# APPLIED ICT

| Paper 9713/01 |
| Written A |

## General comments

It was encouraging that there were a larger number of candidates, than had been the case in previous sessions, who appeared to have been well prepared for this assessment; however, there are still a large number who were not. There were a number of very high-scoring candidates but still very many who did not perform well. There were a number of candidates who clearly lacked the ability to perform well at this level. It is still common to find candidates rote learning answers from past papers. This was particularly evident when, although questions might relate to a similar topic, the scenarios had changed markedly. In this paper, as with any exam paper at this standard, candidates are required to show a level of understanding as well as a depth of knowledge. As has been highlighted in previous reports, this cannot be achieved by simply repeating bullet points from previous mark schemes. The points listed on mark schemes are often a summary of the knowledge required to answer the question and should not be interpreted as an answer in itself. Candidates are required, in 'discuss' and 'explain' questions, to expand on the bullet points given in the mark scheme not just repeat them. They need to show an understanding of the scenario. Centres are reminded that this is 'Applied ICT' and candidate are expected apply their knowledge to the context of the scenario. It is important for candidates to realise that they need to refer back to the scenario when answering questions.

Candidates had great difficulty with questions relating to social and ethical implications as well as security threats.

## Comments on specific questions

### Question 1

**(a)** Many candidates managed to gain at least one mark for user name/account number. Many candidates were unaware of alternatives such as mother's maiden name, date of birth etc.

**(b)** A large number of candidates thought that the password was only three characters long and gave answers such as 'it would be faster to input' or 'easier to remember'. A number repeated the scenario in their answer rather than addressing it.

**(c)** Many candidates gained marks for mentioning cheap labour costs. Many others lost marks for saying it would be cheaper but failing to explain in what way. Many thought that the call Centre was targeted at Indian customers.

**(d)** A reasonable number of candidates identified the potential problems with accents but a surprising number thought that non-English speakers would be employed at a call Centre for a UK bank. Many thought that customers would be paying international call rates every time they phoned the bank and a number thought that there would be less security.

### Question 2

**(a)** Most candidates scored well, however, this question was one of many that differentiated between IGCSE candidates and AS level candidates. It is important that stock phrases such as 'unemployment' are clarified and that candidates identify the groups most at risk from this. Candidates did reasonably well on other answers but, again, learning by rote does not help with this type of question. Some candidates did not appear to realise that only certain types of bank job can be done by working from home.

**(b)** Too many candidates rephrased the question for their answers without going into sufficient detail about what types of action cause RSI etc. A worrying number wrote about safety problems.

Several answers were at a very basic IGCSE level by suggesting that users get RSI, headaches, sight problems and backache without saying how.

**(c)** Candidates struggled with this question quite often writing about how employees would rob/defraud the customers. Many just quoted the Data Protection Act principles. There were very few high scores.

**(d)** A large number of candidates wrote about how to combat the threats without going into any detail about the threats themselves. A number only wrote single word answers such as hacking or viruses. Some wrote down pharming and/or phishing without describing these in any detail.

**Question 3**

**(a)** Many candidates misread the question and thought it was a 'discuss' question. A number of candidates were able to describe three methods although some failed to notice that the scenario related to a payroll and staff record system and not a medical system. Very few went on to identify situations where each method could be used. A small minority gave one word or very simplistic answers.

**(b)** This was a difficult question for many candidates. Most were unable to define the steps involved in updating a master file. Many tried to give an overview but only succeeded in gaining a small number of marks.

**Question 4**

**(a)** A surprising number of candidates did not appear to know what relational databases consist of. Other candidates managed to gain marks by mentioning linked tables and key fields.

**(b)** Candidates often managed to get one mark for faster data retrieval, less storage space or security issues but very few were awarded more than one.

**(c)** This was a much more poorly answered question than expected. Many candidates failed to even demonstrate a basic IGCSE level of knowledge of validation. Quite a number of candidates ignored the question which asked them to use examples of fields found in a payroll file and were therefore unable to gain marks. A number managed to link a field with a validation check but were unable to describe the validation check in any detail.

**(d)** Again, most candidates gave IGCSE level answers. Most candidates just gave definitions of normal, extreme and abnormal data. Candidates ignored the requirement of the question which asked for examples of payroll data to be used. The vast majority of candidates failed to identify the improvements which might be needed.

**Question 5**

**(a)** This question was the best answered on the paper with the majority of candidates gaining 5 marks and upwards.

**(b)(i)** A straightforward question where the vast majority of candidates gained at least one mark. A number of candidates thought that video conferencing could make use of just a basic modem.

**(ii)** Many candidates gained one or two marks. Most candidates stopped at the point of connecting the equipment and logging on with few saying what would happen then.

**(c)** This question tended to be well answered with many high marks. Some candidates failed to give sufficiently details and others answered a past question by describing the advantages to the company.

# APPLIED ICT

## General comments

The majority of candidates completed all elements of the paper. There were vast differences in the range of results from Centre to Centre and from candidate to candidate within Centres. Performance on the paper was generally better than last year. There were elements of all sections of the question paper that caused candidates some problems. This paper gave a good spread of marks. Candidate errors were spread evenly over the sections of the paper.

A very small number of candidates failed to print their name, Centre number and candidate number on every document submitted for assessment. Without clear printed evidence of the author of the work, Examiners were unable to award any marks for these pages. It is not acceptable for candidates to annotate their printouts by hand with their name as there is insufficient evidence that they are the originators of the work, as opposed to collecting the work of another candidate from the printer, and annotating this with their name.

Several candidates omitted one or more of the pages from the required printouts, some partially completing the database task or submitting either the formulae view, or the values view of the spreadsheet rather than both views. A small number of candidates submitted multiple printouts for some of the tasks and failed to cross out those printouts that were draft copies. If multiple printouts are submitted, Examiners will only mark the first occurrence of each page.

A number of candidates misinterpreted the word report in the question paper. This does not necessarily refer to a report generated using an Access database but refers to a document produced for another person/audience to view. The use of a database may in some cases be the most appropriate tool for generating a report, but in many questions, for example **Question 30**, it may not.

Please note that it is not necessary to staple together the work. Work should be submitted in the ARF. Some Examiners experienced difficulty marking some pages from some Centres, as candidates had stapled all their work together in such a way that it was very difficult to separate the sheets in order to view and mark all of the work.

The introduction of a word processing task gave some problems for candidates, most demonstrated sound practical skills but failed to attain many marks on the knowledge and understanding required for this paper. Despite the question asking for the report to be in the candidate's own words, a small number of candidates copied blocks of text directly from the internet, including sites like Wikipedia that provide information with dubious reliability.

Overall the paper performed very well.

## Comments on specific questions

### Questions 2 to 6

This section was performed well by almost all candidates. The majority of candidates created the databases correctly, set the correct field names and types and included correct index fields. Relationships were generally created between the correct fields and where evidenced were set as one-to-many relationships. A number of candidates did not print detailed evidence of the relationships, they did not either show the fieldnames at both ends of the relationship (if a relationship diagram was used as evidence), or the one-to-many settings.

**Question 7**

Most candidates performed the wildcard search for *Lodge* with 100% accuracy. This field contained some long text strings and a number of candidates failed to resize the controls or columns on their reports to show all of the contents of the field in their reports.

**Question 8**

A small number of candidates did not complete this step, the majority correctly performed this calculation. A number of candidates did not use the correct fields for this calculation and gained some interesting results. A significant number of candidates did not calculate the number of whole days, this should have involved rounding the answer down, or alternative using a function such as integer. Some candidates set this as the whole number of days, but had rounded the figures up.

**Question 9**

This was performed well by almost all candidates. There were a number of typographical errors, including case errors and spelling errors in the title. A number of candidates did not sort this data as specified in the question paper, some performed a single key sort and others sorted by *Days* then *Resort* rather than *Resort* then *Days*.

**Question 10**

This question was omitted by a significant number of candidates. Many candidates who did attempt the question selected the customers with more than one booking correctly, then introduced errors in either the average price of the holidays or in sorting the data, the most common error in sorting was sorting on forename rather than surname. Many candidates attempted to group the data, but few used the number of holidays booked as the criteria to group by. Most of the candidates who grouped the data did calculate the average cost of the holidays, but fewer showed the number of customers within the group. Some failed to show currency format and a significant number introduced typographical errors, including case errors and spelling errors within the title.

**Questions 11 to 14**

These questions were generally well done by the majority of candidates. Marks were frequently lost for typographical errors and the truncation of the calculated controls holding the fields, in some cases only a fraction of the data was visible for the Examiner to mark. Few candidates searched correctly for the flights in or out of London, most found only 3 of the 5 required records. The *Balance Due* field was often present, but in a number of cases this field was not displayed as currency to match the field types used when the tables were created.

**Questions 15 to 18**

Of those candidates who submitted either printout for the spreadsheets section, almost all fully completed steps 15 to 18 with no problems. Errors that were discovered included the use of case when entering the data into the discount table, for example: entering 'code' instead of 'Code'.

**Question 19**

This was performed well by many candidates, although a number of candidates formatted some but not all of the cells specified and a small number of candidates did not set these cells to 2 decimal places.

**Question 20**

This was performed well by almost all candidates. There were a number of typographical errors, including case errors and spelling errors.

**Question 21**

There were a number of responses to this question. Many candidates looked up the value using LOOKUP or HLOOKUP formulae. This give the correct results, although for those candidates who used Excel a number omitted the False parameter required to obtain the correct results. Some candidates used nested IF statements and gained only partial credit for this question, as at AS Level candidates should be able to determine the most suitable formulae/functions to use for a particular task.

**Question 22**

This was performed well by almost all candidates.

**Question 23**

This was performed well by almost all candidates, although a very small number of candidates introduced brackets in the wrong place or reversed the cell references.

**Question 24**

This was performed well by most of the candidates.

**Question 25**

Surprisingly, a number of candidates did not format the correct cells as specified. This task required UK pounds (£) but some candidates used their local currencies. A number of candidates formatted the discount percentage column as a percentage but set the number of decimal places to either 0 or 2 rather than the 1 specified in the question paper.

**Question 26**

Many candidates searched the data correctly to extract data that would fit on a single page. Some candidates did however omit this step prior to printing.

**Question 27**

This was performed well by almost all candidates although some candidates still placed their names and numbers in the header or on the worksheet.

**Question 28**

A significant number of candidates failed to get full marks for this question, a number omitted this completely from the value printout and more candidates failed to ensure that the selected data fitted on a single page. Some candidates did not resize the columns to ensure that all the data and labels were fully visible.

**Question 29**

A significant number of candidates failed to get full marks for this question, a number omitted this completely from the formulae printout. Some candidates did not resize the columns to ensure that all the data and formulae were fully visible.

**Question 30**

This question caused some candidates problems. Most demonstrated sound practical skills word processing skills, but marks were only awarded for this section to candidates who had produced more that 100 words. Despite the question specifying between 100 and 300 words, a number of candidates submitted far more than this, some copied and pasted from the internet. In the question it specified 'in your own words' which means that any text copied from any source would not be acceptable as an answer. The question was specific about its target audience. Few candidates produced a report written with the directors in mind. The language and context of the presented material has to be appropriate for this audience. Many candidates gained marks for explaining what a corporate house style is, a number explained what a corporate house style could include and how it could be used. However, very few candidates managed to attain any marks for explaining how this could be applied to the company as specified in the question. This should have involved looking at the business (a holiday company) and suggesting how the styles could be used in the context of

the company.  The better candidates gave answers like "...recommend a yellow and blue background to the logo to represent the sea and sand.  This could be used on all advertising posters and painted in the reception areas of the companies offices...".

# APPLIED ICT

Paper 9713/03
Written B

### General comments

The standard of work for this session was better than in previous sessions. It was good to see that Centres are teaching candidates the level of detail and style of response required at this level. Most of the questions should have been quite familiar to the candidates; however, there are still a few candidates and Centres where the responses do not even meet the standard of an IGCSE answer. At this level it is expected that candidates will provide evidence of subject knowledge and understanding in the context of the scenario. Some candidates appear to be rote learning the textbook and are not applying there knowledge to the context. For example '…analyst will design the outputs and inputs depending on the user's requirements' shows far less understanding than 'The analyst must consider the outputs from the new system, such as the printer. Should they use a dot-matrix printer, which will provide multipart print out. Should it be an inkjet? Or would a colour laser be best in this fashion design scenario as it does not smudge.' This report shows different quality of responses from this session to show teachers where candidates have earned marks and to assist in the teaching.

The language used by candidates was good and caused no concern to marking the scripts. Fewer candidates left sections blank than in previous sessions.

### Comments on specific questions

### Question 1

**(a)** This question uses a topic that has appeared before in this paper. This topic is one that candidates will not have met at IGCSE and they should have been able to produce higher level answers in this A2 paper. The question relates to using ICT and answers ranged from low level responses about interviewing through to detailed discussion of how CAPI or CATI would be applied in this scenario.

Examples of responses for this section were:-

> The data needs to be transferred therefore ICT would certainly be useful...They fix their website through this and spread advertisements using this procedure.

> It keeps the record of the hours worked and the pay is calculated.
> *(Typical wrong answers with no understanding and no marks.)*

> They may create an interactive survey on their home page which shows to customers a bar chart of the current results after they did the survey.

> They could also use CAWI (Computer Aided Web Interview where clients log into a website and fill out a form, usually multiple choice. Computers then analyse the gathered information.
> *These last 2 give much better responses and gained marks.*

**(b)** Some candidates appeared to be quoting previous mark-schemes relating to the design phase without contextualising their answers to the given scenario. There were examples of candidates who did give an applied answer and were awarded high marks as a result.

An extract from one of the better responses is shown below:

The analyst would design the hardware requirements such as the servers required, switching and high speed internet connection. In addition they would produce the software requirements such as web server and email server software.

**(c)** Too many candidates seemed to fail to understand that, to be awarded a mark, more was expected than just naming a method of implementing a new system. The question asked for descriptions of two appropriate implementation strategies. To obtain more than the two marks available for descriptions, candidates also had to explain why that method would be appropriate in the context of Rock-ICT.

### Question 2

This question was not a difficult one and candidates should be able to relate to the scenario - a music web site. Amazon.com is a typical example. Candidates were more aware of what is meant by features this session and gave some good answers.

**(a)** This was well answered, but often candidates confused content with a feature.

An extract from one of the better responses is shown below:

> The customer would expect to use a shopping basket which remembered the items that he intended to buy. There would be a wish list of items that the customer might purchase in the future and there would be a purchase history for the customer. There could also be a feature to tell the customer that "people who bought this item also bought that item"
> *(note: this is not just recalling a previous mark scheme but answers have been applied to a music website).*

**(b)** This section was quite simple but some candidates failed to provide responses at an appropriate level.

### Question 3

This was a straight forward question about the social aspects for the individual in shopping online not just using the Internet. Candidates should have scored well here. Marks were often gained for the identification, but few expansion marks were given. Only a minority of candidates mentioned the digital divide or even alluded to it; most concentrated on hacking and computer fraud. Nobody referred to the changing job patterns or the addictiveness of online. A few wrote about the DPA. Candidates must be taught to read the questions twice and think before they answer such basic concepts.

### Question 4

Nearly all answers generic, with no reference to the scenario. Several candidates seemed to think that the software would ring a bell when a task fell behind schedule – might make workers catch up to get rid of the noise! Many candidates showed some knowledge of Gannt and PERT charts, but many answers were confused and unclear. It was clear, that apart from the few candidates who gained full marks for this question, very few were sufficiently knowledgeable about this topic.

### Question 5

A question about output devices required in the scenario.

**(a)(i)** A specific device that few knew about. By far, the worst answered question in the paper. Of all the papers seen, no candidate had any real idea or experience of 3D printers. Most candidates gained no marks for this question. Candidates should be prepared to answer questions about specific pieces of hardware or software which are listed in the syllabus.

   **(ii)** Too many responses of the 'better, cheaper, quicker' variety without any expansion. Nearly all the marks given here related to testing.

**(b)** This should have been much easier than it proved to be, but again some candidates failed to expand using the scenario. Some candidates gave answers that were not output devices.

## Question 6

This used video conferencing as the scenario. Candidates often seemed unaware of how a business system would work and gave responses based on webcams. Big international companies are concerned about the safety of their staff and the costs of travelling to meetings and will use dedicated video conferencing suites. A very high bandwidth is required at this level of video conferencing. Using a laptop webcam may be suitable for a salesperson on the road but would not being used in this context.

**(a)** Although candidates were able to give standard IGCSE level answers to the question very few candidates related their answers to the given scenario. Consequently, most candidates achieved very few, if any, marks for this question.

**(b)** This section required a discussion of the advances in technology that have influenced the growth in video conferencing. This part of the question was better answered, most candidates explained that developments in technology had led to better quality and that globalisation had increased the need for communication. The quality of the responses differed but most candidates got some marks.

## Question 7

This question was about the basic elements which make up a computer network. Overall this was a poorly answered question; few candidates achieved marks across all four parts of the question. There seemed to be considerable confusion between the different devices and little appreciation of what telnet was. Many thought it to be a method of joining telephones into a network.

**(i)** Hubs – few candidates gained more than one mark was gained for this question – usually for the connection of all the computers.

**(ii)** Routers – few candidates achieved marks here. Those who did mentioned the LAN joining the WAN or connecting through to the internet. Many candidates relied or their knowledge of home cable routers.

**(iii)** Switches – most candidates produced very confused answers with little correct knowledge demonstrated.

**(iv)** Telnet – with the exception of perhaps 1% or 2% of the candidates, nobody showed any knowledge at all regarding telnet, and the majority assumed it was the use of the telephone system to join to the internet.

## Question 8

This question specifically states that the expert system is for planning routes. Answers such as "expert systems work 24/7 and need no toilet breaks" shows a poor level of subject knowledge and understanding.

**(a)** Most candidates produced only generalised answers regarding expert systems with no contextualisation to the scenario provided.

**(b)** Most candidates produced only IGCSE type answers, with no reference to the scenario. An few candidates did mention maps or route data in the knowledge base and/or updating the system with details of new roads or road-works etc. Most candidates seemed to be no idea of the rules needed to generate a route or any other connection to scenario. Again, the very large majority of the candidates gave a generic answer for building an expert system without relating it to the scenario. Consequently, very few, marks were awarded for this question. Candidate often mistake 'creating' a system with its 'use'; this is unacceptable at this level.

## Question 9

**(a)** An easy question about using ICT to advertise the business.

Most candidates gained three marks at most, for answers including website, emails, posters and pop-ups. Most candidates were able to list ways in which the company could use ICT to advertise, however, a significant number talked about fliers and posters without any mention of how ICT would be used in their production

**(b)** A topic that should have been familiar to the candidates. Whilst all candidates seemed to know what mail-merge was and how it would be used, there was often not enough detail in the answers to gain any marks. Most candidates realised that the data would come from a database, but few linked this up with using the customer database which would already be in existence. Many candidates suggested creating a new database for the mail-merge operation rather that query the existing database.

**Question 10**

The question required candidates to show their understanding of the security of a network. This topic expected to be one that would be a familiar for most of the candidates.

**(a)** Very few marks were awarded. Many candidates gave a generic answer regarding intranets or seemed confused about what an intranet is; even those who realised that it is a private internet did not seem able to give any reasons why it would be used.

**(b)** A question about basic security measures that BrazilParcel could take. Most candidates were able to list the ways in which security could be improved but very few were able to expand this to a description that was worthy of a mark. Nearly every candidate included anti-virus software in their list, also usernames and passwords, but failed to say that the password then granted the user particular access rights.

# APPLIED ICT

## General comments

Candidates were, in the main, very well prepared for the practical tasks in this paper and some showed a clear understanding of the integration of the tasks and the progression of the outcomes. Centres should however ensure that all candidates recognise that the paper is intended to simulate a business scenario and that the printouts and evidence should reflect this. A number of marks were lost by candidates who provided evidence of their application skills but failed to meet the specific criteria detailed in the question paper and produce suitable "professional" solutions. In the syllabus, assessment objective B1 for the A2 level specifies:

> *"the ways in which an extensive range of organisations use information and communication technology"*

With this in mind, an emphasis on the nature and format of business documents would be well advised. In particular, candidates would do well to remember that their audience for any explanations or interfaces which they develop in the course of the assessment should be regarded as the intended end user i.e. a non-ICT specialist.

## Comments on specific questions

### Questions 1–3 Database set-up and structure

Almost all candidates completed this section well, but very simple marks were lost by some candidates who did not provide evidence of using the field types specified. A number of candidates also failed to establish optimal relationships by "normalising" the tables efficiently as required by the syllabus in assessment objective 11 a(i). In this paper, subsequent tasks were not adversely affected; in general, it could be expected that any deficiencies in this regard could make using the database to provide complex solutions more difficult.

Very few candidates provided good explanations of why the types of relationships were created by the application. Theoretical details involving terms such as "Primary keys" and "Foreign keys" were not required. A suitable explanation would cover the reason the type of relationship was created. For example "... a Many-One" relationship was created because **One** "BoatModel" could appear in **Many** "CruiseRegions....".

### Question 4 – Simple report

The task specified a printed report; a screenshot of the output was not acceptable.

As a part of the business scenario, candidates need to provide documents of professional quality. Copy typing of titles and the layout of the data is important. Candidates often lost marks by some carelessness in this regard but in general this task was completed well.

### Questions 5 and 6 –Parameter query used to create a report

Most candidates were well prepared for these tasks and provided evidence of both the search criteria and a suitable prompt. It is worth stressing, however, that in practical tasks such as this, the intended user of the simulated system being created should be regarded as a non-ICT specialist business user and the prompts should, therefore, be full, clear and professional in tone.

Again a printed document was specified and successful candidates were careful about the grouping, sorting and layout of the data.

**Question 7 – Menu for the selection and production of the documents**

Whilst most candidates provided a working Form or Switchboard menu, very few included descriptions that would be suitable for a end user. Candidates should be reminded that a Menu is intended as an interface for a user not involved in the creation of the system or indeed necessarily skilled in the use of ICT. Thus explanations should be detailed enough to inform the user of the content and purpose of the resultant documents.

**Questions 8, 9 and 10– Automating the production of a letter**

The most suitable solution to these tasks was the recording of a macro to complete a document exported from the database application in task 8 using the features created in tasks 5 and 6. As such, the solution required prompts for user input that should not be visible in the final printout. A disappointing number of candidates created solutions that showed that they were unfamiliar with accepted layout and content of business letters and thus lost marks for the inclusion of the prompts as "labels" for sections such as the address and the name of the intended recipient. Centres might do well to draw the attention of candidates to the aims of the syllabus which refer to "..the use of ICT in vocational contexts...".

Many candidates also failed to include valid instructions for the insertion of the logo at the top-right position and had clearly moved the image manually before printing. Successful candidates realised that inserting the image first made the task easier. In general, candidates should be guided to examine the scope of such tasks before creating a solution.

A fully correct solution to task 10 task required successful solutions to tasks 5, 6 and 9, plus the accurate insertion of the recipient's details and some manipulation of text. Again, accuracy and a professional outcome were key to gaining all the marks. Most candidates' solutions contained the correct exported data and reflected an emphasis on database application skills. Some consideration of the purpose of the finished document and the suitability of their solutions would have enabled candidates to gain further marks.

**Question 11 – a mail merge.**

The selection of recipients for the mail merge was by a database search or a filter. Evidence of the selection method was required. Screenshots of the final recipients list was not acceptable as evidence of the selection method because they provide no evidence of the method used and could be created from a manually typed data source.

Details of the required fields and other inclusions were supplied in the template and most candidates demonstrated the necessary level of skill to achieve a successful mail merge. Many, however, failed to proof–read the documents and provide properly formatted and finished letters. In addition, some candidates confused the "BoatName" and "BoatModel" fields.

**Evidence document.**

Many candidates failed to produce a single document to provide their evidence and resorted to occasional pages with screenshots as required. It should be noted that the question paper specifically states that candidates should use an evidence document, and candidates were even given the filename for this document. Examiners expected to see the document printed as a whole with the evidence sequenced as specified in the question paper. In this instance, as long as their candidate details were shown on each of the pages, credit was given wherever possible. It would be sensible for Centres to remind candidates to adhere more closely to the instructions in future.