

University of Cape Town
Department of Computer Science

Computer Science CSC1010H

Class Test 3

Wednesday, 1 October 2014

Marks: 35	• Approximate marks per question are shown in brackets
Time: 40 minutes	• The use of calculators is permitted

	Surname	Initials
NAME:	<input type="text"/>	

STUDENT NO:	<input type="text"/>	COURSE CODE:	<input type="text" value="CSC"/>
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This paper consists of 5 questions and 5 pages (including this cover page).

Mark Allocation							
Question	Marks	Internal	External	Question	Marks	Internal	External
1	3			5	5		
2	12						
3	5						
4	10						
Total				Total			
Grand Total							
						Final Mark	
Internal Examiner:				External Examiner:			

Question 1. [3 marks]

- a) Which Python keyword is used to specify a code block which should be executed in an exception, whether an exception occurs or not. [1]

- b) Which Python exception is generated when trying to index a sequence out of range. [1]

- c) Write a line of code which goes at the top of the code block which handles the exception mentioned in b) and putting that exception in a variable *ie*. [1]

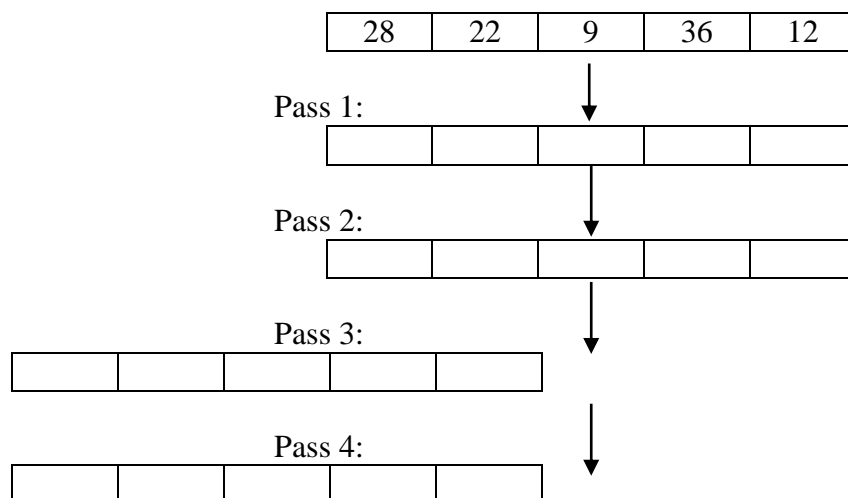
Question 2. [12 marks]

- a) Considering the sorting algorithms Selection Sort and Merge Sort:

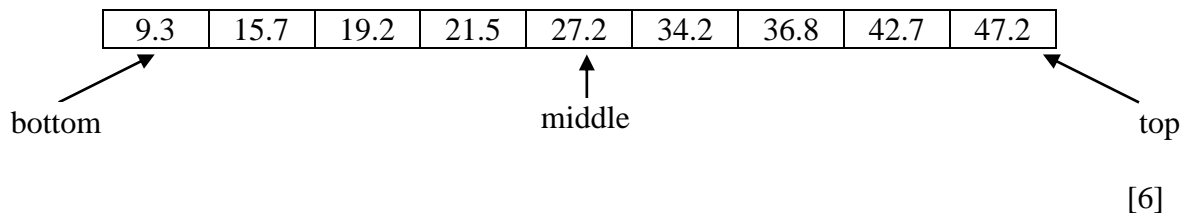
- i. Which algorithm is more efficient? [1]

- ii. Which is algorithm is simpler to code? [1]

- b) Show how the following array changes after each pass of an ascending-order selection sort. [4]



c) Use Binary Search to find the value 21.5 in the following sorted array. Show how the indices *bottom*, *middle* and *top* will change for each step of the Binary Search (do this by drawing the arrows with labels, as shown above).



i)

9.3	15.7	19.2	21.5	27.2	34.2	36.8	42.7	47.2
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ii)

9.3	15.7	19.2	21.5	27.2	34.2	36.8	42.7	47.2
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ii)

9.3	15.7	19.2	21.5	27.2	34.2	36.8	42.7	47.2
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Question 3. [5 marks]

a) Fill in the two missing elements from the process used for the Scientific Method. [2]

b) Name two ways to present data from an experiment in an organized and visual way. [2]

c) What is the Python Epoch reference date? [1]

[10 marks]

- [7]

[illegible]

- [3]

Question 5. [5 marks]

- a) Consider the following written question, and do a task analysis on the question.

Considering Python loops, contrast for loops and while loops, specifically looking at keywords and their use, i.e. when to use which loop. [3]

- b) In the formal writing process, indicate why referencing is important? [1]

Indicate if the following statements are true or false:

- c) In academic writing, personal pronouns like “I”, “me” and “we” are frequently used. [1]
