

## **Cambridge International Examinations**

Cambridge Ordinary Level

COMPUTER SCIENCE 2210/23

Paper 2 October/November 2016

MARK SCHEME
Maximum Mark: 50

### **Published**

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#### Section A

- **1 (a)** Many correct answers, the identifiers must be meaningful. These are examples only. There are two marks available for each identifier:
  - 1 mark for suitable name
  - 1 mark for a suitable data structure, data type and use
  - MaxVotes, constant, integer, maximum number of votes that can be cast
  - CandidateName, array, string, name of candidate
  - NoCandidates, variable, integer, number of candidates
  - TotalNoCandidateVotes, array, integer, total number of votes cast
  - **(b)** Any **four** from:
    - prompt for input of candidate number
    - input of candidate number
    - check for candidate number of 1, 2 or 3
    - output 'invalid vote' if input not 1, 2, or 3
    - otherwise add 1 to appropriate total and ...
    - ... output name of candidate voted for

[4]

[8]

- (c) Description (may include reference to programming statements) any six marks from
  - output total and ...
  - ... corresponding candidate name...
  - description of method for selecting descending order of totals
  - evidence that the method works
  - check if highest number of votes is a unique value
  - if unique output the candidate name and 'NEW CLASS CAPTAIN'
  - otherwise output 'NO OVERALL WINNER'

[6]

- (d) Accept any reasonable suggestion(s), two marks can be awarded for either a suggestion with an accompanying description e.g.
  - re run the voting (1) without the least popular candidate (1)

or accept two different suggestions e.g.

- re run the voting
- give the teacher the casting vote.

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### Section B

# 2 (a) 1 mark for each change

- Line 2: OutRange = 0
- Line 6: should be OutRange = OutRange + 1
- Line 7: not needed
- Line 8: NEXT X should be NEXT Count / Line 3: FOR Count = 1 TO 10 should be FOR X = 1 TO 10 [4]

(b)

Number	Within range (✓)	Outside range (✓)	Reason
10		<b>√</b>	Range greater than 10, so 10 not included
20		<b>~</b>	Range less than 20, so 20 not included

[4]

3

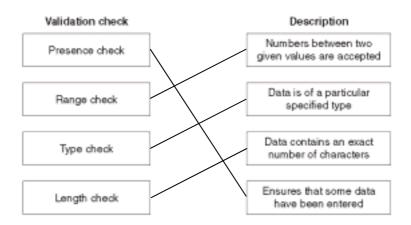
Price	Change	Dollars	TenCents	OUTPUT
6.29				
	3.71			
		3		
	0.71			3 dollars
	0.21			One 50 cent coin
			2	2 ten cent coins
				One 5 cent coin

(1 mark per correct column)

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4 1 mark for each correct link up to maximum of 3 marks



[3]

For each example 1 mark for correct structure, 1 mark for appropriate content inside loop and
 1 mark for reason. There are many correct answers these are only samples

REPEAT
..INPUT Number
Total ← Total + Number
UNTIL Number = 0

- at least one repeat is required

WHILE Number <> -1 DO
..INPUT Number
 Total ← Total + Number
ENDWHILE
 - the loop may never be executed

[6]

- 6 (a) Town has duplicate entries/all fields can have duplicate entries
  - fields other than Town not suitable identifiers

[2]

- **(b)** Performance number ...
  - ... uniquely identifies each performance

[2]

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(c)

Field:	Town	Tour Date	Price Local Currency	
Table:	THEATRETOURS	THEATRETOURS	THEATRETOURS	
Sort:	Ascending			
Show:	V	abla	V	
Criteria:				
or:				

<sup>1</sup> mark for each column + 1 mark for correct fields only

[4]