

University of Cape Town ~ Department of Computer Science

Computer Science 1017F ~ 2014

Class Test 1

Enter the following details AND shade in the corresponding blocks to the right with your Student Number.

Faculty (please tick one):

Science	Engineering	Commerce	Humanities	Other:
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Student Number :

ADN30W001

Name (optional) :

Marks : 30

Time : 40 minutes

Instructions:

- Answer all questions.
- Write your answers in PEN in the spaces provided.
- Show all calculations where applicable.

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FOR
OFFICIAL
USE
ONLY:

Question	1	2	3	4	5	6	7	8
Max	6	6	10	8				
Marks	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Question 1 Multiple Choice [6]

For each of the multiple choice questions below, write down the letter corresponding to the correct answer. Note that **all code examples** refer to **Python version 3**.

(a) `5//3 + 2` will evaluate as:

- i. 4.0
- ii. 3.6666666666666667
- iii. 3
- iv. 1

(b) `print('h','e','l','l','o', sep='_', end='*')` will display what output:

- i. hello*
- ii. h_e_l_l_o*
- iii. hello*
- iv. h_e_l_l_o

(c) `min(len("hello"), len("hi"), 3, 7)` will evaluate as:

- i. 3
- ii. 4
- iii. 7
- iv. 2

Jan

(d) `'10.0' + '10'` will evaluate as:

- i. 20.0
 - ii. 20
 - iii. Syntax error
 - iv. '10.010'
-

(e) After this line of code runs:

```
x, y = 5.0/2, 7/2
```

the variable y contains:

- i. 2.5
 - ii. 3
 - iii. 3.5
 - iv. 2
-

(f) `eval("7+4") + 2` will evaluate as:

- i. 13
 - ii. TypeError
 - iii. "7+42"
 - iv. 11
-

Jon

Question 2 [6]

- (a) Explain the difference between an **algorithm** and a **program**. [3]

- (b) What is the difference between **main memory** and **secondary memory**? [3]

Jon

Question 3 [10]

The code below is intended to provide the result of division between two numbers given by the user:

```
def divide_numbers():  
    a = eval(input("Enter first number"))  
    b = eval(input("Enter second number"))  
    answer = "a / b"  
    print(answer)  
  
divide_numbers()
```

(a) From the code listed above, give an example of:

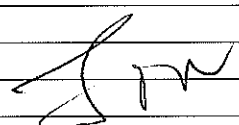
i. a variable [1]

ii. a literal [1]

iii. a function name [1]

iv. an assignment statement [1]

(b) Explain the difference between errors of **syntax** and errors of **semantics**. [2]



(c) Identify two lines of the above code which cause the program **not** to function as intended, and write them down below. For each line, indicate whether the problem is **syntactic** or **semantic**. [4]

Question 4 [8]

Examine the code below:

```
a = "i love csc1017f"
print(a.replace(' ', ''))
print(a.count(' '))
print(a[:])
print(a[7:15:2])
```

(a) What is the exact output:

[5]

(b) Write down a modified version of the fourth line of the program that would print the word "csc1017f". Use the variable a, not string literals.

[1]

(c) Write down one line of Python code that you could add after the code provided to print the line below. Do not use string literals, apart from ','.

[2]

i,love,csc1017f



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Faculty (please tick one):

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Student Number :

BROCAT 005

Name (optional) :

Marks : 30

Time : 40 minutes

Instructions:

- Answer all questions.
- Write your answers in PEN in the spaces provided.
- Show all calculations where applicable.

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FOR
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Question	1	2	3	4	5	6	7	8
Max	6	6	10	8				
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Marker								

Question 1 Multiple Choice [6]

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-

CAT

(d) `'10.0' + '10'` will evaluate as:

- i. 20.0
 - ii. 20
 - iii. Syntax error
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-

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x, y = 5.0/2, 7/2
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the variable y contains:

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-

CAT

Question 2 [6]

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CAT

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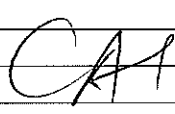
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CAI

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CRM 2030/1

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O	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Q	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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T	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
U	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
W	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Z	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

FOR
OFFICIAL
USE
ONLY:

Question	1	2	3	4	5	6	7	8
Max	6	6	10	8				
Marks	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marker								

Question 1 Multiple Choice [6]

For each of the multiple choice questions below, write down the letter corresponding to the correct answer. Note that **all code examples** refer to **Python version 3**.

(a) `5//3 + 2` will evaluate as:

- i. 4.0
 - ii. 3.6666666666666667
 - iii. 3
 - iv. 1
-

(b) `print('h','e','l','l','o', sep='_', end='*')` will display what output:

- i. hello*
 - ii. h_e_l_l_o*
 - iii. h e l l o*
 - iv. h_e_l_l_o
-

(c) `min(len("hello"), len("hi"), 3, 7)` will evaluate as:

- i. 3
 - ii. 4
 - iii. 7
 - iv. 2
-

RGB

(d) '10.0' + '10' will evaluate as:

- i. 20.0
 - ii. 20
 - iii. Syntax error
 - iv. '10.010'
-

(e) After this line of code runs:

```
x, y = 5.0/2, 7/2
```

the variable y contains:

- i. 2.5
 - ii. 3
 - iii. 3.5
 - iv. 2
-

(f) eval("7+4") + 2 will evaluate as:

- i. 13
 - ii. TypeError
 - iii. "7+42"
 - iv. 11
-

Ref

Question 2 [6]

- (a) Explain the difference between an **algorithm** and a **program**. [3]

- (b) What is the difference between **main memory** and **secondary memory**? [3]

REB

Question 3 [10]

The code below is intended to provide the result of division between two numbers given by the user:

```
def divide_numbers():  
    a = eval(input("Enter first number"))  
    b = eval(input("Enter second number"))  
    answer = "a / b"  
    print(answer)  
  
divide_numbers()
```

(a) From the code listed above, give an example of:


i. a variable [1]

ii. a literal [1]

iii. a function name [1]

iv. an assignment statement [1]

(b) Explain the difference between errors of **syntax** and errors of **semantics**. [2]



(c) Identify two lines of the above code which cause the program **not** to function as intended, and write them down below. For each line, indicate whether the problem is **syntactic** or **semantic**. [4]

Question 4 [8]

Examine the code below:

```
a = "i love csc1017f"
print(a.replace(' ', ''))
print(a.count(' '))
print(a[:])
print(a[7:15:2])
```

(a) What is the exact output:

[5]

(b) Write down a modified version of the fourth line of the program that would print the word "csc1017f". Use the variable a, not string literals. [1]

(c) Write down one line of Python code that you could add after the code provided to print the line below. Do not use string literals, apart from '!'. [2]

i,love,csc1017f

RAB