Cambridge IGCSE™(9–1)

COMPUTER SCIENCE **0984/21**

Paper 2 Problem-solving and Programming May/June 2020

PRE-RELEASE MATERIAL

No additional materials are needed.

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

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

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Your preparation for the examination should include attempting the following practical tasks by **writing and testing a program or programs**.

A shop sells a range of mobile devices, SIM cards and accessories as shown in the table:

Category	Item code	Description	Price ($)
Phone	BPCM	Compact	29.99
Phone	BPSH	Clam Shell	49.99
Phone	RPSS	RoboPhone – 5-inch screen and 64 GB memory	199.99
Phone	RPLL	RoboPhone – 6-inch screen and 256 GB memory	499.99
Phone	YPLS	Y-Phone Standard – 6-inch screen and 64 GB memory	549.99
Phone	YPLL	Y-Phone Deluxe – 6-inch screen and 256 GB memory	649.99
Tablet	RTMS	RoboTab – 8-inch screen and 64 GB memory	149.99
Tablet	RTLM	RoboTab – 10-inch screen and 128 GB memory	299.99
Tablet	YTLM	Y-Tab Standard – 10-inch screen and 128 GB memory	499.99
Tablet	YTLL	Y-Tab Deluxe – 10-inch screen and 256 GB memory	599.99
SIM card	SMNO	SIM Free (no SIM card purchased)	0.00
SIM card	SMPG	Pay As You Go (SIM card purchased)	9.99
Case	CSST	Standard	0.00
Case	CSLX	Luxury	50.00
Charger	CGCR	Car	19.99
Charger	CGHM	Home	15.99

Write and test a program or programs for this shop.
- Your program or programs must include appropriate prompts for the entry of data; data must be validated on entry.
- Error messages and other output need to be set out clearly and understandably.
- All arrays, 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 system.
Write a program to:
- use appropriate data structures to store the item code, description and price information for the mobile devices, SIM cards and accessories
- allow the customer to choose a specific phone or tablet
- allow phone customers to choose whether the phone will be SIM Free or Pay As You Go
- allow the customer to choose a standard or luxury case
- allow the customer to choose the chargers required (none, one or both may be purchased)
- calculate the total price of this transaction
- output a list of the items purchased and the total price.

Task 2 – Allow a customer to order multiple mobile devices.
Extend **Task 1** to:
- offer the customer the opportunity to purchase an additional mobile device
- if required, perform bulleted steps 2 to 7 of **Task 1** for each additional mobile device and calculate a running total for the customer
- once no further devices are required, output the total the customer will need to pay.

Task 3 – Offering discounts.
Extend the program to allow a discount of 10% off the price of every additional phone or tablet purchased.
Output the new total the customer will need to pay and the amount of money saved.