

Report on the Units

January 2007

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The mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

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.

The reports on the Examinations provide information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the syllabus content, of the operation of the scheme of assessment and of the application of assessment criteria.

Mark schemes and Reports should be read in conjunction with the published question papers.

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Applied GCSE ICT (1494)

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Chief Examiners Report

Although entries were significantly less than in the Summer session work was seen across the entire mark range in the external assessment, 4872 and both portfolios, 4873 and 4874. It was clear that many Centres had prepared their candidates better for this session.

Evidence still shows that some Centres are attempting to deliver this specification in a smaller amount of time than is allocated to two single GCSE subjects. This is a double GCSE award and candidates are expected to do more than they would for a single award. Candidates need to master the range of applications software and acquire a thorough knowledge of the use of ICT in business and society. Whilst it is not possible to specify how long this will take the specification suggests a minimum of four hours a week over two years.

4872: ICT Knowledge and Understanding (Written Examination)

General Comments

As in previous sessions, most candidates were able to demonstrate knowledge and understanding covering the majority of the specification requirements. Knowledge of basic hardware and software is often sound, although many candidates continue to lose marks by giving brand names rather than generic names.

Higher marks are often dependent upon the ability to explain answers by giving valid and coherent reasons, and the questions on this paper which required more detailed explanation were often not answered well. Few candidates gained very high marks on this paper. Candidates would be well advised to look at the number of marks available for each question/part question, as this gives a good indication to the level of detail and number of points required.

Another common error was to fail to use correct ICT terminology. For example, it would be expected that ICT candidates would be able to refer to 'passwords' rather than 'secret codes' and 'RAM' rather than 'memory'.

There was evidence in a number of places on the question paper of some confusion between spreadsheets and databases.

Many candidates had clearly prepared well for this examination, using papers from past sessions as practice material. Whilst this is clearly helpful, candidates need to ensure they read questions thoroughly and answer the question set, rather than a question on the topic that either they would like to have seen, or that has been asked on previous papers.

The examination papers this session were printed with margins and there was a clear instruction to candidates not to write outside the box bordering each page. It is very important that candidates obey this instruction. They should find that the space allocated for each answer is sufficient. Centres are requested in future sessions to ensure candidates read and understand this instruction.

Comments on Individual Questions

- 1 Candidates from most centres were able to demonstrate a sound understanding of input devices and output devices, with many gaining the full 7 available marks. Where errors were found in the first four parts it was often to suggest a backing storage device for (b) or (d). Parts (e) and (f) were less well answered, with RAM being a frequent wrong answer to both parts.
- 2 (a) Whilst a few candidates failed to gain any marks for this question through over-vague answers such as 'it's faster', 'it's more efficient', 'it's cheaper', most were able to gain one or two marks, with the ability to search quickly for records being a common correct answer. Many candidates thought that data in an electronic database would automatically be less easily lost than that on paper, without any mention of the steps that would need to be taken to ensure this additional safety.

- (b) This question was poorly answered by the majority of candidates, despite similar questions in the past being well answered by many. Unlike previous sessions, few candidates considered issues relating to data duplication. Many candidates failed to notice that this question specifically referred to the use of a **relational** database and simply expanded or repeated their answers from part (a). Others often gave over-vague answers that gained one mark for showing an understanding that a relational database contains multiple tables that are linked together. However, few related their answer specifically to the question's context of customer and booking records or considered why a relational database would be **efficient**. Many candidates appear to think that when data in one table of a relational database is changed, data on linked tables is automatically changed.
- (c) Most candidates were able to identify the Data Protection Act.
- (d) Many candidates gave well-rehearsed answers about the requirements of the Data Protection Act. However, there were many examples of candidates suggesting actions that might be appropriate, such as the use of backups and/or passwords, but that are not specifically required by the Act. A common incorrect answer was to suggest that the Act prevents any disclosure of data to other companies.
- 3 (a) Although this question was generally answered well a number of candidates failed to follow the instruction to tick only **one** box, with the statement that DVDs and CDs storing data magnetically being the most common incorrect answer.
- (b) Most candidates were able to gain at least one of the two marks available for this question, although suggestions that a TFT monitor would increase the speed of the computer or its storage capacity were not uncommon. Some candidates suggested that a TFT monitor would allow Sharon to *create* better quality graphics, rather than to see them more clearly. Some confused a TFT with a touch-screen monitor.
- (c) This question again showed that many candidates, even those scoring high marks overall, have a poor understanding of RAM. Suggestions that more RAM would allow Sharon to store more data were common, and even those who had learned that RAM offered temporary storage often demonstrated a poor understanding of what that means. Although many candidates often gained one or two marks for suggesting that the computer would run more quickly or that the increased RAM would allow the use of more programs at the same time, very few candidates gained all three available marks. Although mention was often given of the video files used, only rarely did candidates demonstrate a clear understanding of the significance of these files by stating that they would be very large.
- (d) Many candidates were able to identify a suitable component and some gained a second mark by describing how this component would be better. However, few gained the third mark for relating this to Sharon's needs. A number of candidates knew that a higher specification video card would be useful but very few showed any understanding of the role of the video card, suggesting that it would allow the creation of 'better quality graphics'. Some candidates simply repeated components from parts (a) to (c), so gaining no marks for this question.
- 4 (a) Although this question was answered well by the majority of candidates there are still a significant number who cannot distinguish between a network and the Internet, whilst others think that a network is something that allows access to the Internet.

- (b) Many candidates gained two of the four available marks, for suggesting two benefits but failing to explain these or relate them to the needs of the hotel. Others wrote about their large school client-server networks rather than a small 3-station network whilst others repeated their answers, often relating to Internet use.
- 5 (a) This question was answered well by many candidates, with the full 9 marks frequently awarded. Changing to a more readable font, emphasising the title and highlighting the meal times in some way were common correct answers. Some candidates did not read the question fully and failed to explain *how* they would carry out their suggested improvements, whilst others gave over-vague answers such as 'make important information stand out' or suggested changes to *content* rather than *appearance*.
- (b) This question was answered less well, with many over-vague answers such as 'it will make the sheet stand out'. However, many candidates gained one or two of the available marks. The best answers were provided by candidates who considered specifically the improvements they had suggested in (a), although it was unusual to find an answer that contained sufficient detail to warrant the full four marks.
- 6 (a) Although (i) was generally answered well, a number of candidates failed to gain the mark, either because they relied on a brand name or because they gave an over-vague answer rather than the correct technical term. For (ii) there were many vague answers such as 'because it is designed to do leaflets' but also a pleasing number of good points, with the availability of a range of templates being the most common.
- (b) Most candidates were able to suggest 'spellcheck' for (i) but part (ii) was less well answered, with 'grammar check' being a common wrong answer. Although some candidates gained one mark in (iii) for showing an understanding of why proof reading is needed to find errors that a spelling checker would not find, few were able to give any reason why the spelling checker itself should be used in addition to proof reading.
- (c) Many candidates gained 2-4 marks for this question although a number were unable to distinguish between sources and explanation. Some candidates repeated digital camera. Few were able to give two explanations that contained sufficient detail to deserve full marks.
- 7 (a) This question was generally well answered, although in part (ii) many failed to identify all of the cells that would change.
- (b) This question was well answered by the majority of candidates.
- (c) Although many candidates gave a formula that would work, few appreciated that a SUM function could be used, perhaps confused by the blank cells. A significant number failed to gain a mark because they omitted to include cell F8.
- (d) This question was answered well by many candidates, with the full six marks being commonly awarded. Some failed to gain any marks because they did not understand what a formatting feature was. A significant number clearly confused spreadsheet formatting with database field types, with 'Boolean' being a common answer, identifying D7/D8. Another misconception was to suggest that cell C11 had been formatted as a percentage.

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- (e) This question was very poorly answered, with most answers being over-vague or comparing the spreadsheet with manual calculations. Many suggested that the spreadsheet would be 'more accurate' than using a calculator. Where a mark was gained it was usually for recognising that on a spreadsheet if values were changed then other cells would be automatically updated. Some candidates also considered the value of printing out the sheet.
- (f) This was a challenging question, requiring candidates to consider carefully the given spreadsheet before suggesting improvements. Many candidates gained one or two marks for realising the importance of including the list of prices on the spreadsheet and suggesting, albeit vaguely, how this data could be automatically entered into the relevant cells according to the customers' choices. Few gave the detailed answers, suggesting actual formulas to use, that were needed for more than two marks, although some did show an understanding of the value of including the VAT rate as a separate cell. This was another occasion where some candidates tried to write about relational databases rather than spreadsheets.
- 8 (a) Most candidates who recognised what a 'feature' was were able to gain 3-6 marks on this question, by suggesting features such as sound, video and hyperlinks. However, this was another example of a question where answers often lacked sufficient explanation to gain full marks. A number of candidates failed to realise that the question was asking for features that could not be included in a paper brochure.
- (b) This question proved to be a good discriminator, with the whole range of marks observed. Whilst some candidates were able to explain a range of genuine advantages and disadvantages many wrote about advantages to the customer rather than to the hotel and for many the disadvantages were limited to vague suggestions about cost, without any consideration of what the costs would be or what the costs of alternatives would be. Many candidates thought that having a web site would open up the hotel's computer system to hackers and viruses.
- Candidates would be well advised to take more time planning their answers to questions of this type, trying to consider issues in a less superficial way. For example, it was not uncommon for candidates to recognise the fact that a website could/should be frequently updated as either an advantage or disadvantages, but it might have been expected that more able candidates would have considered this as a more complex issue, commenting on the advantage of being able to keep the website up to date, but also considering the time implication of this.
- 9 Whilst most candidates demonstrating some understanding of security, few gave sufficiently detailed answers to gain the full six available marks. Many candidates wrote extensively about viruses and virus protection, clearly thinking that the most common activity of hackers is the planting of viruses. Many were able to suggest the use of a firewall and passwords, though a clear understanding of how each of these is able to protect the files was not often shown. Encryption was sometimes mentioned, but again rarely explained.

Principal Moderators Report

General Comments

Most work was presented bound with treasury tags in the manner requested. Loose papers in pocket wallets or plastic pockets are not appropriate for moderation.

Centres must fully complete the Unit Recording Sheets including referencing the pages on which candidates have achieved criteria and completing the teacher comment section. These sections are important in helping moderators see where and why a particular mark has been awarded and the commentary often supports teacher assessment and avoids the need for mark adjustments.

Care must be taken with the addition and completion of totals on the URS and the transfer of marks to the MS1.

Anecdotal evidence suggests that some Centres are delivering this course in less than the recommended minimum of four hours per week. Whilst it may be possible to teach the theory elements in less time, candidates will not master the use of application software sufficiently to access the higher mark levels.

Moderators continue to identify Centres who would benefit from a more complete understanding of the specification by attendance at OCR training courses.

4873 Business Systems Portfolio

Candidates studied a wide range of organisations, many through case studies. Most candidates produced systems linking database and word processing software.

Strand a

There is a minimum requirement for one mark to give at least one use of ICT by each of two organisations, along with the information requirements and the hardware and application software for at least one system. More candidates covered use of hardware well and recognised the significance of networks in meeting the needs of the organisations.

Strand b

It was pleasing to see a more appropriate range of documents such as letters, reports and web sites, reviewed by candidates. Candidates scored higher marks when annotating details of content, layout presentation and writing styles on the documents they had collected, drawing conclusions in a word processed report.

Strand c

The quality of documents produced for this strand has improved although candidates should produce documents of their own rather than copy examples they have been given. Some proprietary schemes or teacher set assignments direct candidates too rigidly leaving little room for them to demonstrate the initiative and originality needed to attain the higher mark levels. Even in the lowest mark band there is a requirement for documents to be fit for purpose and audience which means there should be very few errors. Documents should be spell checked and proof read with letters, for example, using a standard font size and style.

Business cards or flyers give candidates very little scope to show their mastery of publication software and deserve only the lowest mark. Candidates should produce, for example, a business report combining text, graphics, charts, photographs etc, and make use of features such as text and graphic frames, columns, headers or footers, text wrap and text flow. A presentation should combine a range of different media effectively and house style implies more than use of a logo.

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Strand d

Any diagrammatic representation of information flow such as system flow charts and/or descriptions of information flow may only gain up to 3 marks in the lower band.

Candidates must produce data flow diagrams not flow charts to gain middle or higher band marks. An accurate level one data flow diagram will gain 4 marks. A more complex dfd (ie with more than one process) can be given 5 marks if it is accurate. Analysis or other description demonstrating understanding will raise this to 6 marks.

Strand e

Candidates must clearly define the user requirements of the system they will implement. Even a basic design specification should make clear what the purpose and intended output of the system will be. Candidates need to be specific about what their system will do and what the desired outcomes will be.

Teachers must ensure at an early stage that candidates design a system which is not too challenging for them and that they are capable of completing.

Strand f

Many candidates used annotated screenshots to show how they had implemented their system. Those scoring high marks used cropped screenshots as part of a coherent report rather than having each screen print with a few notes on a separate page. In order for someone else to re-create their system candidates should provide prints of the data they have entered. Printed output is necessary evidence that implementation has been completed. If a database is set up there should be sufficient records to enable candidates to show that their system works efficiently. Twenty records should be the minimum.

Strand g

Candidates gain marks for testing their system against normal, abnormal and extreme inputs. Normal data is within the expected range, extreme data is at the boundaries of the expected range and abnormal data is outside the expected range. If the range is 0 to 100, 20 and 70 would be normal, 1 and 99 would be extreme, whilst -5 or alphabetic data are abnormal. For marks in the highest band candidates should also show that their system produces the required output matching user requirements and also evaluate their system, detailing improvements they have made.

Strand h

Candidates who use annotated, cropped screen prints to produce 'quick start' guides which would allow a novice to start using the system quickly gained the highest marks. High attainment was often aided by use of user friendly menus or switchboards in database systems.

4874 ICT Survey Portfolio

The general theme of this unit is of using ICT for purposeful research. A number of Centres treated each strand as a separate entity, ignoring the banner on the assessment evidence grid and limiting candidate achievement. Reports for strands e, f and g rarely show evidence of in depth research, often treating the subject in a very superficial manner.

Strand a

In this strand candidates must produce a bibliography of sources they use. A significant number do not list sources used in their research for strands e, f and g. Candidates should also show how well they can use the Internet as a research tool. They should show that they can research available technologies, can refine those searches, mark pages for later return, and produce meaningful results which they have cross referenced for accuracy and bias. When listing web sources these should be url's for the actual pages of useful information rather than for website home pages.

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Strand b

Candidates who achieved well started with clear statements or aims for their survey and this focus allowed them to produce a meaningful report of their findings. Others showed the ability to sort, search and create reports without reference to why they were doing it, so failing to meet the rubric. In some Centres candidates split a single data table into two rather than using a true one to many relationship. Others set up related tables but did not make use of related data, and produced queries using only one of their tables. Some candidates carried out purposeless searches without arriving at any conclusions from their survey.

Strand c

Candidates need to show printed evidence of use of formulas and functions. Some candidates used spreadsheets merely as a tool to produce charts, whilst others merited high marks by producing coherent reports combining sections of their data tables with charts and a commentary analysing survey results. Charts used by candidates were more often appropriate to their purpose.

Strand d

Many candidates produced good work in this strand using annotated handout prints to show what media and features they had used on each slide. Candidates often created good media elements, many using sound or edited digital photographs with a few using video clips they had filmed themselves. Some Centres gave high marks when candidates had used a limited range of media, or had used links to move only forward and backwards. Clip art sounds and animations are basic features which do not satisfy the criteria for higher band marks.

Strand e

In some Centres candidates wrote in general terms rather than clearly identifying specific groups or individuals affected by developments in ICT. The specification lists minimum requirements for each mark band. Bulleted lists or brief sentences in a table structure are unlikely to reach the higher mark bands. Internet cafés or banking, for example are not specific groups although an individual customer or banking employee or evidence of study of a particular Internet café or bank are acceptable.

Strand f

A need is defined as satisfying a basic requirement whilst a benefit is an advantage of meeting these requirements. For example, candidates might write about the advantages of using email as a form of communication. At a higher level they might first give details of the particular needs that are met by email – keeping in touch with families, sending short messages between businesses, etc., and then identify some of the advantages of using email for these purposes. Many candidates identified and described advantages and disadvantages rather than benefits and needs. Whilst benefits may tie in with advantages needs do not match disadvantages.

Strand g

This strand must also be related to specific groups or individuals and a comprehensive review is needed for marks at the highest level. Some candidates still covered the disadvantages of using ICT rather than the consequences of limited or no access. For example, in the area of communications those with no access to computers and the Internet will not have the advantages of email – quick and easy communication with friends and relatives. Further explanation that this might result in people becoming more isolated, left out of activities, losing contact with friends over time, etc., is required before middle and higher band marks can be considered.

**General Certificate of Secondary Education
Applied ICT (Double Award) 1494
January 2007 Assessment Series**

Unit Threshold Marks

Unit		Maximum Mark	A*	A	B	C	D	E	F	G	U
4872	Raw	100	79	69	59	50	41	32	24	16	0
	UMS	100	90	80	70	60	50	40	30	20	0
4873	Raw	50	46	41	36	31	26	21	16	11	0
	UMS	100	90	80	70	60	50	40	30	20	0
4874	Raw	50	46	41	36	31	26	21	16	11	0
	UMS	100	90	80	70	60	50	40	30	20	0

Entry Information

Unit	Total Entry
4872	2191
4873	1094
4874	240

Specification Aggregation Results

GRADE	A*A*	AA	BB	CC	DD	EE	FF	GG	UU
UMS	270	240	210	180	150	120	90	60	0
Cum %	0.00	2.70	29.73	70.27	97.30	100.0	100.0	100.0	100

114 candidates were entered for aggregation this session

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