Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

Cambridge IGCSE

COMPUTER SCIENCE **0478/21**

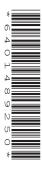Paper 2 Problem-solving and Programming **May/June 2016**

PRE-RELEASE MATERIAL

No Additional Materials are required.

This material should be given to the relevant teachers and candidates as soon as it has been received at the Centre.

READ THESE INSTRUCTIONS FIRST

Candidates should use this material in preparation for the examination. Candidates should attempt the practical programming tasks using their chosen high-level, procedural programming language.

This document consists of **2** printed pages.

International Examinations

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In preparation for the examination candidates should attempt the following practical tasks by **writing and testing a program(s)**.

The manager of a parcel delivery service needs a program to check the size and weight of parcels to determine which parcels can be accepted for delivery.

Write and test a program for the manager.

- Your program must include appropriate prompts for the entry of data.
- Error messages and other output need to be set out clearly.
- All variables, constants and other identifiers must have meaningful names.

You will need to complete these **three** tasks. Each task must be fully tested.

TASK 1 – Check the size and weight of a single parcel

Each parcel must obey the following rules to be accepted for delivery:
- each dimension must be no more than 80 cm
- the sum of the three dimensions must be no more than 200 cm
- the weight of the parcel must be between one and ten kilograms inclusive

Input and store the weight and dimensions for one parcel. All the dimensions and the weight must be validated on entry and an unsuitable parcel rejected.

Output if the parcel is accepted or rejected. If rejected, output **all** the reasons why the parcel was rejected.

TASK 2 – Check a customer's consignment of parcels

Input and store the number of parcels in the consignment. Calculate the number of parcels accepted and the total weight of the parcels accepted. For each parcel that was rejected, output **all** the reasons why that parcel was rejected.

Output the number of parcels accepted and the total weight of parcels accepted.
Output the number of parcels rejected.

TASK 3 – Calculate the price for a customer's consignment of parcels

Extend TASK 2 to also calculate the price for each parcel, using the following rules:
- 1 kg to 5 kg inclusive costs $10
- Each 100 grams over 5 kg, up to 10 kg, costs an extra $0.10

Your output should also include the price for each parcel accepted and the total price of the consignment.