Published

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Mark schemes should be read in conjunction with the question paper and the Principal Examiners’ 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 [3]

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

- Dimension, 80
- TotalDimension 200
- MaxWeight 10.00 [2]

(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) [5]

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
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.
### Question 4

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

\[4\]

### Question 5

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

\[4\]

### Question 6

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

\[2\]

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

\[2\]
(c)

<table>
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<th>Department</th>
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<td>STAFFPHONE</td>
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<tr>
<td>Sort:</td>
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<td>Ascending</td>
</tr>
<tr>
<td>Show:</td>
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<td>☑</td>
</tr>
<tr>
<td>Criteria:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or:</td>
<td>(2 marks)</td>
<td>(2 marks)</td>
</tr>
</tbody>
</table>

[5]