UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Diploma in Computing
Advanced Level

DIPLOMA IN COMPUTING   **5216**

Module 1

October/November 2005

2 hours

Additional Materials: Answer Booklet/Paper

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams, graphs, music or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

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.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

1 An office worker is responsible for communicating with other businesses and managing the computer systems in the office.

(a) The worker needs to

(i) send letters to customers,

(ii) keep a record of expenditure,

(iii) keep records of customers.

State types of software which would be used for each of these tasks. **[3]**

(b) The worker is also responsible for making backup copies of files and for archiving data.

(i) Explain the difference between backing up and archiving. **[4]**

(ii) Describe a sensible procedure that this worker could adopt for backing up the data files. **[4]**

(c) State a sensible use that the office worker could make of

(i) a hard disk,

(ii) a rewritable CD (CD-RW),

(iii) a CD-ROM. **[3]**

2 (a) Define the following modes of computer system use.

(i) Batch.

(ii) Real-time.

(iii) On-line.

(iv) Off-line. **[4]**

(b) At the end of each day, the workers in a factory send, to the accounts department, the details of the time that they have been at work. They are paid at the end of each week.

Choose two of the modes of use in part **(a)** which would be sensible to use in this example. Justify your answers. **[4]**

3 Describe each of the following types of user interface and give an example of an application where it might be used.

    (i) Form based. **[3]**

    (ii) Menu based. **[3]**

    (iii) Command line. **[3]**

4 (a) When software is written, the code will probably contain errors.
Describe **three** methods or tools available for identifying program errors. **[6]**

    (b) Describe **two** methods of making the code of a piece of software more understandable to other programmers. **[4]**

5 (a) Errors can occur when data is transmitted from one device to another. Explain how a checksum can be used to monitor a transmission for errors. **[3]**

    (b) Data is transmitted from one computer to another by using packet switching.

        (i) Explain how packet switching works. **[3]**

        (ii) Give **one** advantage and **one** disadvantage of using packet switching rather than circuit switching. **[2]**

6 Explain the purpose of

    (i) the control unit, **[2]**

    (ii) the memory unit, **[2]**

    (iii) the arithmetic/logic unit (ALU) **[2]**

    in a computer.

The following questions refer to this information.

A manufacturing process in a company is manually controlled. The company employs a systems analyst to plan the introduction of a computerised control system.

7 The systems analyst will need to analyse the requirements of the new system.

  (a) What decisions will need to be made by the analyst about the data in the new system? **[4]**

  (b) Describe **two** restrictions which the analyst will need to consider. **[4]**

8 Discuss the effects that a computerised system will have on the staff. **[5]**

The system to control the production line is implemented. It is controlled from an operations room.

9 Describe **three** ways in which information could be presented to the operator. **[6]**

10 (a) State **two** factors which should be considered when designing the software interface for use in the control room. **[2]**

  (b) The main form of output from the system to the operator is via a monitor screen. Describe **two** important features which the designer must bear in mind when designing the output screen. **[4]**

11 (a) Explain how some of the features of computer aided design (CAD) software are useful to an engineer when designing and testing a new product for manufacture. **[4]**

  (b) Explain why generic applications software is not appropriate for controlling the production line. **[2]**

12 A management information system (MIS) is used to provide information from the production line. Using an example of the type of information provided, state what is meant by

  (i) condition driven,

  (ii) strategic level

  information. **[4]**