

CAMBRIDGE INTERNATIONAL EXAMINATIONS

General Certificate of Education Advanced Subsidiary and Advanced Level

MARK SCHEME FOR the November 2002 question papers

9691 COMPUTING

9691/01 Paper 1, maximum raw mark 90

9691/02 Paper 2, Practical Tasks, maximum raw mark 60

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*.

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NOVEMBER 2002

GCE ADVANCED SUBSIDIARY AND ADVANCED LEVEL

MARK SCHEME

MAXIMUM MARK : 90

SYLLABUS/COMPONENT : 9691/01

COMPUTING

1. a) (i)-Pre written/readily available software
(ii)-Software written for a specific application. (2)
- b) -Pre tested
-Fewer bugs
-Cheaper because development costs are shared
-Training available
-Ready immediately
-User groups often available.
-May not always do precisely what is required.
(1 per -, max 4) (4)
- 2.a) (i)-Data processed together at some non sensitive time
(ii)-Data processed at time of input/input processed quickly enough to effect the next input. (2)
- b) (i)-e.g. payroll
-large quantities of data/data requires similar processing
(ii) e.g. Computer control
-Need for action based on sensor input. (4)
- 3.a) (i)4,6,8,10 (1)
(ii)4,6,8,10,12 (1)
- b) Any sensible modification for either. (2)
4. a) Candidate number 2/4 (1) bytes(1)
name 10/30 (1)
Number of subjects 1 (1)
Gender 1 (1)
Date of birth 6/8 (1)
Total 18/44 bytes
*200 (1) 3600/8800
+10% (1) 3960/7680
/1024 (1) 3.9/7.5 Kbytes
(Max 6) (6)
- b) -Nothing but floppy disk
-because of the size of the file. (2)
- 5.a) (i)-Source code is the code written in hll/written by programmer.
(ii)-Object code is in executable form.
-The translator turns the source code into the object code. (3)
- b) When translator finds
-wrong (reserved) words
-wrong syntax in instruction construction
-wrong use of variables
messages are produced for user. (2)

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- 6.a) -Time slices
 -round robin
 -giving each terminal processor time
 -Use of flags
 -Mention of polling
 (1 per -, max 3) (3)
- b) -On-line system which implies...
 -up to date records, meaning...
 -that they must be held/amended centrally
 -Any record can be queried from any terminal.
 (1 per -, max 3) (3)
7. a) -Size of array calculated
 -Location of array decided...
 -according to data type/size
 -Locations reserved
 -Array named in look up table.
 -Size of array stored in table
 -Lower bound of array stored in table
 -Upper bound of array stored in table
 -Data type stored in table
 -Address of first element stored in table.
 (1 per -, max 4) (4)
- b) -Index set to 0
 -Array(index) searched
 -If = Item then 'found'
 -Else increment index and repeat
 -Until found or error report.
 (1 per -, max 4) (4)
8. -Text file...
 -small amount of data...
 -not time sensitive transmission.
 -Video file...
 -Large amount of data
 -which must be transmitted in a standard time frame.
 (1 per -, max 4)
 -Different volumes per second...
 -mean that different transfer rates are appropriate...
 -some applications cannot be run without a high bit rate.
 (1 per -, max 2) (6)
9. a) -The software is appropriate to many applications within a skill area. (1)
- b) -e.g. Control of a robot on a production line. (2)
 -This is a one-off application. (2)

10. e.g.
 -Baud rate...
 -so that processors are sending/receiving at the same speed/data would become confused otherwise.
 -Parity...
 -must either be odd or even/otherwise correct data would not be accepted.
 -Echoing back...
 -If one device expects echoing and the other doesn't there will be a freeze while one waits.
 (6)
11. -Data flow diagrams/system flow charts...
 -show the way that data enters and leaves the system and...
 -the storage locations of different data...
 -and how the data relates to each other during processing.
 -Jackson Structure Diagram
 -shows how the solution can be split into modules...
 -using the top down approach...
 -and showing the links between the modules.
 (1 per -, max 3 per type, max 6) (6)
12. a) -Passive system is one where the information is not altered.
 -e.g. a quote is obtained from a database which remains unchanged during the enquiry.
 -Interactive system is one where the information is altered by the user.
 -e.g. Customer makes a payment, record must be altered to reflect this. (4)
- b) -Individual should be able to see data held about them...
 -to be able to check that data is correct.
 -Individual should have right of appeal to third party
 -organisation may disagree with their request.
 -Data should be relevant
 -The storing of irrelevant data is only useful if for some unpublished reason.
 -Data should not be held longer than necessary...
 -when bill paid there is no longer any reason for details of account to be kept.
 -Data should not be passed on to other users..
 -in order to protect privacy
 -Data should only be used for original purpose..
 -in order to protect user from use that is not acceptable.
 (1 per -, max 3 points, max 6) (6)
13. -Restricts access to computer system
 -Helps customer to determine what they want...
 -because choices are given at each stage.
 -Example fits a tree structure for the information.
 -Easy to operate/suits a touch screen.
 -Easy to test
 -Results are predictable
 (1 per -, max 4) (4)

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14. -Digital camera
 -takes electronic image...
 -fed into laptop (portable) computer.
 -Area of improvement airbrushed out
 -replaced by images taken from a library of products
 -Dimensions and colours can be altered.
 -Final result printed out for customer.
 -Mark available for comment about hard copy/storage facilities
 (1 per -, max 6)

(6)

15. User:
- a) -Explanation of software aimed at person who uses the system.
 b) -Installation instructions
 -Input methods
 -Example outputs
 -Examples of valid input
 -Error message explanations.
 Technical:
- a) -Used by computer literate to maintain the system
 b) -Program coding
 -Variables used
 -Data structure details
 -Detailed algorithms.
 (1 per -, max 3 per type, max 6)

(6)

TOTAL(90)