## APPLIED ICT

Paper 9713/11
Written A

## Key Messages

Overall candidates did better this year than in previous years.
Candidates showed a higher level of understanding throughout, though there are still some areas of the syllabus which appear to be problematic for many candidates. This was particularly noticeable with topics such as control systems and some aspects of systems design, relational databases and phone banking.

Areas which seem to have been well covered were aspects of the use of robot arms, researching a current system, aspects of online banking and methods of advertising.

The habit of not refer to the scenario when answering questions was still present, but to a lesser extent. It was most evident in Question 1 where candidates repeated answers from a past mark scheme and referred to food mixing. There are few questions which can be answered without actually referring back to the scenario.

Candidates are to be encouraged to put detail in their answers rather than offering general or vague responses and should explain clearly what they mean by their answer.

Overall, however, marks were distributed quite well with the more competent candidates being able to score highly on the paper. Overall the questions differentiated well.

## Comments on specific questions

## Question 1

This question was still not answered well. However, candidates' responses were better than in previous years with similar questions. Part (a) was answered better than part (b).
(a) Most candidates understood the difference between the two types of process usually gaining two marks as a result. However, some of the examples given were not from the scenario. Many candidates repeated the question in the answer in terms of using the word 'continuous'. Some candidates gave robotic examples for continuous process control and some mixed up examples from discrete and continuous. Candidates who had revised this topic scored well on this question but there were still many vague answers and some managed to reverse the right answers so that maintaining the temperature was a discrete process and the use of industrial robots continuous. Most candidates were able to distinguish between the "on/off" of discrete process control and the "unending" characteristic of continuous process control but the majority were unable to reach beyond this to provide sensible examples.
(b) This question was quite poorly answered with one tenth of all candidates not even attempting it. Once again with questions regarding microprocessor control candidates often gave a general answer rather than giving specific answers as required by the mark scheme. Not many candidates defined PID as being a proportional-integral-derivative algorithm but most candidates answering the question had a reasonable idea of its function. Most candidates (who attempted the question), understood the nature of PLC/PID in the maintaining of room temperature continuously. There was a tendency not to answer the question in the depth required with frequent use of the term 'air conditioning' instead of compressor and/or actuator. Some candidates worryingly thought the sensors controlled the system. Very few mentioned proportional changes or a calculation and seemed to answer using IGCSE type answers.

## Question 2

The responses to this question were fairly mixed with candidates gaining low marks on part (c) but scoring better with the other parts.
(a) Some weak answers were given on what was expected to be a fairly straightforward question. There were many examples of unsuitable end effectors such as spray guns, welding guns and even screwdrivers. It was apparent that a number of candidates had not read the question carefully and had answered with any example of an end effector they could think of.
(b) This part of the question was also not as well answered as expected. A number of candidates repeated their answer from part (a). Candidates often did not elaborate their answers giving answers such as polishers to polish. Some gave sanders to polish the car, cameras to watch the workers and a paintbrush to paint the car. One in seven candidates did not attempt the question.
(c) This part of the question produced the weakest answers with, again, one seventh of the candidates not attempting it. Candidates either understood the nature of this question or they did not. Those that did scored well whereas those that did not often failed to gain any marks at all. Some missed the point about programmers using sensors and thought that in this case robot arms were programmed by writing code.
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## Question 3

This question was quite well answered with many candidates gaining a number of marks. The responses to part (a) were better on the whole than those for parts (b) and (c).
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(c) Many candidates found this one of the most difficult questions on the paper to answer. One in six candidates did not even attempt it and those that did, struggled to provide meaningful answers. There was some understanding of Designing data collection forms/screen layouts, where the answer ' the user requirements' was evidenced and also with Designing validation routines, where the answer 'type of data' could be found.

## Question 4

This question was not as well answered as expected with a number of candidates scoring low marks. Most able candidates scored well throughout the question.
(a) This part was fairly well answered. Better candidates could explain this while the weaker candidates resorted to 'it's the most important field...' and similar vague answers. Many

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candidates did not answer the question properly and did not relate the key field to a field in the scenario.
(b) A surprising number of candidates confused the linking of tables using a key field with the linking of databases/files. Additionally many candidates gave the ordering of data in a table as a reason for using a key field. The use of the key field for sorting was commonly mentioned.
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## Question 5

Overall, this question was reasonably well answered with candidates doing better on parts (a) and (b) rather than parts (c) and (d).
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This question was quite well answered, particularly part (b).
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(c) Many candidates gained marks here but it was very disappointing to see a number of answers describe the cost of travel when candidates had been told in the question to ignore the travelling aspect. Some candidates gave responses which listed features of online banking rather than how using online banking would benefit the customer.

## Question 7

This question was fairly well answered though most candidates did better on part (b) than part (a)
(a) The majority of candidates achieved at least two marks but some still included 'banking' in their answer despite the question saying 'other' organisations.
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## APPLIED ICT

Paper 9713/12
Written A

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## APPLIED ICT

Paper 9713/13
Written A

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## APPLIED ICT

Paper 9713/02
Practical Test A

## General comments

The majority of candidates attempted and completed all elements of the paper. There were significant differences in the range of results from Centre to Centre and from candidate to candidate within Centres. The paper gave a good spread of marks. Candidate errors were spread evenly over the sections of the paper, although the application of candidates' knowledge to produce a report on documents edited by multiple users, caused a number of candidates some issues. A significant number of candidates omitted this section.

Some candidates failed to print their name, Centre number and candidate number on some of the documents 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 no real evidence that they are the originators of the work.

A small number of candidates omitted one or more of the pages from the required printouts. Some partially completed the database report but only printed the first page. A small number of candidates submitted multiple printouts for some of the tasks and failed to cross out those printouts that were draft copies. Where multiple printouts are submitted, examiners will only mark the first occurrence of each page.

The word processing tasks gave some problems for candidates. While many demonstrated sound practical skills in the test tables, some candidates failed to achieve many marks on the application of their knowledge and understanding. A significant number of candidates' copied text directly from a variety of Internet sources for the multi-user document question and submitted this as their own work. Examiners will give no credit for sections of text copied and pasted from the Internet, however in the context of the document it was acceptable to paraphrase elements of the text or use direct quotation to support their observations and give evidence and hence credence to their answers. Overall the paper performed very well.

## Comments on specific questions

## Question 1

This question was completed well by most candidates, as evidenced by their subsequent printouts of this evidence document.

## Question 2

Although almost all candidates imported the data files into the database in step 3, not all of them planned the design of their tables, field names, relationships and data types. There were a wide range of errors found in response to this question, many because candidates appeared to rush into providing an answer rather than following the instruction to "Look at the data in the files...". Examination of this data gave candidates clues to what was needed to create a meaningful data structure. Some of the information was also provided in the table where some field names, a key field and data types were given. From this information, many candidates used identical syntax for field names (with initial capitalisation and the _ symbol used between words) allowing no spaces. Other errors were found in planned data structures with the planning for Zip_Code and Telephone as numeric rather than alphanumeric data as neither of these fields could be used for $\overline{\mathrm{a}}$ calculation. Key fields were not always designed to be applied to the correct fields.

## Question 3

Almost all candidates imported the data files into the database. As mentioned in Question 2 most candidates' table or data structures contained errors. Some candidates left the tables with the column headings like A, B and C set as field names. A number of candidates allowed the software to apply the key field which resulted in an ID field being used as the key field rather than one they had planned from step 2.

## Question 4

Although this question was generally well completed, a significant number of candidates did not show evidence of all of the data types and formats. For example: in the Tutor table, few candidates showed the data structures for both the Salary and Contract fields.

## Question 5

This question was completed well by the vast majority of candidates. A small number of candidates did not show evidence of the one-to-many relationship.

## Question 6

This relationship was created well by the majority of candidates; like Question 5, a small number of candidates did not show evidence of the relationship types. Some candidates selected the wrong fields for this relationship and therefore the package that they were using allocated an "Indeterminate" relationship type.

## Question 7

Although it was clear from other printouts that the relationships had been created, not all candidates produced screenshot evidence to show the creation of the relationships and their types.

## Question 8

This question caused significant issues for many candidates, because of errors introduced during Questions 2 and 3. In order to be able to validate this field as specified, the import for the field type had to be set as a numeric field and NOT as an "Integer" or "Long Integer" data type. If the data type for the "Contract" field had been set as numeric (e.g. Double), a validation rule like $>0$ AND $<=1$ could be applied. The error message if the validation rule was not met should have a clear indication to the user that an error had occurred and what the acceptable range of data was. The most common error was candidates who had set the validation rule as "Between 0 and 1 ", which does not meet the requirements of both ends of the acceptable range.

## Question 9

Most candidates who completed this question successfully produced a summary query counting the number of entries in the record field for each of the course levels. This was frequently seen with the data column hidden. Of those who attempted this question, the majority were successful, although a significant number of candidates submitted no printout evidence of their attempt/s at the question. Almost all candidates who attempted this question sorted this list into alphabetical order. Many used the list to set up a long string in the validation rule manually entering "BA" or "B... etc. until all 12 valid courses were tested. This was an acceptable answer, some candidates preferred to use the list as a lookup list forcing the data entry to be only items from the list rather than allowing a combo box where any data entry was accepted. Of these solutions only the first method gained candidates full marks because of the requirements for an appropriate error message where data was rejected.

## Question 10

This was completed as specified by almost all candidates.

## Question 11

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## Question 12

This was completed as specified by almost all candidates.

## Question 13

Despite clear instructions to include the required elements in the footer, a number of candidates set these elements into the header of the document. Other errors were less frequent, although several candidates did not place an automated filename with the full file path in the footer. A small number of candidates reversed the instructions for left and right. Most candidates aligned these to the page margins.

## Question 14

This question was completed with $100 \%$ accuracy by most candidates although a small number of text entry and accuracy errors were found. A small number of candidates used a serif rather than a sans-serif font.

## Question 15

Almost all candidates created an 8 by 4 table, most merged the correct cells but few entered the text to "look like this", as alignment was frequently incorrect, as well as the lack of italics on "Range check" and initial capitalisation on some words.

## Question 16

Almost all candidates created a 16 by 4 table, many merged the correct cells but few entered the text to "look like this", as alignment was frequently incorrect, as well as the lack of italics on "Lookup check" and initial capitalisation on some words.

## Question 17

A significant number of candidates created the tables, had successfully completed setting the validation rules but did not complete the test tables.

## Question 18

This was completed as specified by almost all candidates.

## Question 19

This question was completed with mixed results and allowed candidates freedom to select any one of a number of correct methods. Most attained the correct fields from their relational database, some candidates created new fields with the forenames and surnames of the tutor and/or the candidates merged into a single field. One area which candidates frequently omitted was the requirement to differentiate between the candidates' names and the tutors' names. Grouping was rarely completed as specified; however sorting into the correct order within the grouping was often completed with 100\% accuracy. A number of candidates had the room criteria in the title of the report but did not search for the candidates using only those rooms.

## Question 20

This question required the candidates to search for faculties where candidates have enrolled and perform a summary calculation to count the number of those candidates. Few candidates successfully performed both of these elements, although many completed either the search or calculation and achieved partial marks. Most candidates who completed this question (or got a partially correct response) were successful in sorting the data by Faculty.

## Question 21

A number of candidates used the data extracted in step 20 to produce the chart, rather than further refining the search to Faculties where 20 or more candidates had enrolled. The chart was frequently completed correctly; but the labelling of the chart was completed well by far fewer candidates. Labelling should include an appropriate chart title, axis labels and axis titles. In the case of a single data set a legend was not required, although if it was present candidates were not required to display a value axis title.

## Question 22

This question was poorly answered by many candidates who created very brief responses that failed to explain how they would control the document, often with answers relating to a third party. Candidates who extracted excerpts from web pages were not given credit for their work if it was submitted directly from the source/s. A small number of candidates did produce excellent answers with detailed explanations of version control, tracked changes and comments set within the context of the question scenario.

## Question 23

This was completed as specified by almost all candidates.

## APPLIED ICT

## Paper 9713/31

Written B

## Key Messages

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Many candidates appeared to know the syllabus content quite well but did not apply their knowledge to the given scenarios and to the context set in the questions. Candidates must read the scenarios carefully and when answering the questions they must apply their knowledge and not give generic responses.

Further, candidates must read the question carefully before attempting to answer it; there were instances where it was apparent that candidates were not answering the question as set on the question paper.

When answering the questions, it is important that candidates read the rubric and give the required number of responses where appropriate. Candidates who give too many or too few responses risk losing marks.

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## Question 1

(a) This question was about the services that a local government could provide online. The scenario stated that these services would offer information and facilities for the citizens. Many candidates correctly identified an appropriate online service and were able to describe that service.
(b) (i) This question was quite well answered with many candidates correctly stating that it is a perceived gap for one mark and then identifying both aspects of the divide - those that have and those that do not have, access to IT, for the second of the two marks. However, too many candidates did not appear to know about the digital divide at all.
(ii) This question asked candidates to explain ways in which local governments can reduce the effects of the digital divide. Many candidates gave statements with no explanations or expansions so failed to achieve more than three marks. Statements such as "fund new computers" would only achieve one mark as there is no explanation as to why this is important or what effect it might have. Candidates who added that the funding of more computers would allow more people to have access to IT etc achieved a second mark for the explanation.

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(a) (i) Few candidates could explain what an intranet actually is, giving vague statements such as a "network in a building". Most candidates stated correctly that an intranet is a private network but very few achieved a second mark.
(ii) Most candidates achieved at least two marks for identifying suitable protocols and many stated a suitable use for each. The most common answers were TCP/IP, FTP, SSH, HTTP and UDP but many incorrectly gave URL or UTP.
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(c) This question asked for benefits to the company and not to the employees or guests. Most candidates correctly made this distinction and gave good descriptions of the benefits.

Many candidates confused an intranet with a LAN and gave responses that were generic and not related to the scenario and candidates are reminded that they must read the scenarios carefully and when answering the questions they must apply their knowledge to the scenario.

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This question was quite well answered and most candidates managed to describe the steps needed to book a room. However, many candidates did not score the full five marks because the responses were repeated e.g. several descriptions of room types still achieved just a single mark.

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(a) This question was about the problems of disabled people using the online booking system. Most candidates scored quite well on this question giving good responses that described the problems that disabled people have when using online booking systems. However, many candidates described the disabilities but not the problems or did not specify the nature of the disability but simply gave the problem.
(b) This question was answered quite well by many candidates but a significant number of candidates failed to read the question properly and described hardware and software designed to assist disabled people, but that would not be found on the website. The question was about features that would be included on the website and answers that referred to specialised software and hardware did not gain credit.

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(a) Most candidates could state what the term "Wi-Fi" meant but few could describe it any further than stating it was "wireless". Better answers described the use of radio waves and the ability to connect mobile devices.
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## APPLIED ICT

Paper 9713/32
Written B

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## APPLIED ICT

Paper 9713/33
Written B

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## APPLIED ICT

Paper 9713/04
Practical Test B

## General comments

The nature of this paper differs significantly from those at IGCSE and AS levels in that it requires application of the skills learnt at those levels to simulated business tasks. The lack of prescription of methods provides for discrimination of solutions in terms of efficiency and business orientation.

In general candidates seemed well prepared for this session in terms of the skills required and it was very pleasing to note the variety of innovative solutions to the tasks. It is still clear, however, that some Centres need to emphasise the presentation of outcomes and that documents printed must be fit for purpose.

Another issue with respect to marks lost by candidates was the presentation of the evidence required and specified in the question paper. Whilst most candidates did provide evidence, it was often not coherently presented or collated and this may have contributed to omissions.

## Comments on specific questions

## Task 1a - Update a membership list

In the first task candidates were required to determine which members had lapsed and should be excluded from the latest membership list. A wide variety of valid solutions to this task were submitted. All solutions that provided the correct data were acceptable since unlike previous papers most of the tasks were "one-off" operations and not required to be repeatable in subsequent cycles. The majority of candidates managed this task successfully but a few lost marks by not satisfying the requirements specified in the question paper i.e. a printout not a screenshot and only the correct fields displayed.

Task 1b - display the popularity of the music genres in a pie chart
This task was completed well by almost all candidates and seemed to pose no problems apart from providing the evidence required.

## Task 1c - Create a table of attendances and average ratings

This task entailed a simple count of the entries and the average of the ratings for each performance. The task was, however, misunderstood by many candidates who counted and averaged the number of entries for each rating value instead.

In this task, the question paper specified that the printout was requested by the manager. In a case like this, candidates must ensure that the printout is fit for that purpose by including some contextual text.

## Task 1d - Mail merge memos to Heads of department

The key to this task was the selection of recipients from the Employees.csv file. The question paper specified that the recipients should be selected as part of the merge and not by manual "deselecting" etc. For some candidates it was not always clear from the evidence that they had used the correct method. Many candidates used the "Skiplf" mergefield, but the print options of their word processing application did not provide enough evidence in the printout of the merge document. Some candidates realised this and provided a screenshot of the merge document showing the fields or screenshots of completing the appropriate dialog boxes. The question paper did not specify how the evidence was to be provided so these options were quite acceptable.

Almost all candidates attempted this task and whilst many failed to satisfy both selection criteria, most printed memos that had the correct inclusions and were fit for purpose.

It is worth noting, that as in previous sessions, too many candidates failed to "proof" their outcomes against the criteria specified and the data provided. Simple inspection would show when too many memos had been generated.

Task 2a - Count the attendance of individual members and apply conditional formatting
Many candidates failed to provide the evidence for the count explicitly. Fortunately for them, the correct formula was often noticed in the formula bar in screenshots provided as evidence of applying the conditional formatting. Nevertheless, this task was well done by many but it is worth noting that the use of a default '3color' scale was not acceptable since the minimum, midpoint and maximum values were not the values required.

## Task 2b - Select members and create a list

The more skilled candidates realised that this list was to be the basis of the mail merge exercise in task $\mathbf{2 c}$, so all the data required needed to be in a single source.

The first requirement of this task was simply to select the Premium members who had no recorded music choices. No method was prescribed for this task but most candidates used the filter facility of the spreadsheet application. Whilst it was clear that most candidates had selected the recipients successfully not many provided evidence of the application of both criteria. The evidence was required and no assumptions of method will be made from correct results when the evidence required is specified in the question paper.

Aggregating the data from task 2a was most efficiently carried out by a simple Lookup formula but many candidates chose to use a Count formula and recalculate the attendances. Whilst this method provided the correct data a mark for efficiency was lost.

## Task 2c - Mail merge "reminder" letters

Most candidates inserted the fields in the merge document template successfully. Very few did not adhere to the spacing, layout and formatting specified.

However, most candidates did not configure the conditional merge fields successfully.
Since there were three criteria only two conditional merge fields are needed, the most efficient solution was for the conditional merge fields to be nested, but this was not a requirement, as this is not possible in all word processing applications. Some candidates managed to use a simple linear configuration by using the "null" return in the first conditional mergefield but most seemed confused by the logic and many had multiple versions of the conditional text shown in the printed letters.

An acceptable solution is shown below:
\{IF\{MERGEFIELD Number_of_Attendances \}>3 "Many thanks for your regular support and participation. " """" $\}$ \{IF\{MERGEFIELD Number_of_Attendances \}=0 "We hope our programme for next season is of more interest to you. " "Thank you for your support."\}

Once again simple proofing of the printed documents would have indicated the errors and even manual editing of the letters before printing would have gained the marks for the correct output.

Also worth noting is that with the exception of generating labels, in order to minimise printing problems any mail merge task likely to be set will probably restrict the number of intended recipients to only a few. Candidates whose recipient list exceeds this could be advised to check for errors. For example, in task 1d the correct number of recipients was five and in this task there should have been four recipients.

## Task 3 - Create and annotate a macro to automate the creation of lists for the mail merge

The macro required was created successfully by many candidates, but again, very few managed to annotate the individual sections as required. Some candidates exported the text to a word processing application and inserted comments or text, but this is not an acceptable solution. It is reasonable to expect candidates

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working at A2 level to have the skills necessary to insert programmers' comments and prepare documented code that others may follow and amend or augment.

## In conclusion

For this session the main issues for Centres to bear in mind seem to be:

- The importance of providing clear evidence as specified
- The need to "proof" outcomes
- Consideration of the likely number of recipients for any mail merge task
- The production of documents that could be considered as fit for a business purpose.

