

**MARK SCHEME for the October/November 2009 question paper
for the guidance of teachers**

9691 COMPUTING

9691/11

Paper 11 (Written), maximum raw mark 90

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Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE A/AS LEVEL – October/November 2009	9691	11

- 1 (a)** -Spreadsheet
 -to keep the accounts/forecast planning/stock records/sales transactions/invoices
 -DTP/graphics/publishing software
 -to produce promotional leaflets/posters
 -Database
 -to store customer records/stock file/supplier file
 -Website authoring
 -to produce a website for the garage
 -Presentation software
 -to create presentations for meetings/open days for new models
 -Accounting/Payroll
 -to produce accounts of business/pay for workers.
 -image editing software
 -to edit photos of cars (for use on website)
 -stock control software
 -for use in parts department
 (1 per -, max 3 pairs, max 6) [6]
- (b)** -standard letter is produced...
 -with fields ready to accept data.
 -Database of records of cars is searched...
 -for all cars whose last service is >10 months < 12 months ago/or sensible comment about search criteria.
 -Details taken from record and inserted into copy of letter for printing, like...
 -Customer name/address/car model/registration/type of service...
 -note made that letter has been sent
 -mailmerge
 (1 per -, max 4) [4]
- 2**
- (i)** -Divides up the surface of the disk
 -to create areas of disk that can be used for different purposes/prepare disk for use/delete all from disk.
- (ii)** -To control messages to and from the disk and OS/to make messages understandable between the disk and the O.S.
 -to install the disk/prepare it for accepting data after wiring up.
- (iii)** -Changes size of files while maintaining data integrity
 -to decompress/compress video/allows faster download/allows more files to be stored
- (iv)** -To ensure files imported to system are virus free
 -to check the video files before saving them to system.
- (Up to 2 per dotted, max 8) [8]

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	GCE A/AS LEVEL – October/November 2009	9691	11

- 3 (a) (i)** A piece of hardware which allows the user of a computer system to give the system data.
- (ii)** A piece of hardware which will keep the data even when switched off/to be used at a later time.
- (iii)** A piece of hardware which allows a computer system to tell a user information.
(1 per dotty) [3]
- (b) (i)**
- The bar code is read by a laser scanner/wand
 - The light is reflected back so that the bars can be identified
 - Combinations of light and dark bars
 - Pairs of bars
 - different thickness/width
 - stand for different characters
 - These characters, once read, are subject to validation checks/check digit calculation.
- (1 per -, max 3) [3]
- (ii)**
- Sound/Beep
 - to signify that bar code has been accepted
 - Hard copy
 - to provide portable documentation of sale/receipt
 - LCD/Screen display
 - to give instant report of price from stock file
- (1 per -, max 2 pairs, max 4) [4]
- 4 (a) (i)**
- Instructions typed in...
 - at the prompt
 - Commands may be combined to make a command sequence
 - User must know/understand commands
- (1 per -, max 2) [2]
- (ii)**
- e.g. Technician who maintains a computer system
 - Requires access to whole system/faster access because done directly
 - e.g. application such as telnet
- [2]
- (b) (i)**
- spaces for input
 - in strict order
 - explanatory comments on screen
 - use of drop-down lists/tick boxes/radio buttons
- (1 per -, max 2) [2]
- (ii)**
- e.g. ordering goods on-line/applying for membership on-line...
 - ensures all relevant information is collected
- [2]

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- 5 (a) -Each worker has an employee number which can be stored in a logical order
 -Matched easily with sorted TF
 -So that there are no duplications of people's wages.
 -So that no worker is missed
 -every worker needs to be accessed.
 (1 per -, max 2) [2]
- (b) (i) -Large number of records in file...
 -make access to an individual record time consuming
 -worker will not be satisfied/worker will not get immediate response
 (1 per -, max 2) [2]
- (ii) **Either**
 -Indexed sequential
 -Because it allows both sequential and random/direct access to data
 -Because it allows fast access to data while maintaining sequential nature
Or
 -Random/direct access
 -Because it gives direct access to data/faster access to data
 -because immediate access is allowed (while payroll may be produced serially).
 (1 for type, 1 for justification) [2]
- (c) -Serial
 -Because no logical order to input of data
 -Records/fields/items input with no logical sequence to file/chronological order.
 (1 for type, 1 for justification) [2]
- (d) (i) -The production of the payroll
 -Because all processing similar/large amount/can be done at off-peak time/data is collected before processing. [2]
- (ii) -Individual enquiry made by a worker
 -Time critical/must be done while worker waits/changes may be time critical. [2]
- 6 (i) -Manages execution of instructions
 -Fetches instructions in sequence/decodes them.
 -Uses control signals to manage rest of processor.
 (1 per -, max 2) [2]
- (ii) Stores:
 -Program instructions;
 -Data associated with program;
 -Parts of O.S. (currently in use).
 (1 per -, max 2) [2]
- (iii) -Carries out all arithmetic.
 -Carries out logic operations.
 -Acts as gateway to and from processor.
 (1 per -, max 2) [2]

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- 7 (a) -Two sides to problem which must contribute to the problem definition
 -The owner of the problem and the system analyst
 -They must agree or...
 -the result will be a solution to the wrong problem.
 (1 per -, max 2) [2]
- (b) -Interviews
 -allow a departure from a set script
 -Questionnaires
 -allow large participation in short space of time
 -Observation
 -can see faults in present process first hand
 -Documentation
 -see what people are used to and how to improve docs.
 -Meetings
 -allow large number of people to have their say in an unstructured environment.
 (1 per -, max 2 groups, max 4, advantages are examples) [4]
- (c) -Success of system must be measured against the original objectives
 -otherwise system may be considered to be working despite not satisfying objectives
 -Payment based on number of objectives satisfied
 (1 per -, max 2) [2]
- 8 (a) -LAN has computers geographically close, same building/WAN has computers geographically remote.
 -LAN connected using own communication media, cable/WAN relies on external communication media, telephone line.
 -LAN more secure from hacking/WAN may have security problems [2]
- (b) (i) -Each client/computer at end of cable
 -each has individual cable to hub/server/switch
 -Peripherals like printers are shared.
 (1 per -, max 3) [3]
- (ii) -Advantage: Reliability/taking machine off or adding new is easy/high security/fewer collisions
 -Disadvantage: More expensive due to large amount of cabling/extra hardware/hub failing means network fails.
 (1 per -, max 2) [2]
- (c) (i) To ensure that both are on and ready for communication/to ensure that both are using same protocol. [1]
- (ii) -Data sent to buffer from primary memory
 -Processor can continue with other tasks
 -Data downloaded from buffer to file server
 -When buffer empty, interrupt sent to **processor** requesting refill of buffer
 -Interrupt added to queue and dealt with when top of queue/interrupt dealt with on receipt by processor.
 (1 per -, max 4) [4]

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- 9 (a) -Anti-glare screens/low radiation screen
 -to protect eyes and reduce headaches
 -Wrist supports
 -to protect against muscle strain/RSI/ulnar neuritis
 -Concealed cables
 -to eliminate tripping over wires
 -Ensure screens are at correct height/keyboards in correct position
 -Avoid muscle problems/stiff neck/back problems.
 (Up to 2 per measure, max 2 measures, max 4) [4]
- (b) -Do not want people to see tax details/personal financial details
 -May lead to targeting of property because of wealth of owner
 -May lead to comparison with others/difficulty with relationships with friends/colleagues
 -May lead to blackmail if details wrong.
 -concern that details may be incorrect
 -leading to incorrect tax demands
 -identity theft
 (1 per -, max 20) [2]
- 10 (a) e.g.
 INPUT I
 LET P = I – 500
 IF P <= 0 THEN REPORT "NO TAX TO PAY"
 ELSE T = P *.1
 REPORT "TAX TO PAY =", T
 END IF
- Mark points:
 -Input of I to algorithm
 -Calculate taxable income
 -Correct condition for no tax
 -Report no tax to pay
 -Calculation of tax iff there is some to pay
 -Report tax to pay iff there is tax to pay.
 (1 per -, max 5) [5]
- (b) -Do not indicate what they stand for/will make maintenance/debugging difficult to do.
 -e.g. INCOME and TAX_TO_PAY (Any sensible)
 (1 per -, max 2) [2]
- (c) -Incomes kept in suitable data structure e.g. array (so that they can be read in order into algorithm)
 -Loop structure (Repeat, While or For)
 -With end condition based on rogue value of I (to indicate end of values) or end of file/number in file
 -Outputs will either be identifiable by inputting (and outputting) person ID with Income/OR will be output to data structure so that ID can be determined by position in data structure.
 (1 per -, max 3) [3]