
D. __new__ is a static method, __init__ is not.

Correct Answer: A. __new__ creates the instance, __init__ initializes it.
How does Python handle private variables in classes?
A. By using the private keyword.
B. Python has no support for private variables.
C. By name mangling with double underscores.
D. By declaring them outside the class.

Correct Answer: C. By name mangling with double underscores.
What is the output of the following code?

python
Copy code

```
x = ['ab', 'cd']
for i in x:
   x.append(i.upper())
print(x)
```

A. ['AB', 'CD']
B. ['ab', 'cd', 'AB', 'CD']
C. ['ab', 'cd', 'ab', 'cd']
D. Infinite loop

Correct Answer: D. Infinite loop

In Python, what does the zip function do?

A. It compresses files into a zip archive.

B. It iterates over two or more sequences simultaneously.

C. It concatenates lists.

D. It splits a string into a list.

Correct Answer: B. It iterates over two or more sequences simultaneously.

What is the use of the __repr__ method in Python?

A. To return the string representation of an object for debugging.

B. To represent an object as a string for user output.

C. To define how an object is printed.

D. To return a readable string representation of an object.

Correct Answer: A. To return the string representation of an object for debugging.

What does the functools.wraps decorator do in Python?

A. It wraps a function with another function.

B. It helps to preserve the metadata of the original function in a decorator.

C. It combines multiple functions into a single one.

D. It adds extra functionality to a function.

Correct Answer: B. It helps to preserve the metadata of the original function in a decorator.