OCR
RECOGNISING ACHIEVEMENT

GCSE

ICT A

General Certificate of Secondary Education

Unit **2359/02:** Paper 3 (Higher Tier)

Mark Scheme for June 2011

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All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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Any enquiries about publications should be addressed to:

OCR Publications
PO Box 5050
Annesley
NOTTINGHAM
NG15 0DL

Telephone: 0870 770 6622
Facsimile: 01223 552610
E-mail: publications@ocr.org.uk

<table>
<tr><th colspan="3">Question</th><th>Expected Answer</th><th>Mark</th><th>Rationale/Additional Guidance</th></tr>
<tr><td>1</td><td></td><td></td><td>
<table>
<tr><th></th><th>True</th><th>False</th></tr>
<tr><td>Data is encrypted to prevent viruses</td><td></td><td>✓</td></tr>
<tr><td>Encryption prevents hackers from deleting the data</td><td></td><td>✓</td></tr>
<tr><td>Encryption requires a key to decrypt the data</td><td>✓</td><td></td></tr>
<tr><td>Encryption scrambles the data so that it cannot be understood</td><td>✓</td><td></td></tr>
</table>
</td><td>[4]</td><td>Correct answer only
Subtract one mark for every extra tick down to a minimum of 0</td></tr>
<tr><td>2</td><td></td><td></td><td>Two matched pairs from:

Window –
a temporary area opened on a screen/used to display the activity of a program/more than one piece of software can be displayed at a time

Icon –
small picture or symbol or shortcut/used to represent a program or directory/clicking on it opens a program/can be a button used in navigation

Menu –
used to display a list of options/activities

Pointer –
is an icon/arrow which moves in response to movement of the mouse/used to identify position of cursor/often changes its shape depending on its position on the screen</td><td>[4]</td><td>One mark for name, one for related description
If not named can still gain a mark for a clear description
Mark first two answers only

Accept application instead of program
Accept image for picture</td></tr>
</table>

Question			Expected Answer	Mark	Rationale/Additional Guidance
3			**Two** from: Teleworking Flexible working hours Need for re-training Part time working Increase in employment opportunities for IT staff/call centre operators Jobsharing	**[2]**	Accept training for retraining Allow clear descriptions instead of names

Question			Expected Answer	Mark	Rationale/Additional Guidance
4			**Four** from: • They must register with the DPA • The information must be obtained fairly • The information must be obtained/processed lawfully • The data will be held only for one or more specified and lawful purpose • The data will not be used for anything other than that [specified] purpose • The data will not be disclosed for anything other than that purpose • The data held for any purpose must be **adequate** in relation to that purpose • The data held for any purpose must be **relevant** in relation to that purpose • The data held for any purpose must not be excessive in relation to that purpose • The data must be accurate • The data must not be transferred to countries without any adequate DPA • The data must be kept up to date • That data must not be kept for longer than necessary • That an individual whose data is held is entitled to be informed, **upon request** by them of any data that is held • An individual **has the right to** have access to such data held about them • Where appropriate, to have such data corrected or erased • Data must be secure • Personal data shall be processed in accordance with the rights of data subjects.	**[4]**	**Emboldened** words are essential parts of the answer. (accept outside EU)

Question			Expected Answer	Mark	Rationale/Additional Guidance
5			**Three** matched pairs from: Parallel running The old and new system are run together (until the new system is working satisfactorily). Pilot running One department/branch uses the new system (until the new system is working satisfactorily). Phased implementation One aspect/part of the system is implemented (and when successful other aspects are introduced one by one). Direct changeover New system is introduced overnight (and old system discarded).	**[6]**	Mark first three answers only One mark for name One mark for description Accept big bang for direct changeover
6			**Four** from: • Mechanics interviewed for requirements • Data is collected from experts/mechanics • Knowledge base is designed/created • Rule base is designed/created • Inference engine is designed/created • Input screen is designed/created • Output format is designed/created • Test the system.	**[4]**	Order is not important Don't accept names of components must have designed or created.

Question			Expected Answer	Mark	Rationale/Additional Guidance
7	(a)		**Three** from: Saves time rather than queuing in shops Don't have to waste time travelling to shops etc. Disabled/housebound people don't have to travel/leave home Don't have to spend money on travelling expenses (travelling long distances to shops) Greater choice of goods Can shop when shops are closed/can shop 24/7 Less traffic pollution Less danger of mugging Items can be delivered Can save your shopping list/order Easier to search for / find goods / make price comparisons Don't have to leave the house in bad weather Can access product reviews to help making choices.	**[3]**	
	(b)		**Three** from: Fewer staff needed so less spent on wages Fewer shops needed so less spent on rates/rent Less actual cash handled so fewer robberies Less money spent on security staff/staff to handle money Wider customer base – (increased sales/profits) More accurate stock control/less stock goes missing Less shoplifting People will buy even when the shop is closed increasing profits.	**[3]**	

Question			Expected Answer	Mark	Rationale/Additional Guidance
8			*Batch processing:* **Three** from: All the data to be input is collected together Data is collected off-line Before being processed in a single operation/at the same time Cheque clearing uses batch processing Processing bank statements uses batch processing Payroll processing uses batch processing Cheques are collected together throughout the working day Details for payroll transaction file are collected weekly/monthly They are processed in one operation overnight. *Online processing:* **Three** from: The user interacts directly with the main computer Devices are under the direct control of the main computer Transactions are carried out immediately Cash transactions in a bank use online processing Teller updates accounts immediately (using her terminal) ATM withdrawals use online processing User's account is updated immediately Internet banking uses online processing Account enquiries using phone/local branch/internet uses online processing Teller/call centre operator/internet user access account details immediately.	**[6]**	Must have appropriate examples of both methods and descriptions of both methods to gain full marks Accept processor instead of main computer Accept online banking for internet banking Accept touch tone phone banking

Question			Expected Answer	Mark	Rationale/Additional Guidance
9			**Six** from: A check digit where an extra digit is produced based on calculations performed on existing digits Particularly appropriate for long strings of digits • each Customer booking reference consists of 10 digits • prevents transposition errors. A length check where each entry must consist of the correct number of digits Particularly appropriate for fixed length fields • each Customer booking reference consists of 10 characters/are the same length • prevents too few/many digits being entered • does not prevent transposition errors. A range check where data is checked to ensure that it is within a specific range of numbers Not particularly appropriate for text fields • each Customer booking reference consists of 10 digits • prevents too few/many digits being entered • does not prevent transposition errors • field may have to be converted from text to numeric first • range may be difficult to fix will all references be greater than (999999999?) A type/invalid character check where data is checked to ensure that it consists entirely of digits • prevents typing alphabetic characters into the number field • each Customer booking reference consists of 10 digits • does not prevent too few/many digits being entered • does not prevent transposition errors		Must compare at least two checks to gain full marks. Do not accept repeated points

Question			Expected Answer	Mark	Rationale/Additional Guidance
			• field may have to be converted from text to numeric first. A presence check where data is checked to ensure it has been entered • does not prevent too few/many digits being entered • does not prevent transposition errors • does not prevent entry of invalid data. An existency check checks if reference already exists on database Not particularly appropriate for new records • does not prevent too few/many digits being entered • does not prevent transposition errors. A format/picture check checks to see that data is in the correct pattern/10 digits • prevents too few/many digits being entered • prevents typing alphabetic characters into the number field • does not prevent entry of an invalid reference number.	**[6]**	

Question			Expected Answer	Mark	Rationale/Additional Guidance
10	(a)		**Six** from: *Interviewing checkout operators* very time-consuming to interview **all** checkout operators may be difficult to keep interviewee focussed on the questions/issues may be difficult to arrange/operators may be too busy responses may be what the interviewee thinks the interviewer wants to hear. *Examining documents* takes a long time to go through **every** document may not see all relevant documents/may miss some documents old documents may be irrelevant/of limited use. *Observation* workers may resent being watched workers may not behave normally while being watched man-power intensive. *Questionnaires* may not be returned/some questions may be omitted may not be completed accurately script is fixed/cannot be amended in light of responses.	**[6]**	Must be at least two different methods to gain full marks Must be a disadvantage to gain a mark

Question			Expected Answer	Mark	Rationale/Additional Guidance
10	(b)		**Six** from: *Keyboard/keypad* Essential if bar code is damaged/ can be used with non bar coded products More robust Slow to enter data Less accurate when entering data. *Bar code reader/scanner* Bar codes can be flimsy If bar code is ripped/creased it can't be read Is quick to enter data Is very accurate to enter data If product hasn't got a bar code it cannot be read. *Touch screen/Concept keyboard* Is quick to enter data Is more accurate than keyboard to enter data More robust than bar code reader Touch screen less robust than keyboard. *Weighing Scales* Can weigh loose foodstuffs sold by weight/non packaged foodstuff Can be slow as has to be used in conjunction with keyboard/touch screen Can be used with non bar coded products Most robust device.	**[6]**	Must mention at least two devices to gain full marks Must have at least one advantage and disadvantage to gain full marks. Do not allow repeats Allow comparisons

Question			Expected Answer	Mark	Rationale/Additional Guidance
11			**Six** from: *Advantages* Don't have to spend so much on heating Don't have to spend so much on renting offices Don't have to pay travelling expenses **Increased productivity** from more content workforce Improved motivation Fewer distractions so **greater productivity** Can employ people from any location so greater expertise is available. *Disadvantages* Difficult to monitor workers Workers may not always be on task/ could become distracted **reducing productivity** Difficult to arrange team meetings Cost of **extra** hardware/ initial delivery costs.	**[6]**	Must have both advantages and disadvantages to gain full marks Must be advantages and disadvantages to **company** **Extra** hardware could be each worker would need an individual printer
			Total	**[60]**	

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

14 – 19 Qualifications (General)
Telephone: 01223 553998
Facsimile: 01223 552627
Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

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Head office
Telephone: 01223 552552
Facsimile: 01223 552553

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