**INFORMATION AND COMMUNICATION TECHNOLOGY A**
FOUNDATION TIER (2357F)
PAPER 1

**1094**

**Specimen Paper 2002**

Additional materials:
Candidates answer on the question paper.

**TIME** 1 hour

| Candidate Name | Centre Number | Candidate Number |
|----------------|---------------|------------------|
|                |               |                  |

**INSTRUCTIONS TO CANDIDATES**

- Write your name in the space above.
- Write your Centre number and Candidate number in the boxes above.
- Answer all the questions.
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.

**INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is 60.
- You will be awarded marks for the quality of written communication where an answer requires a piece of extended writing.

**1** Name the objects A,B,C,D and E, using words from the list.

A 

B 

C 

D 

E 
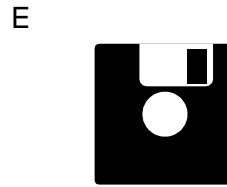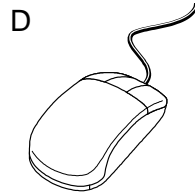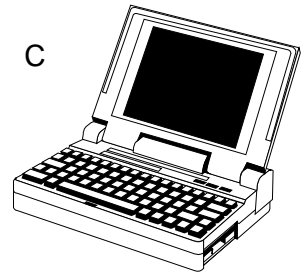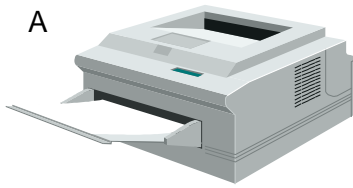
| | | |
|---|---|---|
| **plotter** | **joystick** | **video** |
| **mainframe computer** | **mouse** | **floppy disk** |
| **laptop computer** | **keyboard** | **CD-ROM** |
| **printer** | **graphics tablet** | **CD-ROM drive** |

A _____

B _____

C _____

D _____

E _____

[5]

**2** Ring **two** items which contain personal data.

| | | |
|---|---|---|
| **keyboard** | **pupil record** | **driving licence** |
| **car park ticket** | **floor turtle** | **scanner** |

[2]

**3** Ring **two** changes caused by the introduction of video recorders in the home.

   **The quality of the TV programmes has improved.**

   **People can decide when they want to watch a TV programme.**

   **People have more leisure time.**

   **More home video recordings are made.**

   **More channels are available by satellite and cable television.**

   **Television screens have become larger.**

   [2]

**4** Give **one** way computers may be useful to pupils in a science lesson.

   _____

   _____

   [1]

**5** Tick whether the following statements are **TRUE** or **FALSE**.

| | TRUE | FALSE |
|---|---|---|
| A CD-ROM can store more data than a floppy disk. | | |
| A modem is used to communicate using the telephone system. | | |
| DTP packages are used to create newspapers. | | |
| A midi system is used to store data when printing to a slow printer. | | |
| Floppy disks must be formatted before they are used. | | |

   [5]

**6** Write down **two** problems which can be caused by pupils having access to other pupils' computer files.

   Problem 1_____

   _____

   Problem 2_____

   _____

   [2]

**7** You keep a database of your friends' names, addresses and dates of birth etc. Write down **two** ways in which this information might be used.

Way 1 _____

_____

Way 2 _____

_____

[2]

**8** A school stores information about pupils who have left the school. Write down **one** way in which the school might use this information.

_____

_____

[1]

**9** A school secretary sits in front of a computer all day. Give **two** pieces of advice which should help prevent medical problems.

Advice 1 _____

_____

Advice 2 _____

_____

[2]

**10** A floor turtle can use the following instructions.

| FORWARD *n* | Move *n* cm forward |
|---|---|
| BACKWARD *n* | Move *n* cm backward |
| LEFT *t* | Turn left *t* degrees |
| RIGHT *t* | Turn right *t* degrees |
| PEN UP | Lift the pen off the paper |
| PEN DOWN | Place the pen on the paper |

Write a set of instructions which makes the turtle draw the following shape.
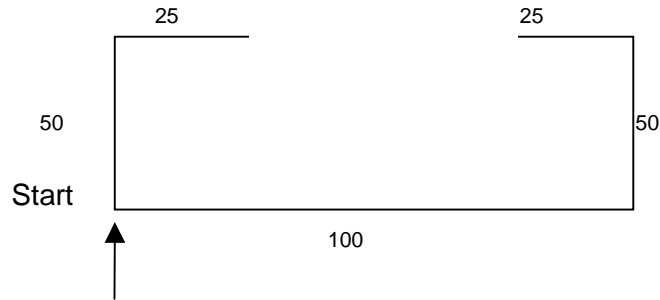


[4]

**11** For each of the following state **one** way the package could be used during the production of a school play.

Spreadsheet package

_____

_____

Data handling package

_____

_____

[2]

**12** Describe **two** ways in which software companies try to prevent illegal copying of their disks.

Way 1 _____

_____

Way 2 _____

_____

[2]

**13**   A spreadsheet is used to process data about the number of cars using two car parks over a year.

|    | A | B | C | D |
|----|----------|-----------|-----------|----------------------|
| 1  | Month | Car park A | Car Park B | Most popular car park |
| 2  |  |  |  |  |
| 3  | January | 120 | 145 | =if ( B3>C3 , "A" , "B" ) |
| 4  | February | 140 | 135 |  |
| 5  | March | 174 | 201 |  |
| 6  | April | 134 | 120 |  |
| 7  | May | 167 | 130 |  |
| 8  | June | 278 | 290 |  |
| 9  | July | 290 | 315 |  |
| 10 | August | 312 | 289 |  |
| 11 | September | 216 | 290 |  |
| 12 | October | 213 | 278 |  |
| 13 | November | 126 | 178 |  |
| 14 | December | 78 | 98 |  |

**(a)**   Cell D3 shows how the most popular car park for January is calculated.  After typing the formula in D3, describe a quick way of putting similar formula into D4 to D14.

 

 

 

 

 

[2]

**(b)**   Describe how a chart or graph is created to show the use of the car parks over a period of one year.

 

 

 

 

[2]

**(c) (i)** Give **one** different situation which can be modelled using a computer.

_____

[1]

**(ii)** Give **two** reasons why a computer model would be useful in this case.

Reason 1 _____

_____

Reason 2 _____

_____

[2]

**14 (a)** Give **one** situation where automatic data logging equipment could be used to record data over a long period of time.

_____

[1]

**(b)** Give **one** reason why automatic data logging equipment should be used to record data over a long period of time?

_____

_____

[1]

**15 (a)** What is a computer virus?

_____

_____

_____

[2]

**(b)** Write down **two** ways in which you could prevent a computer virus affecting your machine.

Way 1 _____

_____

Way 2 _____

_____

[2]

**16** A school is going to buy a number of laptop computers for pupils to borrow and use at home.

Give **two** problems that this may cause.

Problem 1 _____

_____

Problem 2 _____

_____

[2]

**17** A small buggy connected to a computer is placed in a maze. The buggy will travel through the maze and learn the correct path. State **one** sensor which should be attached to the buggy and describe how it would detect an obstacle.

Sensor _____

Detection _____

_____

_____

[2]

**18** A school secretary uses a computer all day.  What **two** pieces of advice would you give to prevent the secretary having medical problems through the use of the computer?  Give a reason for each piece of advice.

Advice _____

_____

Reason _____

_____

Advice _____

_____

Reason _____

_____

[4]

**19** A school needs to convert a classroom into an Information Technology room containing 20 computers.

**(a)** What factors should be taken into account when choosing a suitable classroom?

_____

_____

_____

_____

[2]

**(b)** Cost will be one factor in choosing the type of computers to buy.  What other factors should be considered?

_____

_____

_____

_____

_____

[2]

**(c)** Give **one** way the introduction of the new computer system will affect the staff and pupils.

[1]

**20** **(a)** Give **two** advantages of using an encyclopædia stored on CD-ROM rather than as a book.

Reason 1

Reason 2

[2]

**(b)** Give **two** reasons why it is preferable to use the book.

Reason 1

Reason 2

[2]

**TOTAL MARK** **60**

**Oxford Cambridge and RSA Examinations**

**General Certificate of Secondary Education**

**INFORMATION AND COMMUNICATION TECHNOLOGY A**
FOUNDATION TIER (2357F)
PAPER 1
MARK SCHEME

**1094**

**Specimen Paper 2002**

Where there is only one answer given this is the only answer available.

Where a candidate has to choose a number of answers from a given list there should be no more answers than that asked for in the question. If a candidate gives more answers than asked for then every answer over the specified number cancels out one of the correct answers - if there are any.

No trade names are to given credit unless accompanied by a description of what they do eg 'MS Word' would gain no credit but 'the word processor MS Word' would.

**1**     A     printer 1
          B     CD-ROM     1
          C     laptop computer     1
          D     mouse 1
          E     floppy disk     1

**2**     pupil record     1
          driving licence 1

**3**     People can decide when they want to watch a TV program.1
          More home video recordings are made.     1

**4**     One from:
          Printing reports
          Producing graphs
          Looking up information
          Collecting data
          Writing reports
          Simulating experiments
          Modelling
          Searching for data
          Any other suitable use.     1

**5**     TRUE     1
          TRUE     1
          TRUE     1
          FALSE     1
          TRUE     1

**6** Two from:
Data can be changed
Sensitive data can be looked at - medical
Data can be deleted
Data can be copied
Data can be corrupted with a virus
Any other suitable answer    2

**7** Two from:
To print out address labels for birthday cards.
As an address book.
As a telephone directory.
Not same answer twice
Any other suitable answer.    2

**8** One from:
Names and addresses for mailshots
Dates of birth to send to appropriate age groups.
Mail shots to people who have been involved in particular sports or events.
To send exam results to candidates.
To send references.
Any other suitable answer    1

**9** Two from:
Eye strain
Sit in an upright chair.
Do not sit at the screen for long periods of time.
Take frequent breaks from the screen.
Rest the hands sensibly to avoid RSI.
Use a filter on the monitor
Correct sitting position
Have regular eye checks
Don't sit too close to monitor
Any other suitable answer.    2

**10** Forward 50
Right 90
Forward 25
Pen Up
Forward 50
Pen Down
Forward 25
Right 90
Forward 50
Right 90
Forward 100

4 marks for complete answer (as above or alternative that works)
3 marks for close answer that does not work
2 marks for reasonable answer which uses some of the instructions
1 mark for 3 consecutive correct instructions    4

**11** Spreadsheet package
One from:
Calculating the cost of the production.
Recording the receipts.        1

Data handling package
One from:
Keeping an inventory of the property.
Names and address of actors
Keeping a list of people to mailshot.  1

Must be the activity.

**12** Two from:
Copy protection to make the disk un-copyable.
Restricting the number of installations from a single disk.
Using a code number from the supplier when the disk is installed.
Reading the serial number of the computer when the software is installed.
Encryption
Any reasonable answer.        2

**13**   **(a)**   Highlight cell D3 to D14          1
Replicate (fill, copy) D3 down to D14 1
Any suitable answer

   **(b)**   Highlight the areas containing the numbers of cars.
Select the type of chart.
Click on the button/select from a menu to create a graph.
Add title/legend/colour etc (1)
Position the graph on the screen.        2

   **(c)**   **(i)**   One from:
Flight simulation
Financial modelling
Bridge construction
Must be modelling - not recording
Any other suitable answer.        1

   **(ii)**   Two from:
To costly to build a physical model.
To time consuming to build a physical model.
Variables can be changed easily to see the effects of any change in input.
Dangerous
Any other suitable answer.        2

**14**   **(a)**   One from:
 Weather station.
Automatic car park.
Monitoring a scientific experiment.
Monitoring traffic.
Temperature
Any suitable answer.  1

**(b)** A suitable reason for using the computer in the given application
such as:
not having to remember to take the readings.
automatic
more accurate readings.　　1

**15**　**(a)**　A piece of software/file which corrupts other software/computer　　1
It can be passed from one computer to another computer　　1

　　**(b)**　Two from:
Use a virus scanner.
Software in the computer which checks every disk placed in the drive.
Running a virus checking program which checks every file on the disk.
Do not allow others to place disks in the disk drive.
Write protect floppy disks.
Any other suitable answer.　　2

**16**　Two from:
Pupils may damage the computer (physical/software).
Pupils may lose the computer/stealing.
Pupils may introduce viruses.
Pupils could delete other pupils work.
Pupils could use them for games and not for work.
Pupils may not have a printer to print their work.
Sharing
Training students.
Deleting software.
No handwriting answers.
Any other suitable answer　　2

**17**　One pair from
Switch　　　　contact
Optical　　　　reflection of light
Sound　　　　reflection of sound
Not heat sensor　　　2

**18**　Two from:
Lighting
Ergonomic Keyboard
Radiation
Use the correct chair to avoid back problems.
Take regular breaks to avoid eye strain.
Position the keyboard with an arm rest to prevent injury to the wrist.
Any other suitable answer
1 mark for advice.　1 mark for reason.　　　4

**19** **(a)** Two from:
Size of the room.
Location of the room.
How difficult is it to re-position the staff using the room.
Electricity supply to the room.
Layout of the room.
Can the room be secured?
Any other suitable answer.    2

**(b)** Two from:
Compatibility of the computers with the other computers in the school.
Is all the required software available for the computers.
How much re-training will be needed if the system is different to what
is already in the school?
What maintenance agreements are available on the different computer systems.
Robustness
On-going cost.
Maintenance agreement.
Any other suitable answer.    2

**(c)** One from:
Training of staff/pupils.
Re-organisation of the timetable.
Upheaval during installation.
Any other suitable answer.    1

**20** **(a)** Two from:
Quicker to get the information you want
Search facilities.
Save pictures to other applications
Selectively save text to other applications
Video
Large sound files
Cost of updates
Any other suitable answer    2

**(b)** Two from:
No computer available
Can be read without needing a computer system
Religious beliefs
Not cost
Any other suitable answer    2

**TOTAL MARK    60**

# Assessment Grid Paper 1 (Foundation)

| Question Number | AO1 | A02 | AO3 | AO4 | AO5 | Grade |
|---|---|---|---|---|---|---|
| 1 | 1.1/1.2/1.3 [5] | | | | | G |
| 2 | | | | 1.3 [2] | | G |
| 3 | | | | 1.6 [2] | | G |
| 4 | | | 2.1/2.2/2.3/2.4 [1] | | | G |
| 5 | 1.1/2.1 [5] | | | | | F |
| 6 | | | | | 1.3 [2] | F |
| 7 | | | 2.3 [2] | | | F |
| 8 | | | | 2.3 [1] | | F |
| 9 | | | 1.6 [2] | | | E |
| 10 | 2.4 [4] | | | | | E |
| 11 | 2.3 [2] | | | | | E |
| 12 | | | | | 2.5 [2] | E |
| 13a | 2.3 [2] | | | | | D |
| 13b | 2.3 [2] | | | | | D |
| 13c | 2.3 [1] | | | 2.3 [2] | | D |
| 14a | 2.4 [1] | | | | | D |
| 14b | | 2.4 [1] | | | | D |
| 15a | | | | | 1.6 [2] | D |
| 15b | | | | | 1.1 [2] | D |
| 16 | | | | 1.1 [2] | | D |
| 17 | 2.4 [2] | | | | | C |
| 18 | | | | | 1.6 [4] | C |
| 19a | | 1.6 [2] | | | | C |
| 19b | | 1.6 [2] | | | | C |
| 19c | | | | 1.6 [1] | | C |
| 20a | | | 1.3 [2] | | | C |
| 20b | | | 1.3 [2] | | | C |