



ECC 811 – SOFTWARE ENGINEERING
PYTHON FUNDAMENTALS – TEST YOUR KNOWLEDGE

1. What is the output of `print(type(5.0))`?

- A. <class 'int'>
- B. <class 'float'>
- C. <class 'decimal'>
- D. <class 'number'>

Answer: B

Explanation: Numbers with decimal points are float type in Python.

2. Which operator performs exponentiation?

- A. ^
- B. **
- C. //
- D. %%

Answer: B

*Explanation: ** is the exponentiation operator (e.g., $3^{**}2 = 9$).*

3. What does `print("Hello" + "World")` output?

- A. Hello World
- B. Hello+World
- C. HelloWorld
- D. Error

Answer: C

Explanation: + concatenates strings without adding spaces.

4. How do you start a single-line comment?

- A. //
- B. /*
- C. #
- D. –

Answer: C

Explanation: Python uses # for single-line comments.

5. Which list method adds an item to the end?

- A. .insert()

B. .append()

C. .add()

D. .push()

Answer: B

Explanation: append() adds items to the end of a list.

6. What is the result of bool("")?

A. True

B. False

C. None

D. Error

Answer: B

Explanation: Empty strings are falsy in Python.

7. Which creates a tuple?

A. {1, 2, 3}

B. [1, 2, 3]

C. (1, 2, 3)

D. (1)

Answer: C

Explanation: Tuples use parentheses. (1) is not a tuple (it's an int).

8. What does range(3) generate?

A. [0, 1, 2]

B. [1, 2, 3]

C. [3]

D. [0, 1, 2, 3]

Answer: A

Explanation: range(n) starts at 0 and stops before n.

9. How do you access "apple" in fruits = ["apple", "banana"]?

A. fruits[0]

B. fruits[1]

C. fruits.apple

D. fruits(0)

Answer: A

Explanation: List indices start at 0.

10. What is 3 == "3"?

A. True

B. False

- C. Error
- D. None

Answer: B

Explanation: Different types (int vs string) are not equal.

11. Which adds a key-value pair to a dictionary?

- A. dict.insert(key, value)
- B. dict[key] = value
- C. dict.add(key, value)
- D. dict.append(key, value)

Answer: B

Explanation: Dictionaries use dict[key] = value for assignment.

12. What does "hello".upper() return?

- A. "HELLO"
- B. "Hello"
- C. "hello"
- D. Error

Answer: A

Explanation: .upper() converts strings to uppercase.

13. Which is NOT a valid variable name?

- A. _my_var
- B. 2nd_var
- C. var_name
- D. VarName

Answer: B

Explanation: Variable names cannot start with numbers.

14. What is the output of print(10 / 3)?

- A. 3
- B. 3.333...
- C. 3.0
- D. 3.33

Answer: B

Explanation: Division (/) always returns a float.

15. Which checks if "cat" is in animals = ["dog", "cat"]?

- A. "cat" in animals
- B. animals.contains("cat")

- C. `animals.find("cat")`
- D. `"cat" == animals`

Answer: A

Explanation: `in` checks membership in sequences.

16. What does `"ab" * 3` produce?

- A. `"ababab"`
- B. `"ab3"`
- C. `"aabbcc"`
- D. Error

Answer: A

Explanation: Strings can be multiplied by integers.

17. Which imports the `math` module?

- A. `import math`
- B. `include math`
- C. `require math`
- D. `from math import *`

Answer: A

Explanation: Standard import syntax is `import module_name`.

18. How do you start a `while` loop?

- A. `while condition:`
- B. `while (condition)`
- C. `while: condition`
- D. `while condition then`

Answer: A

Explanation: Python uses `while condition:` with a colon.

19. What is `not (True and False)`?

- A. `True`
- B. `False`
- C. `None`
- D. Error

Answer: A

Explanation: `True and False = False`, and `not False = True`.

20. Which reads user input?

- A. `input()`
- B. `read()`

C. `get_input()`

D. `scan()`

Answer: A

Explanation: `input()` reads input as a string.

21. What does `"hello"[1:4]` return?

A. `"ell"`

B. `"hel"`

C. `"llo"`

D. `"lo"`

Answer: A

Explanation: Slicing includes start index, excludes end index.

22. Which creates a set?

A. `{1, 2, 3}`

B. `[1, 2, 3]`

C. `(1, 2, 3)`

D. `{'key': 'value'}`

Answer: A

Explanation: Sets use curly braces with comma-separated values.

23. What is `len([1, [2, 3]])`?

A. 1

B. 2

C. 3

D. Error

Answer: B

Explanation: The outer list has two elements: 1 and `[2, 3]`.

24. How do you define a function?

A. `function my_func():`

B. `def my_func():`

C. `define my_func():`

D. `func my_func():`

Answer: B

Explanation: Functions are defined with `def`.

25. What does `int("3.14")` do?

A. Returns 3

B. Returns 3.14

C. Returns 3 (rounded)

D. Raises ValueError

Answer: D

Explanation: `int()` can't convert float-formatted strings directly.

26. Which is a valid if statement?

A. `if x == 5: print("Five")`

B. `if x = 5: print("Five")`

C. `if (x == 5) then print("Five")`

D. `if x == 5 print("Five")`

Answer: A

Explanation: Requires colon and uses `==` for comparison.

27. What is `print(3 * "a")`?

A. "3a"

B. "aaa"

C. "a*3"

D. Error

Answer: B

Explanation: Strings can be multiplied by integers.

28. How do you open a file for reading?

A. `open("file.txt", "r")`

B. `open("file.txt", read)`

C. `open("file.txt", "read")`

D. `read("file.txt")`

Answer: A

Explanation: "r" is the mode for reading.

29. What does `"text".split()` return by default?

A. `["t", "e", "x", "t"]`

B. `["text"]`

C. `["t", "x", "t"]`

D. Error

Answer: B

Explanation: With no arguments, `split()` splits on whitespace.

30. Which removes duplicates from a list?

A. `list.remove_duplicates()`

B. `set(list)`

C. `list.unique()`

D. `unique(list)`

Answer: B

Explanation: Converting to a set removes duplicates (sets can't have duplicates).