



Cambridge International Examinations Cambridge Ordinary Level

COMPUTER SCIENCE

Paper 2

May/June 2016

MARK SCHEME

Maximum Mark: 50

Published

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Page 2	Mark Scheme	Syllabus	Paper
	Cambridge O Level – May/June 2016	2210	21



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
```

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge O Level – May/June 2016	2210	21



(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

[6]

(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

[4]

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge O Level – May/June 2016	2210	21



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]

[3]

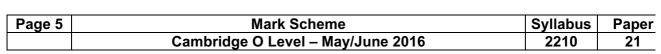
3 (i) Name type – string
Gender type – char/string
Status type – char/string
Fee type – real
Team member type – Boolean

[5]

(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.

[2]





4

Riders	Reject	Height	Output
0	0		
1		1.4	
2		1.3	
	1	1.1	
3		1.3	
	2	1.0	
4		1.5	
5		1.2	
6		1.3	
7		1.4	
8		1.3	
			Ready to go 2

(1 mark) (1 mark) (1 mark) [4]

- **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

[4]

- 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
 - $-\ldots$ Uniquely identifies each member of staff//no duplicates//different for each member of staff

[2]

Page 6	Mark Scheme	Syllabus	Paper
	Cambridge O Level – May/June 2016	2210	21



(c)

Field:	Department	Name			
Table:	STAFFPHONE	STAFFPHONE			
Sort:	Ascending	Ascending			
Show:	Ø	\square			
Criteri					
a:					
or:					
	(2 marks)	(2 marks) (1 ma	ark for correct ord	ler and number of t	fields shown)
					[5]