

## CS101 Final Exam (07-05-2015)

> Note that: Exam papers of the set 1 start with the MCQ as their first problem I.

### Solution and grading scheme for Problem I (set 1)

- There is 15 questions: Q.I.1), Q.I.2) to Q.I.15),
- The order is different between the 2 sets of papers,
- Each question have only one correct answer (given below),
- Two marks for each question, « binary » mode: 2 marks if the answer is the good one, zero mark otherwise.

### List of correct answers (and their justification)

Note: justification were **not asked** during the exam.

1. **b)** (these constants only create confusion is wrong, the three others are correct, as seen in class),
2. **b)** (from one step to the next, the size of the problem is reduced by half, so there are totally  $\log_2(n)$  such steps is correct, the three others are not relevant),
3. **c)** (**raise** is used to force a specific exception, **force** does not exist, **try** is to start a block ended with by the **except** keyword),
4. **c)** (Tuples are immutable while values in lists can be changed, the three others choices are wrong),
5. **b)** (Modularity is not a specific characteristic of Object Oriented Programming (OOP), but of modules/-packages programming, while the others are),
6. **c)** (the looping variable **i** should not be changed inside the for loop, the three other issues are not happening here),
7. **c)** (user-defined data type is what a class in Python is),
8. **c)** (**TypeError** unsupported operand type(s) for **/**: 'int' and 'str' will be raised, because before actually performing the operation, Python checks if he can do it, and here an integer (5) and a string ('0') are incompatible for the **/** operator),
9. **c)** (a new file object **f**, with name 'myfile.txt' is correct, because the request mode 'w' is **write** mode, so it does not care about the fact that **myfile.txt** does not exist),
10. **a)** ([2015, 'Anil', 2015, 'Anil'] is the only correct answer, indeed, for a list, the right multiplication with an integer is concatenating the list with itself:  $l * k = l + l + \dots + l$  (k times)),
11. **b)** (3, because the power operator has a higher priority that the multiplicative operator, so  $3*1**3 = 3 * (1**3) = 3 * 1 = 3$ ),
12. **a)** (True, False, False, because **d** has a key named 'age', but no key named 'Name' (everything in Python is case sensitive!) neither a key named 'job'),
13. **b)** (List inside the function:, [1, 2, 3, 4] and List outside the function:, [1, 2, 3, 4] is the only correct choice, indeed the function will modify the list (on line 2), so inside the function the list is [1, 2, 3, 4] but also afterward),
14. **c)** (**a = 4** and **b = 5** because the while loop will conserve the fact that  $a \leq b$ , and therefore stops as soon as **b = 5**),
15. **a)** (**del d['john']** is the only correct syntax, as seen in class and in lab).