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Mark Scheme with Examiners' Report
IGCSE ICT (4385)

June 2005

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ICT 4385, MARK SCHEME

Paper 1F

1.	(a)	A	VDU or Monitor	1
		B	Printer (accept types of printer)	1
		C	Mouse	1
		D	Keyboard	1
	(b)	A	Output	1
		B	Output	1
		C	Input	1
		D	Input	1

Total 8 marks

2.	(a)	(i)	Store programs	1
		(ii)	RAM is volatile/temporary store/contents lost when power turned off/ROM is non volatile/contents not lost	1
	(b)		More robust Shock resistant Portable Thinner / lighter Better quality Less glare / reflection (**NOT** radiation, resolution or eyestrain) — **any two**	2

Total 4 marks

3.	Any mention of: Windows, icons, menus and pointers Plus expansion: easy to use/understand, intuitive (1 mark each)	4

Total 4 marks

4.	(a)		Server correctly labelled	1
	(b)	(i)	PC on link stops working	1
			Rest keep going (**only** the PC on link stops = 2)	1
		(ii)	All PCs stop working	2
	(c)		LAN	1
			WAN	1
			WAN	1
			WAN	1

Total 9 marks

5. (a) (i) Pornographic or other unsuitable sites / download virus / purchase goods on-line / non work-related sites eg games, music **1**

(ii) Web Nannies / virus detection software / supervised access **1**
linking solution to 5(a)(i) **1**

(b) (i) Unauthorised access / can be seen entering the password / someone gets the password (**NOT** just security/safety) **1**

(ii) Verification / data entry mistake **1**

(c) C **1**
B **1**
E **1**
D **1**
A **1**

Total 10 marks

6. (a) Hardware : modem / ISDN / router / telephone **OR** router **OR** modem cable / WIFI / NIC **NOT** hub **1**
Software: communication software / browser software (accept named)/driver software for hardware above **1**

(b) Hackers
Credit card number obtained by others
Stolen cards used before stopped } **any two**
Bogus company
2

Total 4 marks

7. (a) Any suitable answer eg keyboard covers / space for drinks **1**

(b) (i) Anti-glare screens
Room lighting
Daylight
Look away from screen } **any two**
Adjust monitor
2

(ii) Adjustable chairs
Tables at correct height } **any two**
Monitor position
2

(iii) Wrist rests
Special keyboards } **any two**
Breaks from data entry
2

NO REPEAT ANSWERS

Total 7 marks

8. (a) Micro switch/ultrasonic/light/laser/proximity/pressure/touch **1**
Suitable detection method eg laser **1**
Answer relates to sensor given eg to measure distance **1**

(b) ADC **1**

Total 4 marks

9. (a) (i) Check by computer **1**
To make sure the data is allowable **OR** an example **1**

(ii) Check with source documents **1**
To ensure data entered is correct **1**
Any double entry method / proof reading = 2 marks

(b) Passwords
Access levels
Encryption
Anti-virus software
Firewalls
One physical method **NOT** usernames
} **any two** **2**

(c) Backup systems (any two different methods)
UPS
Source documents or hardcopy
Data recovery methods
Antivirus
} **any two** **2**

Total 8 marks

10. (a) eg receipt printer
Screen
Keypad
Weighing scales
Card reader
} **any three** **3**

(b) Country of origin
Manufacturer's code
Product code
Check digit
} **any two** **2**

(c) (i) Shorter queues / itemised bills / accurate bills / quicker data entry / variety of payment methods **NOT** for customers' use **1**

(ii) Less crime / increases security
Automated stock order
Up to date sales information / buying patterns
Fewer staff
Fewer errors / more accurate
Quicker with reason
More profit with reason
Easier to change product details
No need to price products
} **any two** **2**

Total 8 marks

11. (a) C1 Word/text/alphanumeric **1**
B7 Number **1**
C3 Formula **1**

(b) 40 **1**

(c) D3 + E3 **1**

(d) C / total sales
F / total cost
G / profit
} **any two** **2**

Total 7 marks

12. (a) Scanner **1**
Analogue to digital / easy link to computer **2**
OR
Digital camera
Portable / easy link to computer / can edit pictures / cheaper than film / faster + reason **(any two)**
OR
Mobile phone
Portable / easy link to computer / cheaper than film / faster + reason / can e-mail direct **(any two)**

(b) Takes up less memory because...
Quicker to download because...
Size reduced therefore...
(2 marks for each explained reason)
} many photos in one file eg zip **4**

(c) (i) Removable hard drive/floppy disk (drive)/memory stick/zip disc (drive)/CD-ROM or DVD (drive)/online storage/tape (drive) **1**

(ii) Capacity & portability/easy to store physically/cheap/durable **linked to (i)** **1**

(iii) Loss of data because... **1**
So that data can be retrieved **1**

Total 11 marks

13. (a) People at different sites **1**
Have interactive (sound) and vision/see people **1**
Enabled by telecommunications/link to the Internet/LAN/WAN **1**

(b) Camera / camcorder / web cam
Microphones
Speakers or headphones
Sound card
Large screen
} **any three** **3**

Total 6 marks

14. (a) eg computers respond instantly to changes
Fewer staff so costs reduced / final product is cheaper
Works 24 hrs per day every day
Keep people away from dangerous processes
More accurate / fewer errors
Can store or log data
Can analyse data
More reliable
Can use a range of sensors

any three **3**

NOT speed or calculations

(b) Any use of data collection over period of time/situation described **1**

(c) Related to merged documents
eg computer in control **1**
Word processor for report **1**
Spreadsheet for data logging **1**
Final document produced by merge routine **1**
OR
Using spreadsheet/data logging software
Making graph, chart or table
At regular intervals
Print report

Comparison - **(1 mark)** on either scheme

(d) Laser printer/bubble jet **1**
Quality of print **1**
OR
Dot matrix
Because of large volume output

Total 10 marks

TOTAL FOR PAPER: 100 MARKS

Paper 2H

1. (a) (i) Check by computer **1**
To make sure the data is allowable **OR** an example **1**

(ii) Check with source documents **1**
To ensure data entered is correct **1**
Any double entry method / proof reading = 2 marks

(b) Passwords
Access levels
Encryption
Anti-virus software
Firewalls
One physical method **NOT** usernames
} **any two** **2**

(c) Backup systems (any two different methods)
UPS
Source documents or hardcopy
Data recovery methods
Antivirus
} **any two** **2**

Total 8 marks

2. (a) eg receipt printer
Screen
Keypad
Weighing scales
Card reader
} **any three** **3**

(b) Country of origin
Manufacturer's code
Product code
Check digit
} **any two** **2**

(c) (i) Shorter queues / itemised bills / accurate bills / quicker data entry / variety of payment methods **NOT** for customers' use **1**

(ii) Less crime / increases security
Automated stock order
Up to date sales information / buying patterns
Fewer staff
Fewer errors / more accurate
Quicker with reason
More profit with reason
Easier to change product details
No need to price products
} **any two** **2**

Total 8 marks

3. (a) C1 Word/text/alphanumeric **1**
B7 Number **1**
C3 Formula **1**

(b) 40 **1**

(c) D3 + E3 **1**

(d) C / total sales
F / total cost
G / profit
} any two **2**

Total 7 marks

4. (a) Scanner **1**
Analogue to digital / easy link to computer **2**
OR
Digital camera
Portable / easy link to computer / can edit pictures / cheaper than film / faster + reason **(any two)**
OR
Mobile phone
Portable / easy link to computer / cheaper than film / faster + reason / can e-mail direct (any two)

(b) Takes up less memory because...
Quicker to download because...
Size reduced therefore...
(2 marks for each explained reason)
} many photos in one file eg zip **4**

(c) (i) Removable hard drive/floppy disk (drive)/memory stick/zip disc (drive)/CD-ROM or DVD (drive)/online storage/tape (drive) **1**

(ii) Capacity & portability/easy to store physically/cheap/durable **linked to (i)** **1**

(iii) Loss of data because... **1**
So that data can be retrieved **1**

Total 11 marks

5. (a) People at different sites **1**
Have interactive (sound) and vision/see people **1**
Enabled by telecommunications/link to the Internet/LAN/WAN **1**

(b) Camera / camcorder / web cam
Microphones
Speakers or headphones
Sound card
Large screen
} any three **3**

Total 6 marks

6. (a) eg computers respond instantly to changes
Fewer staff so costs reduced / final product is cheaper
Works 24 hrs per day every day
Keep people away from dangerous processes
More accurate / fewer errors
Can store or log data
Can analyse data
More reliable
Can use a range of sensors

any three **3**

NOT speed or calculations

(b) Any use of data collection over period of time/situation described **1**

(c) Related to merged documents
eg computer in control **1**
Word processor for report **1**
Spreadsheet for data logging **1**
Final document produced by merge routine **1**
OR
Using spreadsheet/data logging software
Making graph, chart or table
At regular intervals
Print report

Comparison - **(1 mark)** on either scheme

(d) Laser printer/bubble jet **1**
Quality of print **1**
OR
Dot matrix
Because of large volume output

Total 10 marks

7. **Must be CPU related.**
Marks can be awarded from role or example
(i) Control Unit - co-ordinate input/output **1+1**
(ii) ALU - calculation/logical decisions **1+1**
(iii) IAS/memory control storage for data and programs **1+1**

Total 6 marks

8. (a) (i) Contents of RAM is lost / work lost / RAM is emptied/deleted/wiped **1**

(ii) Retained/stays/stored/'nothing happens'/not lost/stays saved **1**

(iii) Store programs/data etc **2**

(b) Zip drives
Jazz drives
Tape drives
Memory sticks
CDROM-RW
Hard drive
} any two **2**

(c) 1mb = 1,048,576 bytes **1**
1,048,576/1024 = 1024bytes = 1kb **1**
OR
1024 is the nearest power of 2 to a 1000
1Kb is 2 to the power of 10 (nearly)
1024 is approx = 1000

Total 8 marks

9. Any 4 of the following: function **(1 mark)** expansion **(1 mark)**

Application software communicate with hardware - word processing application, print icon
Manage system resources - memory, CPU time, peripherals
Manage data transfer - keyboards, mice etc.
Manage system security - rights to users etc.
Manage files - store and retrieve
Manages error handling - gives error message
Command interpretation - run command, using icons
ALLOW provides user interface + reason

NOT GUI functions

Total 8 marks

10. (a) eg shared resources
Shared hardware
Shared software
Shared data
} any three **3**

(b) Server clearly identified **1**

(c) Different capacity **1**
Because more traffic/faster data transfer **1**

(d) Star network has greater fault tolerance than Bus
Star network more reliable than Bus
Breaking one cable the others still work
Faster data transfer
(or other good reason)
} any two **2**

Total 8 marks

11. (a) eg routers
Bridges
Computers (gateway) } **any two** **2**

(b) (i) eg sending viruses/spam/hacking/offensive messages **2**

(ii) Answer must be linked to (i) **2**

Total 6 marks

12. (a) eg RSI
Backache
Eyestrain/stress } **any three** **3**

(b) Wrist supports to prevent RSI
Adjustable chairs to prevent backache
Anti-glare screens to prevent eyestrain
Regular breaks away from VDU to prevent eyestrain/RSI/stress/headache
Heat, humidity and radiation emissions kept at low levels to prevent headaches or reproductive hazards
Desks at correct height to prevent backache/neck ache
Adjustable document holders provided to prevent unnecessary head movement/eyestrain/headaches
} **any five** **5**

Total 8 marks

13. (a) (i) Ensure system remains stable/operates within limits **1**

(ii) Water level
Temperature control
Valve operations } **any two** **2**

NOT just sensor event linked to sensor

(b) (i) Box on heater line or box on all three **2**
OR Box on sensor(s) line **(1 mark)**
OR Box on valve line (should be D to A) **(1 mark)**

(ii) Sensor produces analogue output processor requires digital information **1**

Total 6 marks

TOTAL FOR PAPER: 100 MARKS

ICT 4385, CHIEF EXAMINER'S REPORT

General comments

This is the first time this qualification has been taken by candidates. The examiners were pleased to see the calibre of the responses given by the majority of candidates. This also relates to the way in which staff at the centres have prepared students for the examination. It was also felt that the examination team had produced the correct balance for this paper.

Paper 1F

Question 1

(a) Generally answered well by most candidates with many candidates gaining full marks.
(b) Good responses and well liked by candidates.

Question 2

(a) Answered reasonably well but some candidates were obviously confused between ROM and CD-ROM and therefore lost marks on this section.
(b) Generally well answered with responses linked to the answer in (a).

Question 3

Poor responses were given by most candidates. GUI appeared to be a topic not liked by candidates.

Question 4

(a) The majority of candidates correctly identified the server.
(b) Good responses were given here showing that candidates had a good working knowledge of network systems.
(c) Well answered with very few candidates failing to get marks here.

Questions 5 and 6

All sections were well answered. Candidates were obviously very familiar with the use and pitfalls of the Internet.

Question 7

This proved to be a difficult question for the majority of candidates. Health and safety did not appear to have been a topic with which candidates felt self-assured.

Question 8

Reasonable answers were given by most candidates.
(a) Candidates were able to give suitable sensors but failed to give sensible detection methods.
(b) Not answered by most candidates.

Question 9

(a) Generally answered well by most candidates with many candidates gaining full marks.
(b) Good responses covering a range of methods for protecting data.
(c) Foundation Tier candidates found this section difficult.

Question 10

(a) Poor responses were given by Foundation Tier candidates here.

(b) Candidates did not seem to be familiar with the structure of a bar code.

(c) Many candidates assumed a point-of-sale machine was for the customers' use only. This is not the case and marks were not awarded for these answers.

Question 11

(a) It was obvious that this question was well liked by all candidates. Most candidates gave the full answer and marks were awarded accordingly with most candidates gaining full marks.

Question 12

(a) Candidates were able to identify suitable input devices.

(b) Foundation Tier candidates were not able to give full answers to this section. Most answered with 'takes up less space'. This must be qualified to gain marks eg takes up less space in memory/storage etc.

Question 13

(a) Good responses were made by the majority of students.

(b) Poorly answered. Candidates appeared not to be very familiar with the equipment needed to set up video conferencing.

Question 14

Higher ability candidates responded well to this question in all sections.

Paper 2H

Question 1
(a) This was generally well answered by most candidates with many candidates gaining full marks.
(b) Good responses were given, covering a range of methods for protecting data.
(c) Candidates could only produce one method of backing up systems: generally tapes or rewriteable CD-ROM.

Question 2
(a) Most candidates were able to list point-of-sale equipment and gained full marks for this section.
(b) There were disappointing responses here. Many candidates wrongly assumed the price and description of product were contained on the barcode. Few were able to link the code to data held on a central computer system.
(c) This was answered well. Some candidates gave the same advantages for the customer as for the shoppers. In this case they were only credited for the one response.

Question 3
It was obvious that this question was well liked by all candidates. Most candidates gave the full answer and marks were awarded accordingly.

Question 4
(a) Most candidates named suitable input devices and gave good reasons for their use.
(b) In general, candidates were fully aware of the need to compress pictures before mailing them.
(c) Again candidates gave reasonable responses to this section. In part (ii), few candidates gave portability of the product as a suitable reason for choosing a suitable backup device eg a memory pen has high capacity but it is also very portable etc.

Question 5
(a) Good responses from most candidates to this section.
(b) Poorly answered. Candidates appeared not to be very familiar with the equipment needed to set up video conferencing.

Question 6
Disappointing answers were given in all sections of this question.
(a) Few candidates could give valid reasons for the use of computers in data logging.
(b) Weak answers were given in identifying examples of data logging.
(c) Very few candidates were able to provide suitable answers relating to the display of data produced from a data logging process. The most obvious example would be the sorting of data into a spreadsheet and then producing graphs etc.

Question 7
This proved to be a difficult question for the majority of candidates. Very few were able to describe to the role of the CPU in a computer.

Question 8
The majority of candidates were fully conversant with the uses of RAM and ROM and the use of backing stores for computer systems.

Question 9

Good answers were given by the majority of candidates for a difficult question. Candidates demonstrated their grasp of tasks performed by the operating system and were familiar enough with the topic to give a good example of where the processes would be applied.

Question 10

(a) Most candidates were aware of the advantages to be gained in using networked computers.

(b) The server was easily identified by the majority of candidates.

(c) Many candidates gave good responses here too, demonstrating a grasp of the amount of data passing between the server and its clients.

(d) Too many candidates were under the opinion that a network would fail if a computer breaks down. This is definitely not the case. The only way the network would fail in this case was if the server were to break down, or the network connection was lost on a bus network.

Question 11

(a) Candidates gave reasonable answers here - mostly linked to routers. Few mentioned the use of bridges or computer gateways.

(b) Both parts were well answered. Candidates demonstrated an awareness of the pitfalls attached to the use of the Internet and how to overcome them.

Question 12

Good responses were noted in parts (a) and (b). This section of the syllabus was well covered.

Question 13

There were many disappointing responses to this control problem. Few candidates appeared to be aware of the part feedback played in a control circuit. Where and why the ADC unit should be used also appeared to prove difficult .

Set Tasks and Projects

Set Tasks

A detailed report on the individual tasks will not be released until after November examinations. This section deals with matters of presentation of the work and is applicable to both the 2005 and future papers.

The majority of the work was presented in a satisfactory manner, but the following guidelines may enable some centres to reduce their workload and improve their candidates' marks.

- The Set Tasks should not be bound together with the projects. They may be allocated to different markers and removing the Tasks could damage some of the candidates' work.
- Set Tasks do not need to be bound. Markers need to be able to compare sheets eg designs and finished work. This is more difficult if the sheets cannot be put next to each other. Loose sheets, correctly labelled, in a plastic pocket will usually be sufficient. Treasury tags could also be used. When centres do staple or bind the Tasks, care should be taken not to obscure or damage the candidates' work.
- All pieces of work should be clearly labelled with the candidate's name, candidate's number and Task identification. This last point is perhaps the most important as it can be difficult to work out which Task the candidate thinks they are doing, especially if they do not submit all of the Tasks and/or they submit the work out of Task order.
- No extra pieces of work should be submitted eg if a Task specifies one sheet for a design, submitting two sheets will lose the candidate 1 of the 4 marks available for presentation/relevance of submitted material.
- Printouts should be on single sheets of paper. If a candidate submits a report which requires two or three sheets, they are wasting ink, paper and postage and are usually demonstrating an inability to format their report as anything but default.
- Everything that the candidate thinks will gain them a mark should be annotated or explained. Markers do try and find all of the marking points, but some candidates often present their work in the most muddled and obscure way possible.
- The correct sequence should be to design it first, make it afterwards, not the other way round. Reverse engineering the Tasks usually results in lower marks.

Projects

The majority of the work was presented in a satisfactory manner, but the following guidelines may enable some centres to improve their candidates' marks.

- Projects should have cover sheets, clearly labelled with a minimum of the candidate's name, candidate's number and centre number.
- Projects should be bound. Spiral binding or secure stapling will usually suffice. Ring or lever arch binders should be avoided as they frequently break in transit.
- Each project should have a contents page and matching page numbering. The numbers could be written in by hand when the project is finished.
- Projects should be presented in a logical order, preferably Identity, Analyse, Design, Implement and Evaluate.
- Dumps of Access code should be strongly discouraged; they add nothing to a project except printing and postage costs.

It was obvious that a number of candidates had submitted O level style projects for the IGCSE. There is no restriction on the same project being used for O Level, but some candidates should be made aware that the marking criteria for the two specifications have some significant differences. A substantial rewrite would be needed to change from one to the other.
It was also obvious that a number of candidates had submitted adaptations of one of the Set Tasks as projects. This is not advised, as the Set Tasks consist of three or four separate pieces of work done on different pieces of software. No single task is likely to have sufficient background or complexity of content to enable it to be used as a project. Candidates who tried to use a Set Task tended to score low marks.

Identify
Most candidates were able to identify a suitable project, but it was clear in many cases that they had pre-decided the solution and had all too frequently made the application first. Candidates who reverse engineered their project in this way tended to do less well than they might have, due to them leaving out much of the analysis and design.

Analyse
This section tended to be too weak. Many candidates could show that they had a reasonable idea of what they were doing but were unable to explain clearly the processing or data flow.
Examples of raw detail were very rare. Data collection, manipulation and processing were often only dealt with in terms of data already in the computer.
Alternative outputs were frequently dealt with in terms of alternative software, something which should already have been discussed in Identify.

Design
The correct sequence here should be Initial Design, User Comments, Final Design. The majority of candidates only did a final design or no design at all. Designs should ideally be in the form of annotated sketches, not printouts from the finished application.
A test plan should also be designed in this section, with reasons for the tests, test data and expected results. Far too many candidates ignored testing at this stage and simply included some tests with their implementation.

Implement
The emphasis here should be on evidence. Extension marks are decided in Implement. If a candidate is unable to give clear evidence that they have done the extension work mentioned in their Analyse and Design, the project is graded as Standard. Evidence is also essential in the testing. It is not enough to produce a set of tests and then claim to have done them; evidence must be given, usually in the form of annotated printouts or screen shots. Finally, candidates must produce evidence that they followed their design and produced a solution to the original problem. Once again, annotated screen shots are almost essential.

Evaluate
Most candidates managed reasonably in this section, but as with Implement, evidence was usually missing, meaning that top marks were not being achieved.

ICT 4385, GRADE BOUNDARIES

	A*	A	B	C	D	E	F	G
Foundation Tier				59	51	43	36	29
Higher Tier	78	68	58	49	40	35		

Note: Grade boundaries may vary from year to year and from subject to subject, depending on the demands of the question paper.

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Edexcel International Publications, Adamsway, Mansfield, Notts, NG18 4FN, UK
Telephone: +44 (0) 1623 450 781
Fax: +44 (0) 1623 450 481
Email: intpublications@linneydirect.com

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or visit www.edexcel-international.org
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Registered Office: 190 High Holborn, London WC1V 7BH,UK