Published

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

Cambridge will not enter into discussions about these mark schemes.

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Section A

1 (a) (i) Many correct answers, they must be meaningful. This is an example only.
   – Choice, integer, choice of charity
   – Cost, real, cost of shopping
   – Donation, real, donation calculated from cost of shopping [3]

   (ii) – Array
   – a set of (similar) variables grouped together// description or array declaration applied
to the scenario e.g. DonationTotals[1:3]
   – allows for more efficient programing e.g. use of indices//each charity total can be
   identified by an index

   or

   – List
   – a set of variables grouped together// description or list declaration applied to the
scenario e.g. DonationTotals[]
   – allows for more efficient programing e.g. use of a loop to update each charity

   or

   – Variables
   – storage locations that can be changed// description or declaration applied to the
scenario e.g. DonationTotal1, DonationTotal2 and DonationTotal3
   – e.g. as there are only 3 charities so there is no need to use an array [3]

(b) Any five from:
   – Prompt for input of charity choice // prompt for input of value of shopping
   – input charity choice
   – check for input of 1, 2, or 3
   – input value of shopping
   – calculate donation
   – add donation to the appropriate total
   – output name of charity and amount/total amount donated [5]

   Sample Answer.
   REPEAT
   PRINT 'Please enter choice of charity 1, 2. or 3 '
   INPUT Choice
   UNTIL Choice = 1 or Choice = 2 or Choice = 3
   PRINT 'Please enter value of shopping bill '
   INPUT BillValue
   Donation ← BillValue * 0.01
   Total (Choice) ← Total (Choice) + Donation
   PRINT 'Charity ', CharityName (Choice), ' has received a donation of ', Donation
(c) Maximum six marks in total for question part
   **Description** (may include reference to program statements)
   – when charity choice = -1
   – display total donation for **each** charity …
   – … with corresponding charity name…
   – description of method for selecting descending order of totals
   – evidence that the method works
   – calculate grand total from 3 totals / sum of all donations
   – output ‘GRAND TOTAL DONATED TO CHARITY’ and grand total

   [6]

(d) Any three from:
   – input number of charities
   – store the number of charities as a variable
   – change the upper value of the choice input
   – change the array bounds for total donations etc.// add new variables to hold extra values
   – the need to change the code…
   – … to allow for differing number of charities

   [3]
Section B

2 1 mark for identifying each error, 1 mark for the corresponding change

- line 2 or Counter = 100
  - Counter = 0

- line 6 or UNTIL Num < 0
  - UNTIL Num >= 0

- line 7 or Total = Total + 1
  - Total = Total + Num

- line 8 or Counter = Counter + Num
  - Counter = Counter + 1

3 Trace table for input value 33

<table>
<thead>
<tr>
<th>X</th>
<th>A</th>
<th>B</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

← (1 mark) → (1 mark)

Trace table for input value 75

<table>
<thead>
<tr>
<th>X</th>
<th>A</th>
<th>B</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>9</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

← (1 mark) → (1 mark)
4 For each example: 1 mark for correct structure, 1 mark for appropriate content, 1 mark for the reason. There are many correct answers these are only examples

IF X > 0 AND X <= 10
    THEN PRINT 'In Range'
    ELSE PRINT 'Out of Range'
ENDIF
– e.g. checking a condition that may be complex//uses relational operators// checking for a range of values// only 2 options

CASE X OF
    1 : PRINT 'Option 1'
    2 : PRINT 'Option 2'
    3 : PRINT 'Option 3'
    OTHERWISE PRINT 'Incorrect choice'
ENDCASE
– e.g. checking for discrete/large number/more than 2 of values

5 (a) – 6

(b) – Play text
– No Seats Stalls number
– Price Stalls Seats $ currency

(c) 1 mark for correct plays, 1 mark for correct dates with each play and no extra fields or text, 1 mark for the order
   As You Like It 01/07/2016
   Julius Caesar 22/07/2016
   Macbeth 14/07/2016

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(d)  

<table>
<thead>
<tr>
<th>Field:</th>
<th>Performance Date</th>
<th>Number Seats Circle</th>
<th>Price Circle Seats $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table:</td>
<td>PLAYPRODUCTION</td>
<td>PLAYPRODUCTION</td>
<td>PLAYPRODUCTION</td>
</tr>
<tr>
<td>Sort:</td>
<td>Ascending/Descending</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Show:</td>
<td>✓</td>
<td>✓</td>
<td>☐</td>
</tr>
<tr>
<td>Criteria:</td>
<td>&gt;=6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(1 mark)</th>
<th>(1 mark)</th>
<th>(2 marks)</th>
<th>(1 mark)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 for Criteria</td>
<td>1 for correct Field &amp; Table &amp; Sort &amp; Show &amp; or</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>