COMPUTER SCIENCE
Paper 2
MARK SCHEME
Maximum Mark: 50

Published

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Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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This document consists of 5 printed pages.
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

(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’

(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.
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

(b)

<table>
<thead>
<tr>
<th>Number</th>
<th>Within range (✓)</th>
<th>Outside range (✓)</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>Range greater than 10, so 10 not included</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>………………………………………………………………………</td>
</tr>
<tr>
<td>20</td>
<td>✓</td>
<td>✓</td>
<td>Range less than 20, so 20 not included</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>………………………………………………………………………</td>
</tr>
</tbody>
</table>

3

<table>
<thead>
<tr>
<th>Price</th>
<th>Change</th>
<th>Dollars</th>
<th>TenCents</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.71</td>
<td></td>
<td></td>
<td>3</td>
<td>3 dollars</td>
</tr>
<tr>
<td>0.21</td>
<td></td>
<td></td>
<td></td>
<td>One 50 cent coin</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
<td>2 ten cent coins</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One 5 cent coin</td>
</tr>
</tbody>
</table>

(1 mark per correct column)
4 1 mark for each correct link up to maximum of 3 marks

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

(b) – Performance number ...
   – ... uniquely identifies each performance
(c)

<table>
<thead>
<tr>
<th>Field</th>
<th>Town</th>
<th>Tour Date</th>
<th>Price Local Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table</td>
<td>THEATRETOURS</td>
<td>THEATRETOURS</td>
<td>THEATRETOURS</td>
</tr>
<tr>
<td>Sort</td>
<td>Ascending</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Show</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Criteria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>or:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 mark for each column + 1 mark for correct fields only [4]