

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

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JUNE 2002

INTERNATIONAL GCSE

MARK SCHEME

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

COMPUTER STUDIES

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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]

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- 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money withdrawn straight away so loss of interest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]

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- 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]

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- 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]

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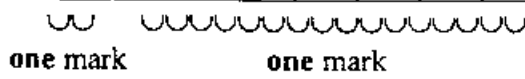
Computer Studies 0420/0421/7010 Paper 1 June 2002 Mark Scheme

- 9 (a)

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

 [1]
- (b)

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


[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]

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- 11 (a) One mark each
 DATA TYPE --- text, text, number, text, number/currency
 FIELD SIZE ---- 6, 2, 2, 8 - 30, 3 - 10 [2]
- (b) Any **two** from
 save storage space
 less errors on input
 faster input [2]
- (c) Any **two** from eg.
 days
 customer reference number
 holiday reference number [2]
- (d) (i)
 BK0042 BK0043 BK0046 BK0050
 ○○○ ○○○○○○○○○○○○○○○○○
one mark **one mark** [2]
- (ii) (NIGHTS > 7) AND (PRICE (\$) ≥ 450)
 .. one mark... ..one mark..... [2]
- (e) Processing-- check on file
 record booking [2]
- Output----- receipt/itinerary
 print booking/ticket details [1]

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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]

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(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]

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

- 15 (a) Any **three** from eg
 processed fairly and lawfully
 processed for limited purposes
 kept no longer than needed
 kept secure
 not transferred to other countries without protection [3]

- (b) Any **two** from eg
 job loss
 blackmail
 not getting a job
 adverse publicity
 struck off [2]

- 16 Award **one** mark for each correct step in the algorithm

number of sales = 0, number of refunds = 0 - **one** mark

Input money - **one** mark

Input sale/refund - **one** mark

IF..sale.. THEN – add money to total amount of money

number of sales = number of sales + 1 **one** mark

ELSE subtract money from total amount of money

number of refunds = number of refunds + 1 **one** mark

Loop

Output – number of sales, number of refunds, total amount of money **one** mark

Error output - **one** mark [6]