**Quiz 1**

Do not panic! We are using this test to see how you guys are doing. It’s not a midyear or exam, relax, you are allowed to use notes and on some questions you can ask for help.

**Part A: Short Questions[25]**

Answer these questions on this question paper. You are not allowed to use a computer for Part A: Hand in your answers to part A before doing part B

1. Fill in the gaps in the following paragraph:

A computer takes an \_\_input\_\_, processes it and gives an \_\_\_output\_\_. A user can interact with the computer using a Graphical User \_\_\_Interface\_\_\_(GUI) or Command Line \_\_\_ Interface \_\_\_(CLI). Programming is teaching the computer how to process information, it is done in a specific programming \_\_Language\_\_\_ that both a programmer and computer can understand. [5]

1. What are the following data types? If it is not a data type, write ERROR :

|  |  |
| --- | --- |
| * 1. 5.6 | float |
| * 1. ‘Apple’ | str |
| * 1. 3 | int |
| * 1. 4 > 2 | bool |
| * 1. ‘1.2’ | str |
| * 1. ‘ear’ == ‘ears’ | bool |
| * 1. π (This is pi for calculating area of a circle) | float |
| * 1. true | ERROR |
| * 1. None | None [9] |

1. What do the following lines print in the Python shell? If it gives an error, write ERROR.

|  |  |
| --- | --- |
| * 1. Print(“Hello”) | ERROR |
| * 1. print(3) | 3 |
| * 1. print(‘scope’) | scope |
| * 1. print(example) | ERROR |
| * 1. print(‘Python is so cool’ | ERROR |
| * 1. dir | ERROR [6] |

Evaluate the following expressions and give the answer exactly the way the shell would. If it gives an error write ERROR.

|  |  |
| --- | --- |
| 1. 5%3 | 2 |
| 1. 4/2 | 2.0 |
| 1. 9//5 | 1 |
| 1. 4%1+6\*1 | 6 |
| 1. 5 == 5 | True |
| 1. 4 < 3 | False |
| 1. ‘3’ == ‘ 3 ‘ | False |
| 1. 12 >= 13 | False |
| 1. 2 = 4 | ERROR |
| 1. 24 == 24.000000000000001 | False |
| 1. (1 > 3) != True | True [11] |

1. What is the final value **AND** type of x in the following code? If it gives an error, write ERROR.

|  |  |  |
| --- | --- | --- |
|  | x = 3  y = 2  x = y | x = 2 , int [2] |
|  | x = ‘cat’  y = 2  y = x | x = ‘cat’, str [2] |

**Part B: Coding Questions[30]**

For the following questions you are allowed to use a script/shell to test your code but write the answers in the spaces given below.

1. Let x = 2 and y = 1, write a piece of code that exchanges the values of x and y (Hint: when you say x = 2 then x = 4, the value of 2 is lost forever, use a third variable) [4]

|  |
| --- |
| x = 2  y = 1  temp = x -(1 for using third variable, 1 for following variable naming rules)  x = y -(1 for the line y = x or x = y)  y = temp -(1 for y = temp or x = temp)  [4] N.B any name can be used for temp |

1. Write a piece of code that prints the following:
   1. The text “Python is so much fun” on the first line
   2. “5 \* 4 = ” (Calculate the answer and put it on the same line here) on the second line

|  |  |
| --- | --- |
| print(“Python is so much fun”)  print(“5 \* 4 =”, 5\*4) | (1 for print, 1 for brackets and quotes, 1 for text)  (1 for print and brackets, 1 for quotes around “5\*4=”, 1 for calculating 5\*4 (does not need to use variables),  1 for either using comma in print or using concatenation i.e  print(“5 \* 4 = “ + str(5\*4))  [7] |

1. **Python shell problem**

Use the shell as a calculator to find the answer to the following:

(2\*3%4)\*((1.4//0.4) + (15 - 3)) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_30.0\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[2]

1. **Python script problem**

You are going to write a script that asks the user their name, their birthyear and then greets them and tells them how many years ago they were born. Do not panic! It looks long but each step is very short.

* 1. Create a new script and name it with your first name, last name and school (Remember the rules for naming files) and save it on the desktop (C:/users/zimcode/Desktop).

**If you cannot do part a. ask for help, you will not be penalized.**

* 1. On the first line of your script write a comment with your name.[1]
  2. Define/Declare a new variable called ***name*** and make it input from the user with the question “What is your name? ”.[3](1 for variable, 1 for input function, 1 for brackets,quotes,text)
  3. Define/Declare a new variable called ***birth\_year*** and make it input from the user with the question “What is your birth year? ”.[3]
  4. Change/Cast the ***birth\_year*** variable into a type you can use to calculate.[2](1 for any type casting, 1 for int type casting)
  5. Define/Declare a new variable called ***this\_year*** and make it equal to 2016, make sure it is an integer.[1]
  6. Define/Declare a new variable called ***years\_ago*** and make it equal to: ***this\_year – birth\_year***[2]
  7. Convert/Cast ***years\_ago*** into a type that you can use for concatenation.[2]
  8. Make your script print the following statement on the same line, using concatenation or some other method e.g. If my name is Ben Bitdiddle and I was born in 2015 (1 year ago).[3](1 for print, 1 for concatenation/multiple arguments in print, 1 for putting everything in one line with proper spaces)

|  |
| --- |
| >>>What is your name? Ben Bitdiddle  >>> What is your birthyear? 2015  Ben Bitdiddle was born 1 years ago  >>> |

* 1. Run your script to make sure it works. If it has an error, ask for help but we will remove 1 point.

|  |
| --- |
| #Name of student [1]  name = input(“What is your name? “) [3]  birth\_year = input(“What is your birth year? “) [3]  birth\_year = int(birth\_year) [2]  this\_year = 2016 [1]  years\_ago = this\_year – birth\_year [2]  years\_ago = str(years\_ago) [2]  print(name + “ was born “ + years\_ago + “ years ago”) [3]  or  print(name,”was born”,years\_ago,”years ago”) [3]  **[17]** |