

Q1

1. it is a floor division operator...

No

floor division removes and decimels, and shows an integer

2. The output of run the following call `print((1.1 + 2.2) == 3.3)` is True

No

programming languages are not that accurate with numbers, there should be an extra number at the end, though there is a workaround using libraries that are specialized with number and float precision

3. The following statement

```
'''
```

```
sum = 1 + 2 + 3 + 4 + \
    5 + 6
```

```
'''
```

is equivalent to? (Yes)

```
'''
```

```
sum = 1 + 2 + 3 + 4 + 5 + 6
```

```
'''
```

and is equivalent to? (No, Python is sensitive to indentations)

```
'''
```

```
sum = 1 + 2 + 3 + 4 +
    5 + 6
```

```
'''
```

4. The "and" in python does an OR logical operation?

No

similar to && in other languages

5. You can use `eval` function to...

No

the eval function evaluate a string as a Python code, and return the result as a string

6. The `in` operator is used to check for a value exists...

Yes

7. The operator precedence in Python is different than other languages like C++

Yes

8. The `is` operator in Python checks if two object has the same id

Yes

9. The `not` operator in Python performs a logical negation

Yes

10. To generate a number you need to do this

```
'''
import random
random.random()
'''
```

This return a floating point number in the range of [0, 1]

Yes

11. In order to convert a number into a string use the `str()` function...

Yes

12. Importing everything with the asterisk(*) is good, but can lead to duplicate definitions

Yes

13. In Python the `from ... import ...` statement is used to import specific parts...

Yes

14. In Python a module is the way to structure a program...

Yes

Q2

1. What is the value of x if `x = int(44.55 + 2/2)`

44

2. What is the value of the following expression `2 + 4.00, 2 ** 4.0`

6.0, 16.0

3. Which of the following is truncation operator

1. /
2. %
3. //

3

4. What are the values of the following expressions

```
"""
```

```
x = 2 ** ( 3 ** 2 )
```

```
y = ( 2 ** 3 ) ** 2
```

```
z = 2 ** 3 ** 2
```

```
"""
```

1. 512 64 512
2. 64 512 512
3. 512 51 64

1

5. What is the value of the following expression `8 / 4 / 2, 8 / (4 / 2)`

`(1.0, 4.0)`

6. What is the value of the following expression `float(22 // 3 + 3 / 3)`

`8.0`

7. Which of the following operators has its associativity from right to left?

1. `+`
2. `//`
3. `%`
4. `**`

4

8. Which operator has higher precedence in the following list

1. `%`
2. `&`
3. `**`
4. `>`

1

9. What is the output of the following code?

```
'''  
var = "James" * 2 * 3  
print(var)  
'''
```

JamesJamesJamesJamesJamesJames

10. The value of expression `4 + 3 % 5`

7

11. Display the sum of 5 + 10 using two variables x and y

```
'''
x = 5
y = 10
print( x ... y )
'''

+
```

12. multiply 10 with 5 and print the result

```
'''
print( 10 ... 5 )
'''

*
```

13. Divide 10 by 2 and print the result

```
'''
print( 10 ... 2 )
'''

/
```

14. Use the correct membership operator to check if "apple" is present in the fruits

```
'''
fruits = ["apple", "banana"]
if "apple" ... in fruits:
    print("yes, apple is a fruits") # no way
'''

in
```

15. The output of the following program is?

```
'''
x = 5
y = 0
result = x / y
```

```
print(result)
'''
    Error: division by zero
'''
```

16. Use the correct comparison operator to check if 5 is **not equal** to 10

```
'''
if 5 ... 10:
    print("5 and 10 is not equal") # I think it is
'''

!=, is not

though is not will get you a SyntaxWarning, because it
weird to use it with ints literals
```

17. Use the correct logical operator to check if at least one of two statement is True

```
'''
if 5 == 10 ... 4 == 4:
    print("At least one of the statement is true")
'''

or
```

18. What will be the output of the following code?

```
'''
x = 10
y = 5
print(x > y)
'''

True
```

19. Which of the following is used to check if two objects refer to the same memory location

1. is
2. ==
3. equals()
4. same()

is

20. What is the output of the following code?

```
'''  
valueOne = 5 ** 2  
valueTwo = 5 ** 3  
  
print(valueOne, end='  ')  
print(valueTwo)  
'''  
  
25 125
```

21. Evaluate the expression given below if A = 16 and B = 15

```
'''  
print(A % B // A)  
'''  
  
0
```

22. What is the output of the following code?

```
'''  
x = 36 / 4 * ( 3 + 2 ) * 4 + 2  
print(x)  
'''  
  
182.0
```

23. What is the output of the following code?

```
'''  
print( 2 * 3 ** 3 * 4 )  
'''  
  
864
```

24. What is the output of the following code?

```
'''  
x = 6  
y = 2
```

```
print( x ** y, end = '    ' )  
print( x // y )  
'''
```

36.3

25. What is the output of the following code?

```
'''  
print( 2 % 6 )  
'''
```

2

26. What is the average value of the code that is executed below

```
'''  
grade1 = 80  
grade2 = 90  
  
average = ( grade1 + grade2 ) / 2  
'''
```

85.0

27. In Python we do not specify types

28. What is the output of

```
'''  
print( 2 ** 3 ** 2 )  
'''
```

512

29. Which of the following operators has the highest precedence?

1. not

- 2. &
- 3. *
- 4. +

3

30. What is the output of the following assignment operator?

```
'''  
y = 10  
x = y += 2  
  
print(x)  
'''
```

SyntaxError

31. What is the output of the following code?

```
'''  
x = 100  
y = 50  
  
print(x and y)  
'''
```

50

32. What is the value of the following Python expression

```
'''  
print(36 / 4)  
'''
```

9.0

33. What is the output of the expression

```
'''
```

```
print(-18 // 4)
'''
    -5
'''
```

34. What is the output of the following code?

```
'''
print(10 - 4 * 2 )
'''
    2
'''
```

35. What is the output of the following math function?

```
'''
import math
print(math.ceil(252.4))
print(math.floor(252.4))
'''
    253
    252
'''
```

36. What is the correct syntax of printing all variables and function of a module

```
'''
import mymodule

print(...)
'''
    dir (mymodule)
'''
```

37. What is the correct syntax of importing only the person1 dictionary of the mymodule module?

```
'''
... mymodule .... person1
'''

    from mymodule import person1
'''
```

38. Which of the following properly expresses the precedence of the operators....

```
'''
```

```
5 * > 10 and 4 + 6 == 11
```

```
'''
```

```
((5 * 3) > 10) and ((4 + 6) == 11)
```

39. The output of the following python statement

```
'''
```

```
print(chr(ord('A')))
```

```
'''
```

A

40. What will be displayed by

```
'''
```

```
print(ord('b') - ord('a'))
```

```
'''
```

1

41. What is the output of

```
'''
```

```
print(abs(-45.300))
```

```
'''
```

45.3

42. What is the output of the following isinstance() function

```
'''
```

```
from numbers import Number
```

```
from decimal import Decimal
```

```
from fractions import Fraction
```

```
print(isinstance(2.0, Number))
```

```
print(isinstance(Decimal('2.0'), Number))
```

```
print(isinstance(Fraction(2, 1), Number))
```

```
print(isinstance("2", Number))
'''
```

```
True False True True
```

43. What is the correct syntax to import a module named "mymodule"?

```
'''
... mymodule
'''
```

```
import
```

44. If you want to refer to a module by another name ...

```
'''
import mymodule ... mx
'''
```

```
as
```

45. In Python, to import a specific part...

```
from math import pi
```

Q3

Evaluate the following expressions in Python

1. $25 / 3$

```
8.333
```

2. $20 - 12 / 4 * 24$

```
14.0
```

$$3. 32 \% 7$$

$$4$$

$$4. 3 - 5 \% 7$$

$$-2$$

$$5. 18.0 / 4$$

$$4.5$$

$$6. 28 - 5 / 2.0$$

$$25.5$$

$$7. 17 + 5 \% 2 - 3$$

$$15$$

$$8. 15.0 + 3.0 * 2.0 / 5.0$$

$$16.2$$

Q4

Write equivalent compound statements of the following simple statements if possible

$$1. x = 2 * x$$

$$x *= 2$$

$$2. x = x + y - 2$$

$$x += y - 2$$

$$3. \text{sum} = \text{sum} + \text{num}$$

$$\text{sum} += \text{num}$$

$$4. z = z * x + 2 * z$$

$$5. y = y (x + 5)$$

$$y \neq x + 5$$

Q5

Write the following compound statements as equivalent simple statements

1. $x += 5 - z$

$$x = x + 5 - z$$

2. $y *= 2 * x + 5 - z$

$$y = y * 2 * x + 5 - z$$

3. $w += 2 * z + 4$

$$w = w + 2 * z + 4$$

4. $x -= z + y - t$

$$x = x - z + y - t$$

5. $\text{sum} += \text{num}$

$$\text{sum} = \text{sum} + \text{num}$$

Q6

Which of the following assignments are valid or not and why?

1. $\text{num } 1 = 35$

Valid

2. $\text{num } 2 += 4$

Valid

3. $\text{newNum} = \text{num1} - \text{num2}$

Valid

4. $\text{num1} = 5; \text{num2} = 2 + \text{num1}; \text{num1} = \text{num2} / 3$

Valid

5. $\text{num1} * \text{num2} = \text{newNum}$

not valid

it's reversed

6. $x = 12 * \text{num1} - 15.3$

Valid

7. $\text{num1} * 2 = \text{newNum} + \text{num2}$

not valid

you can't assign a result

8. $x / y = x * y$

not valid

you can't assign a result

9. $\text{num2} = \text{num1} \% 2.0$

Valid

10. $\text{newNum} = \text{static_cast<int>} \% 5$

not valid

who let c++ in?

11. $x = x + y - 5$

Valid

12. $\text{newNum} = \text{num1} + \text{int}(4.6/2)$

Valid

Q7

Identify errors in the following Python code snapshot and then correct them

1.

```
'''
x = 10
y = 5
result = x - y
print("The result is: " + result)
'''

wrong
    wrap result with str

    str(result)
```

2.

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

wrong
    wrap y with int

    result = x + int(y)
```

3.

```
'''
num = 10
print("The sqaure root of num is: " + math.sqrt(num))
'''

wrong
    wrap the sqrt with str

    print("The sqaure root of num is: " +
str(math.sqrt(num)))
```


Q8

What is the output of the following program

1.

///

• • • •

///

5.0
3.1415...
144.59155
1.04..
0.90..
0.877..
0.234..
24

2.

///

• • • •

///

```
0 → 5 random int
0 → 1 random float
0 → 100 random float
random item from the list
```

3.

///

.....

///

Format the output of ...

```
Current date and time: 2025-04-14 06:00:46.083582
Formatted date and time: 2025-04-14 06:01:48
```

Display the time in 12h..

```
Formatted date and time: 2025-04-14 13:01:48
```

```
-----  
Customize the date and time...  
-----
```

```
Formatted date and time: Monday, April 14 2025 06:04:48 AM
```

```
Formatted date and time: Mon, Apr 14 25 06:05:31 AM
```

4.

```
'''
```

```
....
```

```
'''
```

```
d1 = 14/04/2025  
d2 = April 14 2025  
d3 = 04/14/25  
d4 = Apr-14-2025
```

Q9

Do these programming exercises with Python language

1. Write a program to perform different arithmetic operations on numbers in Python

```
'''
```

```
def arithmetic_ops(a, b):  
    print("Addition:", a + b)  
    print("Subtraction:", a - b)  
    print("Multiplication:", a * b)  
    if b != 0:  
        print("Division:", a / b)  
        print("Modulus:", a % b)  
        print("Floor Division:", a // b)  
    else:  
        print("Division: Error - Division by zero")  
    print("Exponentiation:", a ** b)  
'''
```

2. Write a program to concatenate and print a string and accessing sub-string from given string

```
'''
str1 = "Hello, "
str2 = "World!"
concat_str = str1 + str2
print("Concatenated String:", concat_str)

substring = concat_str[7:12]
print("Substring (extracted 'World'):", substring)
'''
```

3. try a print the day, month, year in the form "Today is 2/2/2016"

4. Make a python program to find out what version of Python you are using

```
'''
import sys
print("Python version:", sys.version)
'''
```

5. write a program to get three value from the user and compute the average

```
'''
num1 = float(input("Enter first number: "))
num2 = float(input("Enter second number: "))
num3 = float(input("Enter third number: "))

average = (num1 + num2 + num3) / 3
print("The average is:", average)
'''
```

6. write a program that takes 2 numbers as command line arguments and make a simple calculator

```
'''
```

```

import sys

if len(sys.argv) != 3:
    print("Usage: python calculator.py <num1> <num2>")
    sys.exit(1)

try:
    num1 = float(sys.argv[1])
    num2 = float(sys.argv[2])
except ValueError:
    print("Please provide valid numbers.")
    sys.exit(1)

print("Addition:", num1 + num2)
print("Subtraction:", num1 - num2)
print("Multiplication:", num1 * num2)
if num2 != 0:
    print("Division:", num1 / num2)
else:
    print("Division: Error - Division by zero")

```

7. write a python program to define a module and import specific function in that module to another program

```

module.py
'''
def hey(name):
    return f"Hello, {name}!"
'''

```

```

main.py
'''
from module import hey

name = input("Enter your name: ")
print(hey(name))
'''

```

8. import the math module and call sin function

```
'''
```

```
import math
```

```
angle_radians = math.pi / 2
```

```
print("The sine of 90 degrees is:", math.sin(angle_radians))
```

```
'''
```

9. write a python script to print the current date in the following format "Sun May 29 02:26:23 IST 2017"

```
'''
```

```
import datetime
```

```
import time
```

```
tz = datetime.timezone(datetime.timedelta(hours=5, minutes=30))
```

```
now = datetime.datetime.now(tz)
```

```
formatted_date = now.strftime("%a %b %d %H:%M:%S %Z %Y")
```

```
print("Current date and time with IST timezone:", formatted_date)
```

```
'''
```

10. write a python program to add some days to your present date and print the date added

```
'''
```

```
import datetime
```

```
days_to_add = int(input("Enter number of days to add: "))
```

```
today = datetime.date.today()
```

```
future_date = today + datetime.timedelta(days=days_to_add)
```

```
print("Date after adding", days_to_add, "days:", future_date)
```

```
'''
```