

**CSCI 1470 CS 1**  
**Fall 2025**  
**Mid-Term Examination**

**Last Name:** \_\_\_\_\_ **First Name:** \_\_\_\_\_ **Student Id:** \_\_\_\_\_

**Number:** \_\_\_\_\_

Time allowed: *1 hour 40 minutes*. Total score: 100 points. *Closed* book examination. *Two letter-size information sheets (both sides) prepared by yourself are allowed*. This question paper is printed in *both sides*.

Answer all questions. Turn in everything: question and answer papers, information sheet and sketch papers. They will be stapled together.

[Q1] (24%) Multiple Choices. Please circle a choice as your answer. Alternatively, you can write your choice clearly after the question.

[1] In an instruction like:  $z = x + y$ , the symbols  $x$ ,  $y$ , and  $z$  are examples of \_\_\_\_\_.

- A. output
- B. visibles
- C. variables
- D. instructions

[2] Which function converts a string  $s$  to an integer?

- A. `int(s)`
- B. `integer(s)`
- C. `string_to_int(s)`
- D. `convert(s, int)`

[3] Which of the following names is an invalid variable name in Python?

- A. `node_count`
- B. `nodeCount`
- C. `_node_count`
- D. `1_node_count`

[4] What is the output of the following code?

```
a = 3
b = 1
a, b = b, a
print(a, b)
```

- A. 3 1
- B. 1 3
- C. 1 1
- D. 3 3

[5] According to Python's precedence rules, which of the following operators has the highest precedence?

- A. subtraction -
- B. unary -
- C. \*
- D. +

[6] Which of the followings is not an expression in Python?

- A. len('hello')
- B. a < b < c
- C. a = 123
- D. 'hello' + 'world'

[7] Which of the following expressions evaluates to False?

- A. True or False
- B. not True
- C. 5 == 5
- D. False or None

[8] What is the result of `type('hello')` in Python?

- A. <class 'int'>
- B. <class 'str'>
- C. <class 'bool'>
- D. <class 'NoneType'>

[9] What is the data type of the value `[1, 2, 3]` in Python?

- A. tuple
- B. set
- C. int
- D. list

[10] What will be the output of executing the following code?

```
my_list = [1, 2, 3, 4, 5]
print(my_list[2])
```

- A. 2
- B. 3
- C. 2 3 4 5
- D. 1 2

[11] What are the contents of `names_list` after the following code is executed?

```
names_list = ["one", "two", "three"]
digits_list = ["1", "2", "3"]
names_list = digits_list + names_list
```

- A. ["1one", "2two", "3three"]
- B. ["two", "four", "six"]
- C. ["one", "two", "three", "1", "2", "3"]
- D. ["1", "2", "3", "one", "two", "three"]

[12] What is returned by evaluating the expression `[1, 2, 3, 4, 5][2:]` in Python?

- A. 2
- B. 3
- C. [3,4,5]
- D. [1,2]

[13] How many times will the `print("Hello")` statement be executed in the following code?

```
x= -1
while x < 5:
    print("Hello")
    x += 1
```

- A. 4
- B. 5
- C. 6
- D. forever

[14] Which of the following is an iterable object in Python?

- A. String
- B. Float
- C. Integer
- D. Boolean

[15] What will be output by executing the following Python code?

```
i = 0
while i < 6:
    i += 1
    if i == 2:
        continue
    if i == 4:
        break
    print(i, end = ' ')
```

- A. 1 3
- B. 0 1
- C. 0 1 3
- D. 1 3 4

[16] Which statement about Python is incorrect?

- A. Python is an object-oriented programming language.
- B. Python is dynamically typed.
- C. Python is weakly typed.
- D. Python is an interpreted language.

[Q2] (15%) True or False (Circle one choice, or write either True or False)

[a] [ T F ] Null is a predefined value in Python.

[b] [ T F ] In Python, the data type int is immutable.

[c] [ T F ] In Python, TypeError is an example of runtime error.

[d] [ T F ] The following statements can be executed successfully in Python.

```
i = 1
i = 'hello'
```

[e] [ T F ] In Python, an expression is always executed to a value.

[f] [ T F ] In Python, two double quotes (") can be used to define a multi-lined string.

(g) [ T F ] A python module xyz is usually defined as a python file, xyz.py.

(h) [ T F ] The turtle module is a built-in module in Python.

(i) [ T F ] The expression [10, 20, 30][1] in Python is evaluated to 10.

(j) [ T F ] The symbol '=' is the equality comparison operator in Python.

[Q3] (14%) Conditional Statements

[a] Rewrite the following nested if statement by using if-elif-else statement.

```
if score >= 90:
    grade = "A"
else:
    if score >= 80:
        grade = "B"
    else:
        if score >= 70:
            grade = "C"
        else:
            if score >= 60:
                grade = "D"
            else:
                grade = "F"
```

[b] Rewrite the following nested if statement by using match-case statement.

```
def get_interaction_type_if(feature_A, feature_B):  
    if feature_A:  
        if feature_B == "high":  
            return "Strong Positive Interaction"  
        elif feature_B == "medium":  
            return "Moderate Positive Interaction"  
        else:  
            return "Weak Positive Interaction"  
    else:  
        if feature_B == "high":  
            return "Strong Negative Interaction"  
        elif feature_B == "medium":  
            return "Moderate Negative Interaction"  
        else:  
            return "Weak Negative Interaction"
```

[Q4] (15%) Show the results of executing the following Python expressions. Assume that the following Python statements have already been executed.

```
a = 10
b = 20
c = 2
d = 'hello'
```

[a]     `a - b * 3`

[b]     `a < b and b < 30`

[c]     `2 * b ** c`

[d]     `d.upper()`

[e]     `c ** 3 ** 2`

[f]     `a < b < 30`

[g]     `a > b or b < 30`

[h]     `a > b and b > 30 or b < 20`

[i]     `a > b and (b > 30 or b < 20)`

[j]     `not (a > b)`

[Q5] (8%)

[1] Convert the decimal number 177 to hexadecimal and binary numbers.

Hexadecimal:

Binary:

[2] Convert the hexadecimal number A9 to decimal and binary numbers.

Decimal:

Binary:

[Q6] (20%)

[1] Write a block of Python code that uses a *while* loop to print numbers from 1 to 5 (inclusive), with their squares, in the following format.

```
square(1) = 1
square(2) = 4
square(3) = 9
square(4) = 16
square(5) = 25
```



[2] Write a block of Python code that uses a for loop to print the characters in a string variable, `text`, one character per line. For example, Consider that we have:

```
text = 'hello'
```

Executing your code should produce:

```
h
e
l
l
o
```

[3] Write a block of Python code that uses a for loop to print the numbers in a list variable, `numbers`. Only numbers divisible by 5 should be printed one number per line. For example, consider that we have:

```
numbers = [12, 20, 33, 45, 51]
```

Executing your code should produce:

```
20
45
```