CAMBRIDGE INTERNATIONAL EXAMINATIONS

General Certificate of Education Advanced Subsidiary Level and Advanced Level

COMPUTING

PAPER 2

9691/2

MAY/JUNE SESSION 2002

Additional materials:
Answer paper

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number on your work.

Answer **all** questions.

INFORMATION FOR CANDIDATES

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

You are reminded of the need for good English and clear presentation in your work.

This question paper consists of 4 printed pages.

[Turn Over

UNIVERSITY of CAMBRIDGE
Local Examinations Syndicate

1 In a mathematical experiment, two six-sided dice, each labelled 1, 2, 3, 4, 5 and 6, are thrown a number of times. Each time they are thrown, the numbers on the two dice are added together. At the end of the experiment, a report is made of the number of times each score, from 2 to 12, has occurred. Additionally, the results are reported as a percentage of the total number of throws.

This experiment is to be simulated by using a computer. The number of throws is to be set by the operator.

(a) Draw a Jackson diagram to illustrate how the problem may be broken down. [9]

(b) Write an algorithm to simulate this activity, explaining, where necessary, the variables and the commands that you have used. [7]

2 The teachers at your Centre are to hold an open day for prospective students and their parents. There will be a presentation for the guests, to give them a better idea about the benefits and facilities offered by your Centre.

You have been asked to produce and deliver a presentation, which should last no more than five minutes, using the full range of facilities offered by the software available to you.

(a) Carry out a detailed analysis and design of the problem, and describe how you collected the data necessary for your presentation. [9]

(b) Produce and deliver an interesting and informative presentation that will retain the interest of the audience. [10]

(c) **(i)** Devise a data capture form, which will collect the responses of your audience.

(ii) Use your data capture form to evaluate the effectiveness of your presentation.

(iii) Indicate where and why improvements to your presentation could be made. [7]

3 Twenty students in a science class take five tests during the term. Each test is out of 100 marks. The teacher wants to record the test marks for each student immediately after the test. The teacher also wants to allocate a predicted grade to each student, based on their average test mark gained in the tests so far.

The grade boundaries are as follows:

Grade	Average marks greater than:
G	35
F	40
E	45
D	50
C	60
B	70
A	80

You have been asked to devise a system that will allow the teacher to input the test results as they occur during the term, with projected grade information based on the test results to date.

(a) Decide on the software that you will use and draw up a detailed design of the solution. [5]

(b) Create a strategy for testing the validity and accuracy of data entered in your system. [5]

(c) Implement your chosen design with test data, providing hard copy printouts to demonstrate the successful running of your system. [6]

(d) Evaluate the effectiveness of your design and suggest improvements that could be made. [2]