

CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge Diploma in Computing
Advanced Level

DIPLOMA IN COMPUTING

Module 2: Practical Tasks

5217/01

October/November 2003

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

This document consists of **4** printed pages.

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Local Examinations Syndicate

[Turn over

- 1 A health & social club is equipped with a fitness room, an aerobics studio, squash courts and badminton courts. There is a swimming pool with a steam room and sauna alongside. Weekly classes are available for aerobics, fitness, swimming, squash and badminton. The club also has a café, lounge and bar.

The club wants to seek the opinions of its members about

- the quality of the sports facilities at the club;
- the quality of the social facilities at the club;
- the sports training classes that are offered;
- value for money of the club;
- suggestions for future development.

The club also wants to know

- the age range and gender of the membership;
- the distance that members travel to the club;
- the type of membership, peak or off-peak time.

- (a) A computer is set up in the lounge area for the convenience of members. Construct an on-screen data capture form that will enable members to give their opinions by answering simple questions that appear on the screen. You should provide hard copy evidence of this (a screen shot is acceptable). **[8]**

- (b) A mail-merged letter is to be sent to all members. The letter is to inform members of the new scale of fees. The fees depend on the type of membership and are as follows.

Off peak time monthly subscription	\$25
Peak time monthly subscription	\$45
Off peak time annual subscription	\$250
Peak time annual subscription	\$450

- (i) Create and print a data source of six members to include:
Title, forename, surname, address1, address2, address3, membership number, type of membership, membership renewal date.
You will need to include a full range of data to cover all types of membership. **[5]**
- (ii) Create and print the standard letter showing the merged fields. **[6]**

- (c) Produce a user guide for the club staff, explaining how to produce mail-merged letters. **[6]**

- 2 The **mean** of a group of numbers is calculated by dividing the total of the numbers by how many numbers there are in the group. The maximum and minimum values are also required.

A computer program is to be written which will allow the user to input nine numbers and output the mean, maximum and minimum values of the group.

- (a) Draw a top-down diagram to show how this problem may be broken down. **[9]**
- (b) Write an algorithm for this problem, explaining, where necessary, the variables and the commands that you have used. **[9]**
- (c) Explain clearly what changes you would make to your algorithm if the number of numbers is unknown. **[3]**

- 3 A small company hires out vehicles at a daily rate which differs according to the type of vehicle. The rates are:

Vehicle Type	Daily Rate in \$
A	15
B	22
C	28
D	34
E	48

The company secretary produces invoices for customers. Every invoice contains the following data.

1. Title of customer
2. Name of customer
3. Address of customer
4. Date
5. Invoice number
6. Type of car hired
7. Date of hire
8. Date of return
9. Number of days hired
10. Cost per day
11. Total cost

You have been asked to design and create a computerised system that will help the secretary. All input data will need to be validated. The date should be entered automatically by the software. Data items 9, 10 and 11 should be calculated automatically by the software.

- (a) (i) Create a template for the invoice, showing the functions and formulae used. **[4]**
- (ii) Print out the template, showing the functions and formulae used. **[1]**
- (b) Where appropriate, create a validation check for each of the data items which are to be input, and test that they work.
For each of your validation checks, provide screenshot evidence of
- the validation check being produced;
 - the incorrect data being input;
 - the error message produced. **[9]**