

**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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- 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]

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- 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 doty) [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]