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**COMPUTER SCIENCE**

**0478/21**

Paper 2 Problem-solving and Programming

**October/November 2018**

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.**

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**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.

Any businesses described in this paper are entirely fictitious.



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This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

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

In preparation for the examination candidates should attempt the following practical tasks by **writing and testing a program or programs**.

You are working at a local take-away shop and you have decided to write a program to track daily takings and profit. Here is the menu:

Menu item	Price
French fries	\$2.00
1/4 pound burger	\$5.00
1/4 pound cheeseburger	\$5.55
1/2 pound burger	\$7.00
1/2 pound cheeseburger	\$7.50
Medium pizza	\$9.00
Medium pizza with extra toppings	\$11.00
Large pizza	\$12.00
Large pizza with extra toppings	\$14.50
Garlic bread	\$4.50

Write and test a program or programs.

- Your program or programs must include appropriate prompts for the entry of data.
- Error messages and other output need to be set out clearly and understandably.
- 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 – Setting up the menu.**

Set up a series of arrays to store the menu items and the prices, using the data supplied in the menu. Devise an item code for each menu item and store these in another array. Output a new menu including the item codes so that customers can place an order using the item codes.

**TASK 2 – Placing an order.**

Extend the program so that when a customer places their order from the menu you enter each item code and the quantity. When the order is completely entered, a unique order code is generated. Display the order ensuring that the unique order code, menu items and quantities are shown, along with the item prices and the total cost of the order. Set up arrays for the day to store the unique order code and the total cost of each order.

**TASK 3 – Calculating daily takings and profit.**

10% of the takings are profit. Extend the program to display the total daily takings and profit. Modify your program to allow you to enter the percentage of the takings that are profit. Output the total daily takings, the profit and the percentage used in the calculation.

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