

Self-Check 3

Answer the following questions to check your understanding of your material. Expect the same kind of questions to show up on your tests.

1. Definitions and Short Answers

1. When you call the function `ord('A')` it returns 65. What does it mean?
A's ASCII code is 65
2. What is the value of `chr(70)`? (based on the knowledge of the previous question)
F
3. What is the difference between **ASCII** character set and **Unicode**? If a character is in ASCII, is it also in Unicode? Are there characters in Unicode that are not in ASCII?
ASCII 只有 128 個字元 是 Unicode 的子集
ASCII 是美語為主 主要符號為英文及數字 還有一些控制字元(NUL、BS、TAB...)
Unicode 是萬國碼 包含像 '一'、'勺' 這種字元都是 ASCII 沒有的字元
4. How is **newline** (also known as a **line feed**) represented as a string literal? In other words, how do you print a newline?
'\n' => move cursor to beginning of next line
5. What is a **carriage return**? What is its string literal, and what effect does it have when printed?
'\r' => move cursor to beginning of this line
6. From the command line, what keys do you type to **kill** a running Python program?
Ctrl-C
7. Give an example of a **string literal** for McDonald's
"McDonald's" #因字串裡面有單引號，故不用單引號括起來
8. Give an example of an **integer literal**
12345
9. Give an example of a **floating point literal**
3.14159265359
10. What is the difference between `print(hello)` and `print("hello")`?
前者為 print 一個 名為 hello 的變數 的值
後者為 print 一個 string literal
11. What is a **numeral**? What is the difference between a numeral and a **number**?
Three concepts
 - a. number : the numeric quantity
 - b. numeral : a (general) notation for numbers ex: 一二三、I II III
 - c. literal : a (Python) notation for numbers

12. What is the **value** of the integer literal `0b101`? Express your answer in base-10 or in English.

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13. What is the **octal literal** for the integer value 10?

0o12

14. What is the **value** of the integer literal `0x12`? Express your answer in base-10 or in English.

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15. What is the return **value** of

○ `int('20')`

20

○ `int('0x20')`

ValueError: invalid literal for int() with base 10:
'0x20'

○ `oct(16)`

0o20

○ `bin(16)`

0b10000

16. What is the value of

○ `0b0101 & 0b1100`

4 -> 0b0100

○ `0b0101 | 0b1100`

13 -> 0b1101

○ `0b0101 ^ 0b1100`

9 -> 0b1001

○ `~0b0011`

-4 -> -0b100

○ `0b1011 << 2`

44 -> 0b101100

○ `0b1011 >> 2`

2 -> 0b10

write your answers as binary literals

17. What are two possible values of the `bool` class? True 、 False

18. What is the value of

○ `True and False`

False

○ `True or False`

True

○ `True and True`

True

○ `True or True`

True

○ `False and False`

False

- False or False

False

19. What is the value of

- bool(20) True
- bool(0) False
- bool(None) False
- bool([]) False
- bool([]) False
- bool(0.0) False
- bool('0') True
- bool('hello') True
- bool('zero') True
- bool('') False
- bool(' ') True
- bool("") False
- bool('''''') False
- bool('""""') False
- bool(''''') True
- bool('""') True

20. What is the value of

- 20 or False 20
- 20 and False False
- False and 20 False
- False or 20 20
- [] or 20 20
- [] and 20 20
- 20 or [] 20
- 20 and [] []
- 30 or 20 30
- 20 or 30 20

21. Assume x = 3 and y = 2, what is the value of

- x == 3 and y > 2 False
- x <= 3 and y >= 2 True
- x != 3 or y >= 2 True
- x != 3 and y == 2 False
- x >= 3 >= y > 2 False
- x >= 3 > y >= 2 True
- not (x != 3) and not (y < 2) True

22. What is the value of

- "hello" > "Hello" True
- 'hello' > 'world' False

- `'hello' == 'HELLO'` `False`
- `'hello' == 'he11o'` `False`
- `'2000' == '2000'` `False`
- `'Abacus' < 'abacus'` `True`
- `'about' < 'abnormal'` `False`
- `'I' == '|'` `False`
- `'Z00' != '200'` `True`
- `'uber' == 'über'` `False`
- `'naive' == 'naïve'` `False`
- `'Dijkstra' == 'Dijkstra'` `False`

23. What is the meaning of **lexicographical order**?

"dictionary order", but case sensitive

"<'A'<'AA'<'AB'

從最左邊的字元開始比,如果一樣就比下一個字元來排序

24. What is the **data type** of `2+3j`? What is the meaning of `3j`?

`import cmath`

`type(2+3j)`

`<class 'complex'>`

`3j` means `3i` ($3 * \sqrt{-1}$)