

University of Cape Town
Department of Computer Science

Computer Science CSC1010H

Class Test 1

Thursday, 8 May 2014

Marks: 35

Time: 40 minutes

- Approximate marks per question are shown in brackets
- The use of calculators is permitted

NAME: Surname Initials

STUDENT NO: COURSE CODE:

This paper consists of 6 questions and 5 pages (including this cover page).

Mark Allocation							
Question	Marks	Internal	External	Question	Marks	Internal	External
1	9			6	5		
2	6						
3	3						
4	6						
5	6						
Total				Total			
Grand Total							
						Final Mark	
Internal Examiner:				External Examiner:			

Question 1. [9 marks]

For each of the following, say whether the statement is True or False.

a) Division has higher precedence than modulus when evaluating expressions in Python.

_____ [1]

b) Square brackets [] are used to enclose function parameters.

_____ [1]

c) An if statement always needs a corresponding else statement.

_____ [1]

Answer the following questions:

d) The world wide web is based on the concept of hypertext. Explain briefly what that concept of hypertext means.

_____ [1]

e) What is the term used when referring to the grammatical rules of a program?

_____ [1]

f) What is the data type of the result when an arithmetic operation is performed on an int and a float?

_____ [1]

g) Which Python Turtle function allows the turtle to move without drawing a line?

_____ [1]

Insert the missing word:

h) The _____ Python data type only stores text based data. [1]

i) When solving a computing related problem it is always better to first write the planned series of steps known as an _____ and then write the computer program.

Question 2. [6 marks]

What is the value of each of these expressions if evaluated in Python:

a) `print(2 + 3 * 5 % 4)` _____ [1]

- b) `print(2 * 3 ** 2)` _____ [1]
- c) `import math`
`print(math.ceil(2.5*2))` _____ [1]
- d) `b = 12`
`b //= 5`
`print(b)` _____ [1]
- e) `s = 'a1b2c3d4e5'`
`print(s[4:8])` _____ [1]
- f) `a, b, c = 2, 4, 6`
`print(not a < c or b > c)` _____ [1]

Question 3. [3 marks]

Indicate which of the following identifier names are *valid* or *invalid*:

- a) `name&surname` _____
- b) `cell_number` _____
- c) `2ndvalue` _____ [3]

Question 4. [6 marks]

Find three errors in the Python program below which would be generated by the Python compiler, indicating which line number it is on, as shown on the left. Also indicate what the error is, and explain how you would fix it:

```

1. import math
2.
3. def main()
4.     num = float(input('Enter num:'))
5.     if 0 <= num <= 100:
6.         square = math.pow(num,2)
7.         print('square is'; square)
8.     elif:
9.         print('Error num not in range')
10.
11. main()

```

[6]

Question 5. [6 marks]

Consider this definition of a Python main() function and answer the questions below:

```
1. def main():  
2.     a = int(input('enter a:'))  
3.     b = input('enter b:')  
4.     c = str(a + 2) + b  
5.     print(c)  
6.  
7. main()
```

a) What datatype is a? _____ [1]

b) What datatype is b? _____ [1]

c) What datatype is c? _____ [1]

d) Four different types of operations occur on line 4. Name all four operation types.

[2]

e) What is the output of this program if the user enters 3 and 5?

[1]

Question 6. [5 marks]

Write a complete Python program which calculates the profit on an item to be sold, and does the following:

- prompts the user and reads the cost price,
- prompts the user and reads the sales price,
- calculates the profit,
- and prints out the answer with an appropriate message.

Note: Ensure that your program has a `main()` function and is able to run.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

[5]