www.dynamicpapers.com

Cambridge Assessment International Education

Cambridge O Level

COMPUTER SCIENCE **2210/22**

Paper 2 Problem-solving and Programming **October/November 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.

This document has **2** pages. Blank pages are indicated.

© UCLES 2020

[Turn over

www.dynamicpapers.com

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

An online computer shop sells customised personal computers. Every computer sold includes a basic set of components costing $200 and additional items can be added from the table:

Category	Item code	Description	Price ($)
Case	A1	Compact	75.00
Case	A2	Tower	150.00
RAM	B1	8 GB	79.99
RAM	B2	16 GB	149.99
RAM	B3	32 GB	299.99
Main Hard Disk Drive	C1	1 TB HDD	49.99
Main Hard Disk Drive	C2	2 TB HDD	89.99
Main Hard Disk Drive	C3	4 TB HDD	129.99
Solid State Drive	D1	240 GB SSD	59.99
Solid State Drive	D2	480 GB SSD	119.99
Second Hard Disk Drive	E1	1 TB HDD	49.99
Second Hard Disk Drive	E2	2 TB HDD	89.99
Second Hard Disk Drive	E3	4 TB HDD	129.99
Optical Drive	F1	DVD/Blu-Ray Player	50.00
Optical Drive	F2	DVD/Blu-Ray Re-writer	100.00
Operating System	G1	Standard Version	100.00
Operating System	G2	Professional Version	175.00

As well as the basic set of components every computer must include one case, one RAM and one Main Hard Disk Drive from the table.
A computer is supplied with or without an Operating System.

Write and test a program or programs for the online computer 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 and ordering the main items.
Write a program to:

- use arrays to store the item code, description and price
- allow a customer to choose one case, one RAM and one Main Hard Disk Drive
- calculate the price of the computer using the cost of the chosen items and the basic set of components
- store and output the chosen items and the price of the computer.

Task 2 – Ordering additional items.
Extend TASK 1 to:

- allow a customer to choose whether to purchase any items from the other categories – if so, which item(s)
- update the price of the computer
- store and output the additional items and the new price of the computer.

Task 3 – Offering discounts.
Extend TASK 2 to:

- apply a 5% discount to the price of the computer if the customer has bought only one additional item
- apply a 10% discount to the price of the computer if the customer has bought two or more additional items
- output the amount of money saved and the new price of the computer after the discount.

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.

© UCLES 2020