

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
International General Certificate of Secondary Education

## **MARK SCHEME FOR the June 2002 question papers**

### **0420, 0421, 7010 COMPUTER STUDIES**

**0420, 0421, 7010/1** Paper 1, maximum raw mark 100

These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do 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*.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the June 2002 question papers for most IGCSE and GCE Advanced (A) and Advanced Subsidiary (AS) Level syllabuses.

**JUNE 2002**

**INTERNATIONAL GCSE**

**MARK SCHEME**

0420/1, 0421/1, 7010/1

**SYLLABUS/COMPONENT : 0420/1, 0421/1, 7010/1**

**COMPUTER STUDIES**

Page 1 of 9	Mark Scheme	Syllabus	Paper
	IGCSE Examinations - June 2002	0420, 0421, 7010	1

### Computer Studies 0420/0421/7010 Paper 1 June 2002 Mark Scheme

- 1 Generally, one mark for each valid point. Two examples gain two marks.
- (a) *multimedia*  
software that combines more than one medium  
e.g. sound, graphics, video, used in presentations [2]
- (b) *array*  
set of storage locations  
referenced by a single identifier,  
e.g. FRED(20), SAM(3,5) [2]
- (c) *de-skilling*  
skilled/semi-skilled labour  
replaced by microprocessor controlled systems  
e.g. manufacturing [2]
- (d) *expert system*  
program  
behaves in the same way as a human expert  
e.g. medical diagnosis, oil refining [2]
- (e) *verification*  
checking data at the input stage  
by comparing copies  
e.g. repeating the keyboard operations [2]
- 2 Any two from eg  
Digital images from scanner and printed  
Imported into DTP software  
Scanning by OCR and converted into text [2]

Page 2 of 9	Mark Scheme	Syllabus	Paper
	IGCSE Examinations - June 2002	0420, 0421, 7010	1

**Computer Studies 0420/0421/7010 Paper 1 June 2002 Mark Scheme**

- 3 (a) Two advantages from e.g.  
no need for paperwork  
no delay connected with paperwork  
no clearing process  
no need for cheques/cash [2]

- (b) Two disadvantages from e.g.  
money withdrawn straight away so loss of interest  
debit card details may be obtained illegally/card fraud  
criminals may monitor transactions/hacking can occur  
more money spent on security [2]

- 4 (a) Two advantages from e.g.  
H L instructions similar to English  
H L are easy to understand  
easy to correct errors/test  
problem orientated  
portable [2]

- (b) Compiler converts whole program to object code in one go/with all errors reported [1]  
Interpreter converts each instruction then carries it out/until first error [1]

Page 3 of 9	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE Examinations - June 2002</b>	<b>0420, 0421, 7010</b>	<b>1</b>

**Computer Studies 0420/0421/7010 Paper 1 June 2002 Mark Scheme**

- 5 (a) Any three from eg.
- |                                     |                            |
|-------------------------------------|----------------------------|
| handles job control                 | file management            |
| input control                       | spooling                   |
| output control                      | multitasking               |
| handle interrupts                   | utility tasks              |
| load files/software / runs software | checking passwords / codes |
| error reports                       | interface                  |
| log use                             |                            |
| accounting                          |                            |
| batch processing                    |                            |
| memory management                   |                            |
- [3]
- (b) Any two from eg
- re run old master file with old transaction file
  - load backup copies
  - follow disaster recovery plan
- [2]
- 6 (a) For each part any one from
- (i) temperature sensor, humidity sensor
  - (ii) heater, cooler/fan, humidifier
- [2]
- (b) Any two from
- Compare against pre-set values
  - output signals make changes to conditions in museum
  - which affect input signals
- [2]
- (c) correct conditions are constantly maintained/works 24 hrs a day
- no need to worry about items in museum deteriorating
  - no need to employ anybody
- [1]

Page 4 of 9	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE Examinations - June 2002</b>	<b>0420, 0421, 7010</b>	<b>1</b>

**Computer Studies 0420/0421/7010 Paper 1 June 2002 Mark Scheme**

- 7 (a) Any **two** ways from e.g.  
 put continent lines/contours on  
 decode  
 animated pictures of temperature variation  
 animated pictures of cloud movement  
 addition of colours on images  
 sharpen the image [2]
- (b) Any **two** from e.g.  
 more complete picture of the weather is obtained  
 amount of cloud cover can be calculated  
 can predict weather if wind direction is known  
 no need to install similar equipment at sites on earth  
 can see storms and hurricane movement faster  
 can see storms and hurricane movement over a wider area [2]
- 8 (a) Award one mark **each** for correct line  
 Down 40  
 Right 90  
 Backward 20 [3]
- (b) Award one mark **each** correct line in correct position  
 Initialise counter  
 loop  
 call procedure  
 stop condition [3]

Page 5 of 9	Mark Scheme	Syllabus	Paper
	IGCSE Examinations - June 2002	0420, 0421, 7010	1

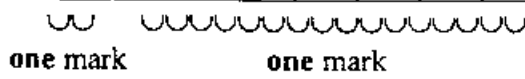
Computer Studies 0420/0421/7010 Paper 1 June 2002 Mark Scheme

- 9 (a) 

0							
---	--	--	--	--	--	--	--

 [1]
- (b) 

1	0	0				1	1
---	---	---	--	--	--	---	---

  

  
one mark                      one mark [2]
- (c) Electrical interference [1]
- 10 (a) Award one mark each part  
(i) label --- one cell from A2:A6 or B1:E1  
(ii) number --- one cell from B2:C6 [2]
- (b)  $(B2+C2)/2$ , or SUM(B2+C2)/2 or AVG(B2:C2) [1]
- (c) One mark per point  
highlight D2  
description of 'copy / replicate'  
or 'click and drag' [2]
- (d) One mark per point  
highlight B2:B6, or A2:E6, or placing cursor in B column  
click on sort icon in the tool bar, and choose descending [2]
- (e) A1:D6 award one mark only  
A1:A6 and D1:D6 award two marks [2]





Page 7 of 9	Mark Scheme	Syllabus	Paper
	IGCSE Examinations - June 2002	0420, 0421, 7010	1

**Computer Studies 0420/0421/7010 Paper 1 June 2002 Mark Scheme**

**12 (a) Award one mark each point**

convert digital signals to analogue signals  
to send down the telephone line [2]

**(b) Award one mark each point**

check user ID  
check password  
check voice print  
check electronic signature [2]

**(c) Any three from**

news  
on-line shopping  
finance  
down loading software [3]

**(d) Award one mark each point**

correct description of what the Internet does  
1000's of computer networks linked together world wide  
Data on any one network is accessible by a computer on  
any other network [2]

**13 (a) One mark per point:**

fact finding methods (award one mark for each method stated)  
produce data flow diagrams/descriptions  
existing systems flow charts [3]

**(b) Award one mark each point**

written specially for that purpose/customised  
no extra unwanted features  
quicker to modify/make changes [2]

Page 8 of 9	Mark Scheme	Syllabus	Paper
	IGCSE Examinations - June 2002	0420, 0421, 7010	1

**Computer Studies 0420/0421/7010 Paper 1 June 2002 Mark Scheme**

(c) Any **two** from eg  
 standard/normal  
 extreme  
 abnormal/erroneous [2]

(d) Any **two** from eg  
 description of what part in the system does  
 systems flow charts  
 data flow diagrams  
 screen layouts  
 user interface design  
 test plan [2]

14 (a) Any **one** from  
 blood pressure  
 pulse/heart rate  
 temperature  
 blood sugar level  
 rate of flow [1]

(b) Award one mark **each** point  
 convert to digital  
 input data is compared  
 with pre set limits  
 adjustment [3]

(c) Any **one** from  
 medication/drug  
 graph  
 alarm [1]

