

**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

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**CAMBRIDGE**  
INTERNATIONAL EXAMINATIONS

**NOVEMBER 2002**

**GCE ADVANCED SUBSIDIARY AND ADVANCED LEVEL**

**MARK SCHEME**

**MAXIMUM MARK : 90**

**SYLLABUS/COMPONENT : 9691/01**

**COMPUTING**



UNIVERSITY of CAMBRIDGE  
Local Examinations Syndicate

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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)

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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)

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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)