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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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Section A

1 (a) (i) Many correct answers, names must be meaningful. This is an example only.

Length, real/integer, length of parcel
Breadth, real/integer, breadth of parcel
Height, real/integer, Height of parcel

(ii) Several correct answers, they must be meaningful. These are examples only.

Dimension, 80
TotalDimension 200
MaxWeight 10.00

(b) Any 5 from:

– input length, breadth, height and weight
– check each dimension, not more than 80
– check total of dimensions, not more than 200
– check weight at least 1
– check weight not more than 10
– output parcel accepted (must be in appropriate position)
– output parcel rejected (must be in appropriate position)
– output all reasons for rejecting parcel (reason must follow test)

Max 5 marks

Sample Answer.

INPUT Length, Breadth, Height, Weight
IF Length <= 80 AND Breadth <= 80 AND Height <= 80 AND Weight >= 1
AND Weight <=10 AND Length + Breadth + Height <= 200 THEN
PRINT 'Parcel accepted'
ELSE
PRINT 'Parcel rejected'
IF Length > 80 OR Breadth > 80 OR Height > 80 THEN
PRINT 'At least one dimension too large'
ENDIF
IF Weight < 1 THEN
PRINT 'Parcel too light'
ENDIF
IF Weight > 10 THEN
PRINT 'Parcel too heavy'
ENDIF
ENDIF
(c) 1 mark for the data set and 1 mark for the matching reason all, data sets and reasons must be different. There are many possible correct answers these are examples only.

- Data set: 30, 29, 28, 4
  - Reason: normal data; parcel should be accepted

- Data set: 80, 60, 60, 10
  - Reason: boundary data; parcel should be accepted

- Data set: 85, 60, 60, 11
  - Reason: abnormal data; parcel should be rejected

(d) Maximum 4 marks in total, maximum 2 marks if only programming statements used.

**Explanation** (may include reference to programming statements):
- loop for number of parcels
- parcels 5 kg or less use standard price
- over 5 kg use weight to calculate price
- Correct calculation of price
- keep running total of consignment price
Section B

2  (i)  1 mark for each change

   Change variable name in every instance as needs to be meaningful e.g. Large
   Set this variable to a low value
   line 5: change comparison from < to >

(ii) 3 marks maximum, 1 mark for each change correctly included.

1   Large = 0
2   Counter = 0
3   REPEAT
4   INPUT Num
5   IF Num > Large THEN Large = Num
6   Counter = Counter + 1
7   UNTIL Counter = 10
8   PRINT Large

3  (i)  Name type – string
     Gender type – char/string
     Status type – char/string
     Fee type – real
     Team member type – Boolean

(ii) Data Structure – several Arrays ……
     ……………Reason – to simplify programming/make programs shorter/index can be used
     to identify the same member across the arrays etc.
## Mark Scheme

### Syllabus: 0478 21

**Cambridge IGCSE – May/June 2016**

### Question 4

<table>
<thead>
<tr>
<th>Riders</th>
<th>Reject</th>
<th>Height</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>1.3</td>
<td></td>
</tr>
<tr>
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<td></td>
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</tr>
<tr>
<td>8</td>
<td></td>
<td>1.3</td>
<td></td>
</tr>
</tbody>
</table>

(1 mark) (1 mark) (1 mark) (1 mark)

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### Question 5

- FOR (... TO ... NEXT)...
- ... a set number of iterations
- WHILE (... DO ... ENDWHILE) ...
- ... used where the loop may never be executed/whilst a specified condition exists

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### Question 6

(a) – all (fields) have (1 mark) duplicate entries (1 mark)
  - none (of the fields) (1 mark) have unique entries(1 mark)

(b) – e.g. StaffNumber ....
  - ..... Uniquely identifies each member of staff//no duplicates//different for each member of staff
(c)

<table>
<thead>
<tr>
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<th>Department</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
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<td>STAFFPHONE</td>
<td>STAFFPHONE</td>
</tr>
<tr>
<td>Sort:</td>
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<tr>
<td>Show:</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Criteria:</td>
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<td></td>
</tr>
</tbody>
</table>

[5]