

Mark Scheme Summer 2009

GCE

GCE O Level Computing (7105)

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

7105 - SECTION A

Question Number	Answer	Mark
1 (a)	<pre> graph TD Server[Server] --- Staff[Staff] Server --- Students[Students] Staff --- Attendance[Attendance] Students --- BiologyWork[Biology Work] </pre> <p>1 mark for each: Correctly placed staff files Correctly placed student files</p>	(2)

Question Number	Answer	Mark
1 (b)(i)	Presence check	(1)

Question Number	Answer	Mark
1 (b)(ii)	<p>Any one from:</p> <ul style="list-style-type: none"> ▪ Presence check only if not given in b (i) (1) to ensure a mark has been entered ▪ Type check (1) to check correct information has been used ▪ Range check (1) to ensure the correct date is being used ▪ Lookup table on staff name/code (1) to ensure correct staff name/code is used or any other suitable validation check (1) with suitable explanation (1) ▪ Length (1) has value of 1 therefore filled in <p>NOT format check</p>	(2)

Question Number	Answer	Mark
1 (c)(i)	<p>Choose from -</p> <ul style="list-style-type: none"> ▪ Biometrics (1) Finger print scanned to identify user (1) ▪ File access rights (1) will ensure only a correctly identified student can access a file (1) ▪ Login ID (1) to correctly identify the student's file ▪ Password on the file (1) to ensure only the student can open it (1) 	(2)

Question Number	Answer	Mark
1 (c)(ii)	Any suitable backup and restore system, or any suitable file recovery system - described for 2m	(2)

Question Number	Answer	Mark
2 (a)	Modem/Router/Broadband/ISDN feature (1) to allow data transfer (1) converts data / signals (1m) NOT makes internet connection Cable/wireless feature (1) to connect the device to the computer(1)	(4)

Question Number	Answer	Mark
2 (b)	MUST be to do with conferences / company business NOT services being used by doctors Storage space (1) additional storage for large item (1) Instant messaging/chatting(1) communicate with colleagues about the conference(1) On line Shopping(1m) Purchase of conference related goods(1m) Teleconferencing(1m) absent colleagues can participate(1m) Forum/BBS/Blog(1m) to provide conference information(1m) E-payments(1m) payment of conference fees(1m)	(4)

Question Number	Answer	Mark
2 (c)(i)	A web site / network only accessible to people within the company	(1)

Question Number	Answer	Mark
2 (c)(ii)	Memos to staff / telephone lists / function dates etc. Must be to do with organising conferences for doctors / company internal matters. NOT doctors doing something.	(1)

Question Number	Answer	Mark
3 (a)	Set the users rights / access levels so that software can only be uploaded by an administrator/designated person- anything that implies this process	(1)

Question Number	Answer	Mark
3 (b)	<p>Any four from -</p> <ul style="list-style-type: none"> • designing, testing and installing networks • administrating user accounts • maintaining the network and backing up data • ensuring systems are secure to prevent unwanted users or keep out hackers • managing technical staff working on the network • user support and training • controlling budgets and analysing costs • devising a disaster recovery plan • fault finding • server or network updates / server management 	(4)

Question Number	Answer	Mark
4	<p>Any three from-</p> <ul style="list-style-type: none"> • Boot tests to check peripheral devices, memory available etc. - error messages • Memory allocation • Provides a user interface • Allows software - hardware communication • Job scheduling / multi-tasking • Selection and control of peripherals • Maintain / manage computer security (Password checking) • Handling interrupts if problems occur with applications software etc. 	(3)

Question Number	Answer	Mark
5 (a)	<p>NOT in a supermarket</p> <ul style="list-style-type: none"> • Sales forecasting to determine profit/ loss/ trends over a period of time • Market trends to monitor stock market fluctuations • Weather predictions following weather patterns to determine future forecasts • Crop yields etc. so that farmers can determine best mix of crops for maximum yields <p>Accept any valid model (1) with suitable description (1)</p>	(2)

Question Number	Answer	Mark
5 (b)	<ul style="list-style-type: none"> • The model cannot be damaged by wrong decisions • Immediate results are obtained • Adjustments to the model can be easily achieved, can be repeated with different parameters • Can work at different time scales. e.g. years per minute • Can show dangerous processes safely. e.g. nuclear reactors • Cheaper than building / testing real objects / situations • Other sensible reason <p>-any three valid reasons</p>	(3)

Question Number	Answer	Mark
6 (a)	<p>Any two from- Spreadsheets / database / word-processing/ presentation software / desktop publishing</p> <p>Must be two packages that would work together.</p>	(1)

Question Number	Answer	Mark
6 (b)	<p>Charts from a spreadsheet (1) placed in a word processed report (1) (Accept any valid example of this sort) Must be integration, not two being used separately</p>	(2)

Question Number	Answer	Mark
6 (c)	<p>Ability to move information seamlessly between the packages (1) or anything that implies this action</p> <p>Consistent tools and controls(1m)</p> <p>Cheaper than equivalent separate software (1)</p>	(2)

Question Number	Answer	Mark
7	<p>LT 90</p> <hr/> <p>PD</p> <hr/> <p>FD20</p> <hr/> <p>RT90</p> <hr/> <p>FD30</p> <hr/> <p>RT90</p> <hr/> <p>FD40</p> <hr/> <p>PU</p> <hr/> <p>FD5</p> <hr/> <p>PD</p> <hr/> <p>FD20</p> <hr/> <p>1m for each 2 in correct order. No overlap between pairs. Ignore the printed LT90</p>	(5)

Question Number	Answer	Mark
8 (a)	(digital) thermometer/thermistor/ thermocouple /temperature sensor	(1)

Question Number	Answer	Mark
8 (b)	Sensor takes reading(1m) Passed to processor(1m) Comparison of takes place(1m) (of temperatures) Too high compressor on / too low compressor off (1)	(3)

Question Number	Answer	Mark
8 (c)	1 mark for each: <ul style="list-style-type: none"> • suitable door sensor/light sensor shown • Signal processing shown • Time delay • Actuator being used (alarm) • It actually could work Max 4 marks NOT fridge light goes on when the door opens	(4)

SECTION B

Question Number	Answer			Mark
9				(12)
Field name	Data type	Field length	Reason	
Address code	text	12	In the case study, Fant2332 has four letters and four digits, so type must be text. Other districts may have longer names, so length allows for an eight letter name.	
ID number	Numeric/text	7	seven-digit number, specified in the case study.	
Tax date	text	3 or 9	Tax date is a month, therefore text. Longest month name is 9 letters. Or uses Jan, Feb, etc.	
Date of birth	date	6-10	Date of birth is a date, and must be in a specific format. Matches field size	
Licence	text	5 or justified	Each licence group is a letter, therefore text. There are 5 possible licences that could be held. Allow larger size if justified, e.g. by spaces between the letters.	

Question Number	Answer	Mark
10 (a)	Adding: A newly licensed driver, newly imported vehicle (1) Deleting: Driver dies / emigrates, vehicle scrapped / exported (1) Amending: Any change to driver or vehicle details (1)	(3)

Question Number	Answer	Mark
10 (b)	Key field is needed to identify / distinguish between records/stop duplication Key field is unique Unique identifier = 2	(2)

Question Number	Answer	Mark
10 (c)	Owner may have more than one vehicle therefore duplication of (vehicle) fields. NOT of keyfield therefore difficult to search / sort / other sensible database operation OR Allow explanation of normalisation for up to 3 marks	(3)

Question Number	Answer	Mark
11 (a)	<p>Answers may include:</p> <ul style="list-style-type: none"> • Telephone line (copper cable) NOT fibre optic Individual copper cable laid to each camera • Electric cable Signal sent down electricity supply cable that is already there • Wireless short range signal to local receiver/computer Then via WAN / Internet / telecoms cable OR use mobile telephone network <p>2 x Method plus extension (1 + 1)</p>	(4)

Question Number	Answer	Mark
11 (b)	<p>Answers may include:</p> <ul style="list-style-type: none"> • Physical link using cable / port, USB / serial / parallel / firewire, pen drive, etc. • Wireless link (short range e.g. blue tooth) using wireless (NICs dongles) • Chip / card reader/scanner attached to laptop used to read a card / chip from the box used to scan / read data from the box. • IR link from box to receiver on laptop <p>2 x method plus extension 2 x(1+1)</p>	(4)

Question Number	Answer	Mark
12 (a)	<p>Look for:</p> <ul style="list-style-type: none"> • Open / use VEHICLE • to find 'tax group' • using vehicle number • Close VEHICLE • Open / use TAX RATE to find • correct group multiplier • correct road class rates • Close TAX RATE • cost = class 1 X group multiplier (1m) • +class 2 X group multiplier • +class 3 X group multiplier • +class 4 X group multiplier (1m) • Close CHARGE 	(7)

Question Number	Answer	Mark
12 (b)	<p>Do not accept virus threat</p> <p>Answers may include:</p> <ul style="list-style-type: none"> • Phishing(bogus site) setting up a bogus site to capture bank details anti-phishing software / browser settings • theft of details by internal staff staff get data from web server / database access levels / security measure on web server / database • theft/interception of details by external person hacking into web site to redirect / steal from database or web server / hackers firewall • human error /accidental loss / transfer of data data lost / transferred to wrong place / printouts dumped a sensible data protection policy e.g. no transfer via disc / laptop, shredding policy enforced 	(4)

Question Number	Answer	Mark
13 (a)	<p>Look for:</p> <ul style="list-style-type: none"> • box sends a signal • response from receiver • data sent <p>data check by, check digit / parity / repeat back / double send if data correct, finish if data not correct, re-send</p> <ul style="list-style-type: none"> • repeat send / check until correct • no response from receiver <p>wait one hour re-send signal</p> <ul style="list-style-type: none"> • repeat until response 	(9)

Question Number	Answer	Mark
13 (b)	<p>Look for:</p> <ul style="list-style-type: none"> • Look for reference to box being moved between vehicles. (2m) • could be an anti-fraud measure, check that vehicle matches box / vehicle number not tampered with. • could be used to validate contact signal / vehicle ID, if no match re-send / alert 	(2)

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