

## ECE326 – Fall 2019: Week 2 Exercise Questions

### 1. True or False [1 mark each]

Circle T is true, otherwise circle F for false.

1. Assignment in Python is always by reference.    **T**    **F**
2. Dynamically typed languages do not perform type checking.    **T**    **F**
3. `global` keyword is required to read a global variable from inside a function.    **T**    **F**

### 2. Multiple Answers [2 marks each]

Pick all answers that are correct. You will lose 1 mark per wrong choice, down to 0 marks.

1. Which of the following operations are allowed inside a pure function?
  - (a) Read from a constant global variable
  - (b) Read from a static function variable
  - (c) Modify a local variable
  - (d) Call `print` function to write to console
  - (e) Call another pure function
2. In Python 3, `print` returns the string it printed to screen. Which of the following is true?
  - (a) `print` is a statement
  - (b) `print` is an expression
  - (c) you can assign `print` to a variable, i.e. `a = print`
  - (d) you can pass `print` to a function, i.e. `foo(print)`
  - (e) you can assign a value to `print`, i.e. `print = 5`

### 3. Short Answers

1. What does this expression evaluate to? [2 marks]

```
>> { b : a for a, b in enumerate("HELLO") }
```

2. What slice of the word "washington" will give the result of "ogisw"? (Give answer in the form [i:j:k])

#### 4. Programming Question [10 marks]

Write a function `reverse_dict()` that will reverse keys and values such that the original values become the new keys to lists of one or more values that were the original keys. For example:

```
{ "bob": 2, "greg": 3, "joe": 2, "tom": 1, "dave": 2, "stu": 3,
  "mike": 5 }
```

becomes:

```
{ 1: [ "tom" ], 2: [ "bob", "joe", "dave" ], 3: [ "stu" ],
  5: [ "mike" ] }
```