MARK SCHEME for the November 2005 question paper

0418 INFORMATION TECHNOLOGY

0418/02   Written Paper 2   maximum raw mark 80

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

The minimum marks in these components needed for various grades were previously published with these mark schemes, but are now instead included in the Report on the Examination for this session.

* CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the November 2005 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

1 speaker
printer
1 mark each **[2]**

2 magnetic stripe
keypad
1 mark each **[2]**

3 CD ROM
RAM
1 mark each **[2]**

4 a flowchart **[1]**
data logging **[1]**
hacking **[1]**
encryption **[1]**

5 Goods can be automatically re-ordered **[1]**
It is easier to see what is selling well **[1]**

6 **(a)** Observation **[1]**
Collecting documents **[1]**

    (b) three from:
Easier to find details of books
Quicker to process sales
Easier to keep records of stock (easier to amend/add/insert/delete records)
Easier to see trends
Re-order automatically
Saves space **[3]**

    (c) **(i)** ISBN **[1]**
        (ii) it is unique to each book **[1]**

7 TRUE **[1]**
FALSE **[1]**
FALSE **[1]**
TRUE **[1]**

8 **(a)** Borrower number/ ISBN **[1]**

    (b) direct/random access **[1]**

    (c) Borrowers number – length check **[1]**
is length of borrowers number greater than 6 **[1]**
ISBN – check digit **[1]**
A calculation is performed on digits to get last digit **[1]**

    (d) Bar code/magnetic stripe/smart card (reader) **[1]**

    (e) faster data entry **[1]**
less likelihood of errors/no human errors **[1]**

9   **(a)**   three from:
       Safety reasons/hazards
       Cheaper than a human over a long period/will not need paying
       Will not take breaks/can operate continuously
       Will work at a consistent rate
       Consistent quality/fewer mistakes/greater accuracy
       Will not go on strike
       Can lift heavy loads   **[3]**

   (b)   two from:
       need for re-training
       safer/cleaner environment
       less noise   **[2]**

10   A computerised burglar alarm system   **[1]**
     Paying for goods using EFTPOS   **[1]**

11   **(a)**   three from:
       design data capture forms
       design screen layouts/screen input form
       design report (layouts)/screen displays
       design validation routines
       design data/file structures
       design queries   **[3]**

   (b)   abnormal data   **[1]**
       normal data/acceptable data/valid data   **[1]**
       extreme data/on the edge of acceptability   **[1]**

   (c)   parallel running/implementation
       you have a back up
       direct changeover
       quicker/saves money in wages
       phased
       can iron out any problems before going over wholesale to new system
       any method is 1 mark (max two methods)
       any valid reason is 1 mark (max 2 reasons)
       pilot
       can iron out any problems before going over wholesale to new system
             [4]

   (d)   **(i)**   user documentation   **[1]**

         (ii)   two from:
            How to load software/run software
            How to save a file
            Screen layouts
            Print formats
            How to search
            How to sort
            How to print
            How to add records
            How to delete/edit records
            Hardware requirements
            Software requirements
            Sample runs
            Troubleshooting guide.   **[2]**

     (iii) technical documentation   **[1]**

     (iv) two from:
       Program listing
       Flowchart/algorithm
       List of variables
       File structure
       Purpose of the system
       Purpose of the program
       Screen layouts (only if not mentioned in user documentation)
       Print formats (only if not mentioned in user documentation)
       Hardware requirements (only if not mentioned in user documentation)
       Software requirements (only if not mentioned in user documentation)
       Sample runs (only if not mentioned in user documentation)   **[2]**

12   two from:
   more compact/more data can be stored on 1 CD than 1 floppy/can store video/music files on CD Roms
   cheaper to produce 1 CD than several floppy discs
   can not delete data
   not every machine has a floppy drive   **[2]**

13 **(a)** Name of a system (medical diagnosis/mineral prospecting(exploration)/car fault
      diagnosis/tax/advice/chess games/plant identification/animal identification)   **[1]**
      good description   **[1]**

    (b) three from:
      knowledge base
      rules (base)
      inference engine
      (interactive) input screen
      (detailed) output format   **[3]**

14   two from:
   magnetic stripe (reader)
   bar code (reader)
   touch screen
   electronic scales   **[2]**

15 **(a)** three from:
      transfer money from account to account
      make bill payments/pay bills
      make/alter standing order
      order cheque book
      request new PIN
      view balance/print statement
      request loan
      close account/open new account   **[3]**

    (b) change PIN/withdraw money/deposit money   **[1]**

(c) four points or two with examples from:
can manage their finances more easily
do not have to waste time travelling long distances to banks
do not have to spend money on traveling expenses travelling long distances to bank
no embarrassment of having to ask for loans face to face
can bank when banks are closed
lose personal touch
less opportunity for socialising with friends/neighbours
more expensive phone bills
lack of exercise
disabled people do not have to leave their home.
can not withdraw cash
need a computer/Internet connection/electricity
lower bank costs/fewer staff/fewer branches
must be at least one advantage and disadvantage to gain FULL marks **[4]**

16 two from:
faster to arrive/to be delivered
phone call is cheaper than a stamp
you do not have to leave your house to send e-mail
email can be read from any location
replies to e-mails can be quicker
easier (cheaper, quicker) to send same message to many people **[2]**

17 (a) three from:
columns
rows
copying down/replication
automatic recalculation
formulas
functions
graphs
sort
filters
workbook/worksheet
cells can be formatted in particular ways **[3]**

18 three from:
the ease of use of the solution
the appropriateness of the solution
compare the solution with the original task requirements
identify any limitations
identify any improvements which can be made to the system
evaluating the users' responses to the results of testing the system **[3]**