CAMBRIDGE
INTERNATIONAL EXAMINATIONS

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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

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NOVEMBER 2002

GCE ADVANCED SUBSIDIARY AND ADVANCED LEVEL

MARK SCHEME

MAXIMUM MARK : 90

SYLLABUS/COMPONENT : 9691/01

COMPUTING

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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)

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.
-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)

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)