**Lab 01**

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| Total Score: |  |

**Note:**

All of the explanations in this lab is optional. However, giving reasonable explanations to your answer or programs will earn you partial credits when your answer is incorrect.

1. **Multiple Choice (42 points, 6 points each question)**

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| # | Answer | Explanation (Optional) | Score |
| 1 | (a) | The values that an operator acts on are called **operands**  ‘a+5-b’does not include the sign of equality, so it is expression |  |
| 2 | (b) | Decimal numbers can be represented exactly. In contrast, numbers like **1.1** and **2.2** do not have exact representations in binary floating point. |  |
| 3 | (c) | If the first operand of an “and” expression is false, return first operand.  Otherwise, return the second operand.  Additionally, any value is interpreted as “false” for 0, 0.0, None, False, or empty collection.  Otherwise, it is interpreted as “True”  Thus “print(10 and 20)” produces 20 |  |
| 4 | (a) |  |  |
| 5 | (a) | 2 \* (s + t) is ‘foobarfoobar’, so ‘barf’ is in the 2 \* (s + t) |  |
| 6 | (a) | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | str | t | o | o | m | e | n | |  | 0 | 1 | 2 | 3 | 4 | 5 | |  | -6 | -5 | -4 | -3 | -2 | -1 |   1. s[::-5]: It returns every item on reverse position that is a **multiple of 5。**So the result is “nt”  2. s[::-1][::-5]:It priority deal with s[::-5], and the result is “nt”.  Then deal with s[::-1].It means reverse the string, so the result is “tn”  3.s[::5]: It returns every item on position that is a **multiple of**  **5。**So the result is “tn”  4.s[0] + s[-1] : s[0] is “t” and s[-1] is “n”, so the result is “tn”  5.s[::-1][-1] + s[len(s)-1] :  (1)s[::-1] reverse the string, and [-1] is the last position of the string(“t”).  (2)s[len(s)-1]:len(s) = 6,so s[len(s)-1] equal to s[5] equal to “n”  From(1)(2):the result of the s[::-1][-1] + s[len(s)-1] is “tn” |  |
| 7 | (e) | (a)(b) A dictionary can contain any type of Python object, including another dictionary. The keys in a given dictionary do not need to be the same type as one another, nor do the values.  (c) Even though dictionary access does not rely on item order, as of version 3.7 the Python language specification does guarantee that the order of items in a dictionary is maintained once the dictionary is created.  (d)Dictionary are accessed by key |  |

1. **Reading and Multiple selection (18 points, 6 points each question)**

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| # | Answer | Explanation (Optional) | Score |
| 1 | (a)(d) | Option D depends on the local conditions, the resulting code must be readable, consistent and backward compatible |  |
| 2 | (d) |  |  |
| 3 | (b)(d) | (a) print(x, + , y)  (c)a.insert(1, 100)  (e) t = (100,) |  |

1. **Programming Exercise (40 points, 10 points each question)**

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| # | Explanation (Optional) | Score |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |