

INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 0417/11
Theory

Key messages

Statistically this paper was a good paper with candidates able to answer many of the questions which covered a range of marks in a variety of different topics. As with previous sessions some of the topics had not been set previously whilst others have been set several times. The returning trend is for candidates not to make an attempt at the question and just leave it blank. As with previous series some candidates still use brand names rather than generic names like a spreadsheet, or a database. Brand names are ignored, for example if a candidate writes spreadsheets use formulas it gains a mark, but MS Excel uses formulas does not. This series there was an increase in the number of candidates that missed the top line of the answer lines only to write below the answer lines to finish answering the question, even cramming the writing at the end of the answer lines. Some candidates used a blank page or extra sheets to finish answering the question even though this may only have been a couple of words.

The range of marks for the paper was 1 to 66 marks which was in line with recent series. This reflected that the paper was fair for all candidates.

It is important that candidates read the question carefully before answering it as marks are awarded for answering the question that has been set. It is also important not to repeat the question in the answer as this also gains no credit as well as wasting space for the written answer. Many candidates use rote-learning, but scenarios and topics change every season as do the question types set, therefore candidates may rote-learn one type of question only to be faced with another type in the actual paper. Candidates who performed well in this paper used specific and detailed language when replying to 'describe', 'evaluate' and 'discuss' type questions. The number of discussion/describe/compare type answers where candidates split the answer into advantages and disadvantages has reduced in this session, with only a few centres using the technique. This type of layout does not give enough scope to gain high marks.

Some candidates wrote detailed, long answers but did not refer their answer back to the question. It is important that the expansion to the answer relates to the answer that was set. Some questions do look like previous questions but may be different therefore it is important to read the current question before answering it. It is also a good idea for candidates to check back as they answer the question to ensure they are still on topic and that they have not inadvertently repeated elements of the question in their answer.

General comments

The paper gave all candidates an opportunity to demonstrate their knowledge and understanding of ICT using a wide variety of topics.

When a question indicates a specific number of answers, candidates should only write one answer in each allocated space as the first answer written is the only one that is marked, for that space. Also, any extra answers placed below the numbered responses are ignored.

Candidates need to be clear in the answers given rather than using basic statements like it is quicker. A good rule of thumb is to add 'because' and then give a valid reason.

Sometimes extra space for answers is needed therefore when this happens it is important that the candidate clearly writes where the extra part is written and writes the question number on the extra work. The paper is marked electronically and if the candidate writes on extra sheets or on the blank pages/spaces in the examination paper the extra elements or key points within it may be missed. Some candidates show rough working outs on the paper; these should be neatly crossed out.

In this series there has been an increase in candidates using light blue ink to answer the questions. Sometimes pages are scanned in colour and this can lead to issues with Examiners reading the answer given. Also, in this series there has been a decrease in the quality of the handwriting in writing of the answers. The Examiners will attempt to read bad handwriting, but sometimes key words can be lost if the Examiner cannot decipher the word.

Comments on specific questions

Question 1

This was a straightforward question that was attempted by nearly all the candidates. Candidates were able to identify actuator and printer as two output devices. However some candidates gave other answers including webcam, which is an input device.

Question 2

Overall, this was a challenging question although most candidates attempted it.

- (a) (i) The question appeared to be quite straightforward in describing word processing. Candidates gained at least one mark for writing about users creating and editing text. However, some candidates found it challenging to gain the second mark.
- (ii) Many candidates confused control software with the CPU or the control panel. However, many candidates did attempt the question.
- (iii) This question was attempted by many of the candidates who produced good answers with many of the candidates able to write that apps helped users to perform tasks. As with the previous parts of this question candidates gained at least one mark but found it challenging to gain the second mark.
- (b) This question was well answered with many candidates able to answer that digital data was read and processed by a computer. Some candidates stated that humans could not read digital data; humans can but it is more difficult to understand it.
- (c) This question was more challenging than **part (b)** with some candidates writing that analogue data could not be understood by a computer. Some candidates gave the better answer that it could be used to control devices.

Question 3

Most candidates were able to attempt this question although it was challenging for many. The question was about the use of smartphones for making videocalls. The setters of the question thought that the question related more to what the candidates would understand from their day-to-day life. In order to produce good marks in the question, candidates needed to write about the pros and cons of using smartphones in this way. Some candidates wrote totally about smartphones and therefore did not answer the question fully. Those candidates that wrote about the portability of the smartphone or that the screen size was small therefore the user could not clearly see who the person was talking too gained good marks. In order to improve in this type of answer candidates need to expand on the basic answer given with expansions and reasoning.

Some candidates understood that the internet was needed and that the signal must be stable and reliable. Candidates need to make sure that they use the words 'internet connection' rather than just the word 'internet'. Many candidates understood that the peripherals were integrated into the smartphone which is a good correct answer; expanding this answer to state that that the user did not need to purchase extra items therefore reducing the cost is a better answer that gained credit.

Question 4

Most candidates attempted this question which was straightforward. Normal, extreme and abnormal test data was often well understood.

- (a) Many candidates answered this question found it quite challenging. Some candidates still mix up extreme test data, i.e. test data that is on the boundary of acceptability with extreme as in X-sports where test data would be far away from the boundaries.
- (b) This part of the question asked candidates to write down one piece of test data for the types given. Some candidates wrote down an explanation of the test data rather than writing down the example.
- (b)(i) Candidates answered this part of the question well. Where candidates gave a range of numbers only the first one was marked whether it was correct or not as the question asked for one piece of test data.
- (ii) Candidates were able to attempt this part of the question but found it more challenging. This was probably due to the answers given in **part (a)**.
- (iii) In previous series the Examiners were lenient in this type of question allowing any answer, however in this session the Examiners only allowed answers that related to the question. For example, in the range 1 – 10 an example could be 11. Those candidates that wrote an explanation gained no credit even though anything written could be abnormal data. As with the other parts, those candidates that gave a range of answers only the first one was marked.

Question 5

Nearly all the candidates attempted this question although they found it challenging. The question was about streaming videos and file compression.

- (a) This question was challenging although many candidates attempted to answer it. The Examiners felt that video streaming was on topic for most candidates. This question involved many candidates using brand names in their answers, which are not credited in answers. Some candidates used personal experiences of watching illegal copies of films on doubtful platforms in poor quality rather than answering the question that had been set. There were some good comparisons with other ways of watching the videos.
- (b) As with **part (a)** this was a challenging question. It may have been due to the positioning of the question following on from video streaming. Candidates that did well in this question expanded on the basic answer given. Some wrote about saving space but to improve on this the answer needs to be clear in that it refers to storage space. The most common correct answer was that it reduced the size of the file.

Question 6

This question was a challenging question, but many candidates were able to attempt it. The question was a standard question on the use of satellite navigation (satnav) systems, but the scenario dealt with taxis. This meant that many of the standard answers about satnav systems could be used. There is still confusion between GPS, satnav and GIS with candidates mixing them up. There is also a tendency for candidates to write that the satellite sends signals directly to the taxi or that the taxi can be in direct contact with the satellite. In order to improve in this question candidates must expand on their answers or give clear reasoning. Good answers involved an explanation of the taxi driver using the satnav to find the best route and being able to give a time of arrival.

Question 7

This topic has been set in previous sessions and as with this session candidates found it very challenging. There were a number of answers that wrote about houses. It was clear that some candidates understood the topic but could not expand on their answers and gain the higher marks.

Question 8

Many candidates were able to attempt this question although **part (a)** was answered better than the other two parts.

- (a) This part of the question was better answered than the other two parts of the question. Many candidates were able to write down parallel running.
- (b) Candidates found this question quite challenging although some candidates produced good answers whilst others mixed up pilot implementation with phased implementation.
- (c) Candidates found this part quite challenging with some candidates mixing up phased implementation with pilot implementation.

Question 9

This was a very challenging question about network hubs.

- (a) This part of the question was very challenging with many of the marks coming from general answers relating to connecting devices together rather than the operation of a hub. Some of the answers given could have been used for **part (b)**. In this session the Examiners were lenient and allowed these answers, but this may not happen in future series.
- (b) As with **part (a)** this question was very challenging. As the question was linked to **part (a)** candidates that struggled to answer **part (a)** had issues with this question.

Question 10

This question was related to the system life cycle with each part looking at a different aspect. The first parts looked at analysis and design whilst **parts (c) and (d)** was about testing. Overall, this was a challenging question for many of the candidates.

- (a) (i) This question related to observation and was fairly well answered by the candidates. Many candidates understood the topic but had issues with explaining the answers, answering with the keyword from the question. For example, observation involves observing the workers, rather than using a word like watching. Some candidates gave the correct answer of an analyst watching an employee using the system but could not expand upon this answer to gain the second mark.
- (ii) This part of the answer was more challenging than the first part with some candidates knowing the answer but having difficulty expressing themselves without using the words from the question. Answers that include the keyword from the question will gain no credit. For example, an interview involves an analyst interviewing a manager. The definition of interviews often was not specific enough to distinguish between an interview or any other information gathering process, such as using questionnaires. An interview involves a two-way conversation, whereas a questionnaire involves asking questions which an employee answers but not necessarily at the time of asking.
- (b) This was a very challenging question about what needs to be designed in a new system. Some candidates wrote down four items which appeared to be guesses.
- (c) Some candidates were able to answer this question which related to why a system needed to be tested. Many candidates were able to give the answer that it could be used to see if the solution worked properly or to fix errors.
- (d) This was also a very challenging question relating to the items needed in a test plan. Many candidates appeared to guess the answer. Some candidates read the examples listed and then wrote the opposite. The example given was expected results some candidates unexpected results.

Question 11

The question was fairly well answered. The question related to the operation of a spell checker. Some candidates, however, expanded their answers to include grammar checks which was not part of the question therefore could not gain credit.

- (a) This was the better answered of the two parts of this question. Many candidates appeared to understand the operation of the spellchecker, in that it 'read' a word and compared it to its dictionary. However, the question implied that the candidate was checking the work and therefore was a manual operation. Some candidates stated that the spellchecker automatically corrected the word. In this series the Examiners were lenient in the alternative to 'dictionary, allowing database; this may not be the case in future series.
- (b) This part looked at words that did not appear in the dictionary, like words that were badly spelt, or different languages or even proper nouns. As the question topic related to biology coursework the Examiners expected written in a different language like Latin, but candidates wrote that it could be written in UK-American. Examiners did not penalise these types of answers.

Question 12

This was a fairly new topic although there were a few good answers given.

- (a) This part of the question was fairly well answered with candidates explaining what was meant by netiquette. Many candidates gained marks for stating that it was internet etiquette although the Examiners allowed network etiquette and other variations, although this may not be the case in future series. In many cases this was the only mark awarded for this question.

Some candidates, mis-read the question which related to using netiquette to send emails. Many answers involved using the internet or matters concerning hacking, viruses etc. In order to do well in these types of questions candidates need to read the question before answering it then answer the question relating it back to the stem.

- (b) As with **part (a)** many of the answers did not relate back to the topic of the question, namely sending emails. Candidates were asked to describe with an example three rules used in netiquette when sending emails, one rule 'sending the same message multiple times' was given as an example. Some candidates copied this example or a variant of it in their answer and did not gain credit. The Examiners were fairly lenient with the answers given allowing examples that implied the use of emails although this may not be the same in future series.

Some of the examples given were a repeat of the rule that was but written in a different way. In order to gain good marks in questions like these candidates need to make the example distinctly different from that of the question.

Question 13

Many candidates were able to answer this question well. The topics of the question was hacking and the use of passwords. Many candidates were able to draw on both personal knowledge and taught work.

- (a) Many candidates were able to gain at least one mark for the explanation of hacking, namely unauthorised access to a computer system. Some candidates were able to give the consequences of hacking like copying personal data. Many candidates are still writing that one of the consequences of hacking is that data can be stolen. If data is stolen, then it is removed; hacking usually copies data but does not remove it.
- (b) This part was well answered by the candidates with many able to gain two of the three marks available. Many candidates gave good answers in that they explained strong passwords as well as passwords should not be given to others or contain personal data.

Question 14

This question was also fairly well answered by the candidates. Candidates were asked to give an example of the three types of generic data listed. **Parts (a)** and **(b)** were better answered than **part (c)**. However, there were a few brand names given.

INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 0417/12
Theory

Key messages

Statistically this paper was a good paper with candidates able to answer many of the questions. The questions covered a range of marks in a variety of different topics. As with previous sessions some of the topics had not been set previously whilst others have been set several times. There has been an increase this year in candidates not attempting questions and leaving the answer space blank. As with previous series some candidates still use brand names rather than generic names like a spreadsheet, or a database. Brand names are ignored by the Examiners. In this series there was an increase in the number of candidates that missed the top line of the answer lines only to cram their answer below the answer lines or even using the blank page to finish answering the question even though this may only be a couple of words.

The range of marks for the paper was 0 to 66 marks which was in line with recent series. This reflected that the paper was fair for all candidates.

To improve the marks awarded in this paper candidates must read the question carefully before answering it as marks are awarded for answering the question that has been set. It is a good idea for candidates to check back as they answer the question to ensure they are still on topic and that they have not inadvertently repeated elements of the question in their answer. In this paper one question related to SSL – secure socket layer. Secure socket layer was written in the question, but many candidates repeated the in there answer as SSL is secure socket layer.

It is also important not to re-write the question in the answer as this wastes space for the written answer. Many candidates use rote learning, but scenarios and topics change every season as do the question types set, therefore candidates may rote learn one type of question only to be faced with another type in the actual paper. Candidates who performed well in this paper used specific and detailed language when replying to 'describe', 'evaluate' and 'discuss' type questions.

General comments

The paper gave all candidates an opportunity to demonstrate their knowledge and understanding of ICT using a wide variety of topics.

When a question indicates a specific number of answers, candidates should only write one answer in each allocated space as the first answer written is the only one that is marked, for that space. Also, any extra answers placed below the numbered responses are ignored.

When a question asks a candidate to circle 2 answers, the candidate's selections need to be clear. If the candidate changes their mind about their answer, then it should be obvious which is the crossed-out answer and then which is the answer that is to mark.

Candidates need to be clear in the answers given rather than using basic statements like it is quicker. A good rule of thumb is to add 'because' and then give a valid reason.

There appears to be a need for some candidates to expand their answers on to other parts of the examination paper. Some candidates use this extra area to write one or two words that could have been written below the actual answer given. It is important that if extra space is needed the candidate clearly writes where the extra part is written and writes the question number on the extra work. The paper is marked electronically and if the candidate writes on extra sheets or on the blank pages/spaces in the examination paper the extra elements or key points within it may be missed.

In this series there has been an increase in candidates using light blue ink to answer the questions. Sometimes pages are scanned in colour, and this leads to issues with Examiners reading the answer given. Also, in this series there has been a decrease in the quality of the handwriting in writing of the answers. The Examiners will attempt to read bad handwriting, but sometimes key words can be lost if the Examiner cannot decipher the word.

Candidates should also ensure that they check the command word of each question and then tailor their answer accordingly. Questions that ask for the candidate to describe, discuss or explain should be written in prose and not tabular form with advantages/benefits in one column and then disadvantages/drawbacks in the other. This was seen less this session, but it was still evident, and candidates did not then gain all the marks available.

Comments on specific questions

Question 1

This was a well answered question with most candidates gaining one mark. This question asked candidates to circle direct data entry devices which were QR scanner and RFID reader.

Question 2

Overall, this was a challenging question. The question related to application software.

- (a) (i) The question about Computer Aided Design. Some candidates answered the question by simply repeating the keywords, i.e. designing using a computer. Those candidates that achieved well in this question gave answers related to designing of models and visualising how they would look in real life.
 - (ii) Many candidates answered that measurement software measured therefore repeating the question within their answer. Those candidates that achieved well in this question made it clear that measurement software uses the data supplied from sensors and then went on to explain how this data was processed and displayed.
 - (iii) This was better answered than the first two parts even though some candidates repeated the question in their answer, for example video editing software edits videos. Sometimes it is difficult in a question of this type not to repeat the question but those candidates that gave examples like cropping the video and other example where able to gain good marks.
- (b) This question was about the purpose of application software and was well answered by many of the candidates. Candidates correctly described the role of application software in helping users perform specific tasks. Some candidates gave valid examples to further support their answer.

Question 3

This question was quite well answered by many of the candidates who were able to gain three of the six marks available. The question related to the use of handprints to register candidates. Some candidates reverted to the use of fingerprints and where this occurred the Examiners marked the first instance wrong and then gave a follow through mark for other instances, this may not be the case in future series. Some candidates gained the full six marks, with some very well-structured answers. Those candidates that achieved good marks in this question gave expanded points for both the benefits and the drawbacks for using such a system. On the positive side they explained that it was more secure as each candidate would have a different handprint and then gave the negative points about the difficult of reading the handprint if it was dirty or damaged. Candidates also gave good answers relating to the time taken to initially set up the system then expanded upon this by adding that each candidate would need their handprint saved by the system. For candidates to improve on their answers detailed explanations need to be given.

Question 4

This question mainly about testing a system was challenging for the candidates. Some parts of the question included new topics. Many candidates misread the question and referred to how the tests were to be carried out rather than why the elements had to be tested.

- (a) (i) This question referred to why a file structure needed to be tested. This was a new topic on the paper and as such many candidates found the question challenging.
- (ii) This part of the question asked candidates why validation routines needed to be tested. This was better answered than other parts of **part (a)** but was still challenging for many of the candidates. Those candidates that wrote that the validation routines needed to be tested so that the data was in the correct format produced good marks.
- (iii) As with the other parts of this question candidates found this part very challenging. The question asked candidates to explain why an output format was tested. This was a new topic. Those candidates that achieved well in this question wrote about the readability by the user.
- (b) This question was well answered by many of the candidates. The question related to abnormal test data. Most candidates achieved the mark for mentioning data being outside the limits of accessibility.
- (c) Some candidates found this question about the need for technical documentation quite challenging.
- (d) This question was quite well answered by the candidates. Candidates were given three components from the technical guide, these had been used in the question and then asked to state three other components. The components given were: The file structure, validation routines and output formats. Some candidates used these answers as clues to other components for example output formats were given therefore, they answered with input formats. However, some candidates gave verification routines as the opposite to validation routines, but verification routines do not exist. A few candidates misread the questions and wrote down the examples as their answer. In order to do well in this type of numbered question candidates must only give one answer per line, others will be ignored and not to exceed the three components asked for, others will be ignored.

Question 5

This question was quite well answered by the candidates with more candidates gaining marks for **part (a)**.

- (a) Candidates gave some good answers as to how the risks could be minimised. Some candidates wrote that drink should not be taken into a computer room but in order to gain credit they must go onto write that liquid should not be placed near the computer equipment.
- (b) This part was more challenging than **part (a)** and dealt with trailing leads. Some candidates misread the question and thought trailing leads meant some kind of security issue – leading people to fake websites. Some candidates thought that trailing leads was about being scammed on the internet: giving answers like ‘do not allow unknown friend requests, and do not give personal information to strangers’. Other candidates mixed up trailing leads and placing heavy objects on a table. Those candidates that gained good marks wrote about the cables being placed in ducts or that wireless technology should be used.

Question 6

This question on phishing and pharming was quite a challenging question for the candidates.

- (a) This was fairly well answered by the candidates. In order to gain higher marks in this question, candidates need to give both similarities and differences between phishing and pharming as well as expanding on the original statements given. Some candidates made really good comments stating that phishing attacks originated from a legitimate looking email being received which contained a link that was clicked on led to a fake website. Pharming originated from a code placed in the user's computer. When a user typed in the URL it led them to a fake website. Both were threats to data and gaining access to personal data. Some candidates stated that personal data was stolen; this is not correct as phishing and pharming involves receiving personal data.
- (i) and (ii) Even though this question did not include numbers in the answer lines it asked for two precautions therefore the first two are marked irrespective of them being correct or incorrect.
- (b)(i) This part of the question was very challenging. Candidates appear from their answers to understand pharming more than phishing. Some candidates gave good answers like the use of email filters although some candidates wrote spam filters which would not reduce phishing attacks. In order to gain higher marks in this question, candidates need to be more specific in their answers rather than giving general answers.
- (ii) Whereas **part (i)** asked about phishing this question referred to pharming and the precautions that should be taken to reduce the risk. From the answers given it appeared that the candidates understood pharming better than phishing. One good answer that was given was the use of an up-to-date anti-malware software. Anti-virus software will remove some types of malware therefore the Examiners allowed anti-virus as a correct point.

Question 7

This question about satellite navigation systems was a little challenging for candidates. It is important that candidates read the question that has been set rather than looking for a keyword in this case satellite navigation and then answering the question. The question related to using a smartphone whilst walking in remote areas, some candidates misread the question and wrote about sat nav and GPS in cars.

Many candidates showed a good understanding of satellite navigation. Answers also frequently included a mention of the benefits of satnav over maps. Some candidates mentioned battery issues or loss of signal, but in order to gain the higher marks these should be linked back to the question or to the consequence of walkers becoming lost. Some candidates answered the question from their own viewpoint so answers like using the smartphone would lead to users falling over or tripping up rather than answers relating to the use of the satnav on the smartphone.

Question 8

This question was fairly well answered by many of the candidates.

- (a) As the answers for **part (a)** are copied from the table the Examiners expect that the field name is exact including capital letters and underscores.
- (a) (i) This part of the question was well answered. Some candidates that knew the answer used upper case P for publication or missed out the underscores.
- (ii) This part of the question was very well answered with many candidates gaining the mark for Price.
- (iii) As with other parts of the question this was well answered by the candidates. However, some candidates had issues with the syntax and did not copy the field name exactly from the table.
- (b) This part of the question was challenging for a lot of the candidates. The question asked why both validation and verification were needed. Some candidates wrote that verification is used to show if data is correct, this is not the case as it only checks if data is copied correctly as the source may be incorrect. Validation checks if data is reasonable and follows the set criteria. Both are used to reduce errors do not eliminate them. In the past verification has been set as a topic but some candidates are giving answers like verification is used to verify someone in a security setting. This issue has only started to appear recently.
- (c) This part was quite well answered by the candidates. The answers the Examiners were looking for were both double data entry or visual verification.

Question 9

Overall, this question was quite well answered with a good spread of marks over **parts (a)** and **(b)** with **part (c)** being answered better.

- (a) Many candidates gained at least a mark in the question. Some candidates understood that a switch helped form a network and that data from the switch could be sent to a specific device. Some candidates that understood the concept wrote that the switch helped form a network rather than a LAN; network on its own was in the question. Some candidates thought that the network switch turned the network on and off. In order to gain the higher marks in this question, candidates need to be more specific in their answers.
- (b) Many candidates answered the question from their own experience which gave general answers rather than technical ones. It is important that in questions of this type that candidates read the question thoroughly before answering it.
- (c) This question was well answered by many of the candidates who correctly gave either LAN or WLAN.

Question 10

Many candidates found this question quite challenging as this was a technical question. However, **part (b)** was answered well.

- (a) This was a technical question about Secure Socket Layer and was challenging for many of the candidates. Many candidates misread the stem of the question which stated that SSL was a secure socket layer. In the question it asked what was meant by SSL, nearly all candidates wrote it is secure socket layer which was in the question. Some candidates accurately described SSL as a protocol that encrypts communication between a web browser and server. However, some candidates lacked technical precision and merely repeated phrases like adds an extra layer of security without explaining how SSL works.
- (b) This part of the question was well answered by many of the candidates. The actual answer the Examiners were looking for was a green locked padlock would be displayed on the webpage. In this session Examiners were a little lenient with the description of the padlock, but this may not be the case in the future. Another correct answer was HTTPS appearing on the URL.
- (c) Surprisingly this question on the use of a search engine was challenging for many of the candidates. Candidates were able to give the positives of using a search engine but gave less answers on the negatives. Many candidates gave correct answers relating to the speed of the search and good negatives relating to information overload.

Question 11

This question was well answered with a good spread of marks across all parts.

- (a) The answers gave a variety of different ways in which the data could be transferred. Some candidates misread the question and gave answers related to the example given. There were many trade names given rather than using generic names. It was clear from the answers given that candidates understood the question but, in some cases, could not explain it clearly enough to gain credit. One example of this was the use of SSD and HDD which are correct but for this answer required portable or external to be added. Good answers given were the use of email attachments and pen drive. If a candidate wrote 'send the email to yourself' on its own the Examiners gave the mark, but this may not be the same in future series.
- (b) This question was well answered with many candidates achieving two out of the three marks available. The Examiners were looking for answers like log onto the cloud account, upload the file then the user goes home and logs into the cloud account and downloads the files. In order to gain all the marks for this question candidates need to write their answers clearly and with enough detail. Answers like log in gained no credit as it could be log into the computer but log into the cloud account did gain credit. Many candidates thought out the answer well and perhaps used their own experiences of transferring files in order to give a good answer.

Question 12

This question was challenging, not because the question was difficult but due to many candidates misreading the question. The question relating to the processing that took place when money was being withdrawn from a cash machines, so answers like type in the PIN was not correct as it was an input. The options are displayed were outputs therefore no credit could be given. In order to achieve high marks for the question, candidates needed to read the question and then give answers related to processing like checking the amount available in the account, checking if the daily limit had been exceeded. Some candidates were unclear about where the money came from the card, the machine or the bank.

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Key messages

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Candidates need to be clear in the answers given rather than using basic statements like it is quicker. A good rule of thumb is to add 'because' and then give a valid reason.

If extra pages are used for answers, it is important the candidate clearly writes where the extra part is written and writes the question number on the extra work. The paper is marked electronically and if the candidate writes on extra sheets or on the blank pages/spaces in the examination paper the extra elements or key points within it may be missed. Some candidates show rough working outs on the paper; these should be neatly crossed out.

In this series there has been an increase in candidates using light blue ink to answer the questions. Sometimes pages are scanned in colour and this can lead to issues with Examiners reading the answer given. Also, in this series there has been a decrease in the quality of the handwriting in writing the answers. The Examiners will attempt to read bad handwriting, but sometimes key words can be lost if the Examiner cannot decipher the word.

When a question asks a candidate to circle 2 answers then the candidate's selections need to be clear and if the candidate changes their mind about their answer, then it should be obvious which is the crossed-out answer and then which is the answer that is to be marked.

The paper uses answer lines therefore the writing of lots of words around the sides of successive questions or at the bottom of the page away from the actual answer space should be discouraged.

Comments on specific questions

Question 1

This question was fairly well answered with most candidates gaining at least one mark. The question related to optical storage devices. Some candidates looked at the word storage without reading optical.

Question 2

This question related to applications and system software. As a whole the question was quite well answered.

- (a) This question was quite well answered although some candidates re-wrote the question in the answer, namely audio editing. Many candidates gained at least one mark for identifying a feature of audio editing but could not expand their answers to gain the second mark. In order for candidates to improve the answering of questions of this type candidates should not re-word the questions in the answer.
- (b) This question was well answered with candidates gaining at least one mark. However, proprietary names did appear from time to time, particularly with respect to types of operating systems. Many gained both marks but some of those that did not repeat the answer i.e. OS and BIOS.

Question 3

This question was challenging for many candidates. The question related to the use of a plotter and was a new topic for the examination paper. Candidates tended to give better answers for the negative points of plotters like it was noisy and had a large footprint rather than the positive points. Some candidates wrote about a plotter producing graphs rather than architectural drawings. Some candidates clearly understood the concept of a plotter whilst others did not and thought it was a 3D printer. Some candidates split the question lines in two therefore splitting the positives from the negatives, this type of format does not allow candidates to gain the higher marks.

Question 4

This question on testing was quite well answered overall especially for **parts (b) and (c)**.

- (a) (i) This question was a new topic for the examination and therefore many candidates found the question quite challenging. The question related to the testing of data structures. Some candidates wrote their answer by repeating the question. For example, data structures ensure that the data is structured properly rather than stored properly.
- (ii) As with **part (i)** this was a new topic and therefore many candidates found the question quite challenging. The question related to testing input formats. Some candidates wrote about testing whether the data was correct rather than the data being entered correctly.
- (b) This question was answered well by many of the candidates. The question related to what is meant by normal test data.
- (c) This question about extreme test data was well answered by many of the candidates. Many candidates answered this question with a single letter whilst others wrote a sentence and embedded the letter in it. For this session the Examiners were lenient when this happens, but this may not be the same in future sessions.

Question 5

This question was fairly well answered by the candidates. The question was about user documentation. There was an even spread of marks between the sections.

- (a) The question asked why user documentation was needed. The question was worth one mark therefore this should be taken into account when answering it and an essay is not required.
- (b) Many candidates gained at least one mark for this question. **Part (a)** asked for the reason user documentation was needed whereas this part asked for three components of user documentation. An example was given of one of the components; input formats so it was quite easy for candidates to write output format for one mark. Candidates must remember there are specific terms for the list of elements in a user documentation and these should be used.
- (c) This was a comparison question where the candidates had to compare between a printed booklet and an e-Publication. The use of the word 'advantage' relates to comparison whereas 'benefit' does not require a comparison. In order to produce the higher marks in this question, candidates must compare or imply a comparison in their answers. Popular correct answers were cheaper to produce, and e-Publications are interactive.

Question 6

Surprisingly this was a challenging question, with more candidates answering **part (a)** rather than **part (b)**.

- (a) This part was well answered with many candidates understand how to minimise the risk of suffering from RSI.
- (b) This part was more challenging than **part (a)**. In previous sessions the Examiners have allowed take breaks and lowering the brightness of the screen, but both these answers are subjective therefore nowadays we only allow reduce the brightness to match the room brightness to gain the mark.

Question 7

This question was very challenging for many of the candidates. **Part (a)** included a new topic on private clouds but was based on cloud computing. **Part (b)** on control and management on the cloud had been set as a topic previously, but candidates struggle with the concept of this.

- (a) This was a challenging question with many candidates only managing to gain one mark. This was a new topic for the paper and sometimes this can affect the quality of the answers that candidates give. Some candidates understood the restrictions that a private cloud placed on its users, however some candidate thought that it was a private cloud for one person. Some candidates answered in general terms about the cloud but did not refer back to the question which was about private clouds.
- (b) This was also a challenging question for many of the candidates. This topic has been set a few times in recent examinations, but candidates rarely gain good marks on this topic. Candidates that scored well on this question gave general answers then expanded on their answer giving more detail. The question asked candidates to 'Describe how data can be stored and managed using cloud computing'. In order to gain high marks, the candidates must answer both parts of the question namely control for the first set of marks and manage for the second set. Many candidates were able to score marks for control but not for manage. So, answers like upload the data and save it on remote servers gained marks but others logging in and receiving a copy that can be synced were few and far between.

Question 8

Computer models as a topic had been set many times therefore it was a surprise to the Examiners that many candidates found this question very challenging. Many candidates misread the question and answered about weather forecasting rather than computer models, some candidates thought that the computer model was a 3D prototype of the real thing therefore giving answers like it saved materials or saved the cost of building the real thing or even that it was safer than building the real thing. Perhaps one way of teaching topics of this type is in context therefore teach computer models using scenarios this will help the candidates to match the model to the topic and hence improve their marks.

Question 9

This was a challenging question overall with candidates doing better on **part (a)** rather than **part (b)**.

- (a) This question related to the benefits of using a 3-letter code rather than a full name. The Examiners were surprised that many candidates found it challenging many only gaining a mark from the three that were available. Some candidates stated the reasons without expanding on them, therefore understanding the topic but not expressing the answer in enough detail. This topic had been set many times before. Good answers included saving time rather than writing out the full name and saving computer memory.
- (b) This was a very challenging question on evaluation. The question gave an example of a task and asked for other tasks carried out during evaluation of a system. Candidates were able to state the tasks but expanding on these were more difficult.

Question 10

This question was answered well by the candidates with the main issue being that of sensitive data.

- (a) This part of the question was well answered with many candidates understanding that personal data could be seen by others, but sensitive data could not.
- (b) This was well answered by many of the candidates. One issue was the use of age as an example of personal data, age is not personal data, but date of birth is.
- (c) This was a challenging question for many of the candidates. Many candidates mixed up personal data with sensitive data.

Question 11

This was a challenging question with only **part (b)** gaining good marks.

- (a) This was a very challenging question even though the topic had been set many times in previous sessions. Those candidates that did well in the question stated the comment and then expanded upon it. Some candidates misread the question which about the reliability of information on the internet and then added answers referring to other sources not on the internet.

Many candidates misunderstood this question and wrote about how to verify/evaluate the details of the smart TV e.g. check its specification, price etc. rather than about the reliability of information found on the internet.
- (b) This question was well answered by many of the candidates who gave the answer of file compression. Some candidates correctly stated that the file format could be changed but did not expand on the answer.
- (c) (i) This was a very challenging question about section breaks. Many candidates mixed up section breaks with paragraph breaks and seemed to think that a section break was placed to split up the document for aesthetic reasons.

(ii) This question was very challenging for many of the candidates even though the topic had been set many times. Many candidates explained that it was a margin but did not write extra margin as margin was in the question. Those candidates that did well in the question stated that it was an extra margin and then why it was needed.

Question 12

This question was quite challenging even though both types of databases have been set on the papers previously. Candidates seem to understand relational databases more than flat file databases. Candidates understood that a relational database used both primary and foreign keys and that separate tables could be linked to form a relationship. Flat file databases do not include tables even though some candidates thought that they did, all the data is stored in the database. Using the correct terminology is very important in questions of this type; in a relational database two tables are connected together rather than two databases or files for example.

Question 13

Overall, this was a challenging question with **part (b)** gaining more marks than the other parts of the question. The question related to functions and formulas.

- (a) This question was very challenging for many of the candidates. A function is contained in a formula. A formula starts with an equal sign and was written by the user.
- (b)(i) This was well answered by many of the candidates. The Examiners in this session ignored the brackets placed on the function but this may not be the case in future series.
 - (ii) This was well answered by the majority of the candidates but not as well answered as **part (a)**. Some candidates understood the concept of a formula but missed out the = sign.
- (c)(i) This question was very challenging; the question was about relative cell referencing. Some candidates understood the concept but had issues expressing themselves.
 - (ii) This was a challenging question for many of the candidates. Those that did not understand the concept of relative cell referencing had issues with this part of the question. Many candidates realised that this was an issue that occurred in replicating but were unable to find the correct vocabulary in explaining exactly what the problem would be.

Question 14

This question on web development layers was fairly well answered by the candidates. Some candidates gave the alternative names for the layers as the second point.

INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 0417/21
Practical Test

Key messages

- Candidates must enter accurately text in bold on the question paper.
- Candidates must be able to distinguish between the typeface categories of sans-serif font and serif types and select a named font for the type specified.
- Candidates must be able to differentiate between left and right when placing objects onto slides.
- Candidates must use proofing techniques to identify errors and ensure consistency of presentation in their documents.
- Candidates must retain existing styles applied to document recall text.
- Candidates must apply their action button hyperlink to the text provided and make sure their evidence captures both the selected text and the file link.
- Candidates must ensure they include their identification details in tasks before printing as instructed on the question paper.
- Candidates must produce legible screenshots which are large enough to be read and show the outcome of an action rather than the skill process.
- Candidates must print their Evidence Document as this contains supporting evidence that could substantially improve their grade.

General comments

Generally, a good standard of work was seen. Most candidates appeared to be well prepared for this examination and demonstrated a good understanding of the skills tested. The paper gave a good spread of marks and candidate errors were spread evenly over the sections of the paper. The majority of candidates attempted all tasks but where tasks were omitted it tended to be the database labels or the chart in the presentation. A few candidates continue to submit work without their typed identification details which cannot be marked. The Evidence Document is often printed with miniature or cropped screenshots making it difficult to assess the evidence they are showing.

Candidates must be able to distinguish between the typeface categories of serif and sans-serif font types. These are not the actual names of font styles but categories of font type with specific attributes. Candidates must be able to select an appropriate font for the font type specified.

Text to be entered by the candidate as part of a task is displayed in bold on the question paper. Marks are available for accurate data entry of this text which must be keyed exactly as shown, including punctuation and capitalisation. Candidates are advised to carefully check their data entry to ensure it matches the text on the question paper. Common errors included incorrect capitalisation, incorrect or missing characters, omission of spaces, truncated headings and superfluous punctuation.

Candidates are instructed to produce screenshots to evidence the ICT skills that cannot be assessed through the printed product alone. These screenshots must display the outcome of an action and not the process so, for example, the saved word processing document must be seen in the file list within the folder – the 'Save As' dialogue box is insufficient as the save process is incomplete. Screenshot evidence is often too small and/or faint to be read even using magnification devices. Candidates must ensure that all screenshots can be easily read with the naked eye and centres should ensure there is sufficient ink in the printer for candidates to produce legible printouts. Candidates should take care when cropping and resizing screenshots to ensure important elements are still shown, such as primary keys and all the fields in the database table structure.

The question paper prompts candidates to include their name, centre number and candidate number on all tasks prior to printing. Without clear printed evidence of the author of the work marks cannot be awarded. It is not acceptable for candidates to annotate their printouts by hand as this is insufficient to prove they are the originators of the work.

Some centres submitted stapled work which should be avoided. Hole-punching work and securing it with treasury tags or string is permitted but care should be taken not to obscure text with the punch holes. It is not necessary to put the individual ARFs in separate envelopes or plastic wallets. Centres should return the Supervisor's Report Folder with the candidates' work. This identifies the software used and can be helpful if issues were experienced during the practical test. The candidates' work must be submitted in the original hard-copy printed Assessment Record Folders that are provided to centres. Printed or photocopied Assessment Record Folders should not be used.

Comments on specific questions

Task 1 – *The Evidence Document*

An evidence document was created and used by most candidates to store screenshot evidence. Occasionally, the screenshots were too small or faint to read, or essential evidence had been cropped out. A small number did not print identification details on every page of the document so marks could only be awarded for pages where the identification details were printed. A small minority did not present the evidence document for marking.

Task 2 – *Document*

Question 1

Most candidates opened the correct file and most saved it correctly with the required file name. A few candidates incorrectly saved it in the original RTF format rather than the format of the word processing software being used, and a few did not enter the filename exactly as shown on the question paper. Most candidates produced a screenshot of the folder contents after the file had been saved which provided the evidence required. Occasionally, no evidence of the file type was seen. Most candidates retained the page setup settings as instructed. A few candidates made changes to one or more of the paragraph styles that had already been created and applied to the recall text, even though the question paper stated that no changes should be made to these.

Question 2

The majority of candidates entered an automated page number centre aligned in the header of the document. Occasionally, an automated field had not been used with the keyed number 1 appearing on all pages. Some candidates used a style of numbering that included the word '*Page*' which was acceptable, providing centre alignment within the page margin was maintained on all pages. The footer details were usually entered correctly, right aligned with the page margins and displayed on one line. Occasionally, the keyed text contained capitalisation or spelling errors. Not all candidates included a space after the colon, and some forced a hard return so their details appeared on a new line. A few entered only their name and did not include the centre and candidate number. Candidates who used the built-in content control did not always remove superfluous text or placeholders in the header and/or footer areas.

Question 3

Setting the required text to be two equally spaced columns with the correct spacing between the columns was generally done well. Not all candidates controlled the text displayed in columns, with some applying the two-column layout to the entire document or including the final paragraph in the column selection. Several did not include the last full stop in their selection. The initial column break was occasionally inserted below rather than above the subheading and sometimes a page break was inserted instead of a section break. The space between the columns was not always changed from the default value.

Question 4

Most candidates applied bullets to the specified text and any consistent bullet style was accepted. Most candidates successfully indented the bullets by the required distance from the left margin although

occasionally the text instead of the bullets was indented or the indent was less than 2.5 centimetres. The list was not always displayed in single line spacing with a 6 point space after the last item in the list.

Question 5

Most candidates located the table and deleted the correct column. A few candidates deleted the data but left the empty column in place.

Question 6

Sorting the table data into ascending order of the second column and maintaining data integrity was generally not completed well. Weaker candidates either did not attempt this or sorted the data in the first column only.

Question 7

Some candidates found setting and controlling different internal and external gridlines challenging. The table was supplied in the source file with the gridline guides visible, but many excluded the first title row from the formatting of their table. The majority of candidates applied some gridlines to the table, but these were usually all the same thickness; either all 0.5 point or all 3-4 point, few displayed thicker lines as outside borders.

Question 8

The question produced a mixed response. Candidates who identified the title row as the first row of the table performed well on this question. Most formatted the first row of the table so it was merged with the text centre aligned over the four columns and a light grey background fill applied. A few candidates did not centre align the text vertically within the first cell. The light grey shading was occasionally applied to the text and not as a background fill to the cell. Those candidates who struggled to identify the structure of the table incorrectly applied this formatting to the second row of the table.

Question 9

The supplied table style was often not applied to all the rows from 2 to 12. Some candidates misinterpreted the instruction and applied the style to rows 2 and 12 only. The formatting of these rows was often inconsistent and did not always match the formatting stored for that style most commonly with some rows left aligned or in a larger font size.

Question 10

Some candidates did not adjust the column widths to display the data on one line, particularly for the title text in row 1 and the data in the first column. The majority displayed the table data and borders within the column width but very few set a 6 point space after the table.

Question 11

The creation and storage of the subhead style was done well by the most candidates. Common errors included capitalisation or typographical errors in the style name, an underscore used instead of a dash, or the style containing additional formatting not listed. A number of candidates did not base the style on the 'default' or 'normal' paragraph style as instructed. The style formatting was mostly set correctly although some candidates incorrectly entered 'sans-serif' as the font name which is not a recognised named font style. A named font style with attributes of the sans-serif typeface category must be selected and applied such as Arial, Calibri etc. Other candidates set '*Times New Roman*' as the font style name which is not a sans-serif font style.

Question 12

Most candidates correctly identified the 4 subheadings in the document and applied their EX-subhead style to each. The formatting of the subheading text did not always match the settings seen in the screenshot evidence for **Question 11**, most commonly where *Times New Roman* had been set as the font style, but the document text appeared in *Arial*. A few candidates did not provide any evidence of creating the EX-subhead style or did not print the Evidence Document so the mark for applying the created style to the subheadings could not be awarded.

Question 13

This question produced a mixed response. Many candidates did not locate and apply the link to the text in the paragraph as instructed and instead entered the text to be linked into the document either above or below the last paragraph. Some candidates did not apply the link to all three words in the recall text or included more text, sometimes applying the hyperlink to the full line, sentence or paragraph of text. A number of candidates did not produce adequate screenshot evidence to demonstrate this skill. Some only showed the linked file open or provided a screenshot of the text underlined with no evidence of the hyperlink on the text. On occasions the address path was too long to show the linked file name, but credit was given if the file was seen selected in the folder window.

Question 14

The overall presentation of the document was usually good. Most documents were presented in landscape orientation although occasionally, the page margins had been changed. The table and list were usually complete and not split over columns or pages. Good proofreading skills were not always evident as widows/orphans were not controlled and the columns did not always align at the top of the page. Some candidates incorrectly made changes to the formatting of the *EX-body* style in the recall text with justification, linespacing and paragraph spacing often changed for one or more paragraphs. The 6-point space after each paragraph was most commonly lost in the paragraphs before the table and bullets. Space below the longest column was often more than the 6-points set in the body style.

Task 3 – Database

Question 15

Importing the csv file and setting the primary key were generally done well. Some candidates did not set the data types as given on the question paper which resulted in import errors if *Telephone* was imported as numeric/integer instead of alphanumeric as instructed. Candidates should be aware that telephone numbers are stored as an alphanumeric/string data type as no calculation will be performed on these values. The instruction to import the date field in DMY format was not always followed which resulted in incorrect and/or missing dates. Other errors included the *Online_application* field being set as numeric or text instead of Boolean/Logical resulting in the data being displayed as True/False or -1/0. Those that did set this as a Boolean field did not always change the display to Yes/No from the default tick box. The date was not always displayed in dd-MMM-yy format. Screenshot evidence was occasionally cropped so not all ten fields were shown in the learners' table. A few candidates incorrectly included an ID field in their table structure, and some provided screenshot evidence of steps in the Import wizard which did not always show all the data types or the primary key set.

Question 16

There were very few issues importing the second table with most candidates using the correct field names and data types. As the primary key was given in the question paper there was little issue setting this correctly. Occasionally, an ID field was included in the table structure and set this as the primary key.

Question 17

Examining the class csv file and identifying the most appropriate field to use as a primary key produced a mixed response. Most correctly set the *Class_ref* field as the primary key identifying that this was the only field containing unique data. Some set the first field in the table as the primary key which contained duplicate data or included an additional ID field and set this as the primary key, or did not set a primary field at all. Importing of the csv file using the correct field names and data types was mostly done well.

Question 18

Where the primary keys in the tables were set correctly, most candidates created the correct one-to-many relationships between the three tables. Some candidates used four tables to create the links with the correct link shown between the class and learners tables and then showed an additional learners_2 table with the *AA_code* codes linked, meaning the three tables could not be linked together to create a relational database. The screenshot evidence supplied did not always provide sufficient evidence of one-to-many relationships created. A screenshot of the relationship dialogue box will evidence the relationship type. The relationship

diagram can only be credited if it shows the single and one-to-many infinity symbols confirming the relationship type.

Question 19

Most candidates entered the new record in the correct table. The new record occasionally contained data entry errors or had been entered more than once. Candidates did not lose marks for import errors in the data types which had already been penalised in the table import, so if all dates were in MDY format and the DOB for the new record matched as 07-Oct-09, or if the Boolean field for all records displayed TRUE/FALSE or – 1/0. Candidates were not awarded full credit if they overwrote the first record in the database instead of entering this data as a new record at the end of the table.

Question 20

The first report used fields from all three tables and was done well by most candidates. The report title was usually entered in a larger font size at the top of the report although this occasionally contained data entry or capitalisation errors, displayed additional text such as 'Query 1' and/or the 'g' descender was not fully visible. The search on two criterion was completed well with only the records for *Female* displayed and most completing the wildcard search on *time* correctly. The sort was not always set for both fields with several candidates sorting on the *Year_group* data only. Most included the correct fields, but these were not always in the correct order, most commonly with the two sort fields as the first two fields in the report. Setting the sort order in the report structure after the report has been created will help prevent the sort fields being placed first as they are when the sort is set in the wizard. Data in one or more fields, usually *Forename*, *Surname* and/or *Access_arrangement*, was often truncated and required manipulation to ensure all data was fully visible. The calculation to find the youngest student was often incorrect with candidates using MIN instead of MAX. The formula screenshot in the Evidence Document did not always evidence that a database formula had been used and the control box was often truncated so the formula was not fully visible. Some candidates placed this calculation in the page footer so #error appeared in the control box at the end of every page in the report, rather than the report footer so the date of birth appeared at the end of report as instructed on the question paper. The label for this calculation was usually positioned correctly to the left of the value but occasionally included an extra word 'the' in 'DOB of *the* youngest student' or contained capitalisation errors and/or additional punctuation. Identification details were occasionally entered in the report footer, meaning they only appeared on the last page of the report, rather than in the page footer, where they were printed at the bottom of every page. Occasionally, these details were placed in the report header along with the report title. Most presented the report in landscape orientation with the fields and data fitting a single page wide but only a limited number of candidates manipulated the data so it printed on two pages only.

Question 21

The second report required the production of labels. Although an improvement in the creation of labels has been seen in recent years a significant number of candidates did not attempt this task and provided no printout for this question. A few candidates presented the labels as a tabular report and therefore could only achieve the search and sort marks. Where labels had been attempted there were some error-free responses. Few candidates managed to select labels of the correct size with 2 columns and 4 rows and 8 labels to the A4 page. Candidates can select the correct label size from the standard pre-set label sizes or create custom labels based on the measurements given on the question paper. The selection of data was generally done well although a few candidates incorrectly based their labels on their Report 1 query. Most candidates found records with the code AA01 (*Supervised Rest Breaks*) but more challenging was the wildcard search to find the class codes containing 5 or 6 and a number of results included all the class codes (4, 5 and 6). Most candidates included the correct fields in the correct order, but these were not always on the correct lines, and many did not leave a space between fields on the same line or omitted the punctuation and spacing shown on the question paper for the last line. A few candidates attempted to include the field headings with the data which was acceptable but often resulted in truncated record data as it was difficult to display the field headings and data within the width of the label. Formatting only the first two lines so they were centre aligned, bold and in a larger font size was generally done well. A small number of candidates applied this formatting to all lines of the label or only applied the formatting to the first line. Label rows 3 to 5 were not always left aligned consistently. Candidate identification details were often placed in the page header or footer so did not appear on every label and where they were on every label, they were not always left aligned under the label. Sorting on a single field was generally done well although several candidates sorted in ascending rather than descending order.

Task 4 – Printing the Evidence Document

Some candidates did not submit a printout of the Evidence Document. It is essential that candidates print their Evidence Document towards the end of the examination time, regardless of whether they have finished the paper. Candidates should make sure that their screenshots are large enough for the evidence to be legible and that cropping/resizing has not removed essential evidence.

Task 5 – Presentation

Question 22

Most candidates successfully imported the six slides and presented each as a title and a bulleted list. A small number of candidates imported the data but did not display bullets on the slides nor make changes to the recalled text on some of the slides. Marks were not awarded where incorrect software had been used such as the RTF file opened, manipulated and printed in word processing software.

Question 23

Most candidates correctly entered their identification details centre aligned in the header and automated slide numbers left aligned in the footer. A small number of candidates only included their name, omitting their centre number and/or candidate number and the slide numbers were not always moved from the default position. Occasionally, the header and/or footer were not in the same position on one or more slides. Automated slide numbers were not always used with some keying the number 1 in the footer so this number appeared on every slide.

Question 24

This task was performed well with the majority of candidates changing the layout of slide 1 to a title slide layout with the title and subtitle centre aligned vertically and horizontally in the middle of the slide. Occasionally, the bullet was not removed from the subtitle text.

Question 25

Most candidates moved the correct slide so it became the last slide in the presentation. Occasionally, the slide had been copied or there was evidence that the text had been re-typed instead of the complete slide moved.

Question 26

Most candidates imported the correct image and placed this on the correct slide. Some candidates have difficulty differentiating between the left and right and positioned the image to the right of the bullets instead of the left. Occasionally, the image was placed above or below the bullets.

Question 27

The image was usually rotated 180 degrees so the round button was at the bottom with the diagonal line from top left to bottom right. A few candidates flipped the image vertically instead of rotating it so the diagonal line displayed from the top right to the bottom left. The aspect ratio was not always maintained.

Question 28

Most candidates opened the correct source file and selected the correct data to create a vertical bar chart. Some candidates charted all the data in the source file with the offences displayed on the category axis instead of the years and this data was usually truncated. Candidates who correctly selected only the data for mobile phone use often included the total column in their selection instead of only the data for years 2021 to 2024. The category axis occasionally displayed 1 to 4 instead of the years 2021 to 2024. Most candidates did not display a legend.

Question 29

The chart title was usually entered in the correct position but occasionally contained data entry or capitalisation errors. The most common error was the incorrect spelling of '*mobile*' and/or '*offences*'. The title was not always displayed as shown with some entering the text in uppercase or with each word capitalised. Some candidates select a chart style that displays all text in uppercase which does not match the case given on the question paper.

Question 30

Displaying the values as data labels along the top of each bar was completed well by most candidates. Occasionally, the labels were positioned in the middle of each bar making the values difficult to read.

Question 31

Controlling the value axis scale and increments was completed well by most candidates. A few did not attempt to make any changes or changed the maximum value to 2100 without changing the increments to 300, resulting in a minimum value of -400.

Question 32

Most candidates correctly placed the chart to the right of the bullets. Occasionally, the chart was incorrectly placed to the left or below the bulleted text. The chart was usually positioned so it did not overlap any slide items.

Question 33

Most candidates printed the full presentation in portrait orientation with two slides to the page, each filling half the page. A small number of candidates printed in landscape instead of portrait orientation and a few printed six single full-page slides.

INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 0417/22
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Key messages

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- Candidates must be able to distinguish between the typeface categories of sans-serif and serif font types and select a named font for the type specified.
- Candidates must be able to differentiate between left and right when placing objects in their documents.
- Candidates must use proofing techniques to identify errors and ensure consistency of presentation in their documents.
- Candidates must retain existing styles applied to document recall text.
- Candidates must be able to distinguish between the database page header/footer area and the database report header/footer area and understand which is appropriate to use.
- Candidates must ensure they include their identification details in tasks before printing as instructed on the question paper.
- Candidates must produce legible screenshots which are large enough to be read and show the outcome of an action rather than the skill process.
- Candidates must print their Evidence Document as this contains supporting evidence that could substantially improve their grade.

General comments

Candidates appeared well prepared for the examination and had good knowledge and understanding of the demands of the paper. There were a good spread of marks and errors were distributed evenly throughout the paper. Most candidates completed or attempted all tasks in the paper within the time allowed and most showed a good level of skill. Where tasks were omitted, it tended to be the database or the chart in the presentation. Generally, candidates who did attempt the database task produced good work and compared to previous sessions, completed this work with a greater degree of accuracy. A few candidates continue to submit work without their typed identification details which cannot be marked. The Evidence Document is often printed with miniature or cropped screenshots making it difficult or impossible to assess the evidence they are showing.

Candidates must be able to distinguish between the typeface categories of serif and sans-serif font types. These are not the actual names of font styles but categories of font type with specific attributes. Candidates must be able to select an appropriate font for the font type specified.

Text to be entered by the candidate as part of a task is displayed in bold on the question paper. Marks are available for accurate data entry of this text which must be keyed exactly as shown, including punctuation and capitalisation. Candidates are advised to carefully check their data entry to ensure it matches the text on the question paper. Common errors included incorrect capitalisation, incorrect or missing characters, omission of spaces, truncated headings and superfluous punctuation.

Candidates are instructed to produce screenshots to evidence the ICT skills that cannot be assessed through the printed product alone. These screenshots must display the outcome of an action and not the process so, for example, the saved word processing document must be seen in the file list within the folder – the 'Save As' dialogue box is insufficient as the save process is incomplete. Screenshot evidence is often too small and/or faint to be read even using magnification devices. Candidates must ensure that all screenshots can be easily read with the naked eye and centres should ensure there is sufficient ink in the printer for candidates to produce legible printouts. Candidates should take care when cropping and resizing

screenshots to ensure important elements are still shown such as primary keys and all the fields in the database table structure.

For every task the question paper prompts candidates to include their name, centre number and candidate number prior to printing. Without clear printed evidence of the author of the work marks cannot be awarded. It is not acceptable for candidates to annotate their printouts by hand as this is insufficient to prove they are the originators of the work.

Some centres submitted stapled work which should be avoided. Hole-punching work and securing it with treasury tags or string is permitted but care should be taken not to obscure text with the punch holes. It is not necessary to put the individual ARFs in separate envelopes or plastic wallets. Centres should return the Supervisor's Report Folder with the candidates' work. This identifies the software used and can be helpful if issues were experienced during the practical test. The candidates' work must be submitted in the original hard-copy printed Assessment Record Folders that are provided to centres. Printed or photocopied Assessment Record Folders should not be used.

Comments on specific questions

Task 1 – *The Evidence Document*

An evidence document was created and used by most candidates to store screenshot evidence. Occasionally, the screenshots were too small or faint to read, or essential evidence had been cropped out. A small number did not print identification details on every page of the document so marks could only be awarded for pages where the identification details were printed. A small number did not present the evidence document for marking.

Task 2 – *Document*

Question 1

All candidates opened the correct file and most saved it correctly with the required file name. A few candidates incorrectly saved it in the original RTF format rather than the format of the word processing software being used, and a few did not enter the filename exactly as shown on the question paper. Most candidates produced a screenshot of the folder contents after the file had been saved which provided the evidence required. Occasionally, no evidence of the file type was seen. Most candidates retained the page setup settings as instructed. A few candidates made changes to one or more of the paragraph styles that had already been created and applied to the recall text, even though the question paper stated that no changes should be made to these unless instructed.

Question 2

Headers and footers were generally inserted and aligned as instructed. Not all candidates aligned the header to the right margin with some aligning it to the left margin or splitting the details, so their name was on the left, centre number centred and candidate number on the right. Occasionally, candidates omitted their centre number and/or candidate number from the header details. Page numbers were sometimes omitted from the footer, or an automated field had not been used with the keyed number 1 appearing on all pages. Some candidates used a style of numbering that included representation of the word '*Page*', and this was acceptable providing right alignment with the page margin was maintained on all pages. Occasionally, the header and/or footer did not align with the page margins on all pages. Candidates who used the built-in content control to align the items did not always remove superfluous text or placeholders in the header or footer areas.

Question 3

Most candidates created a new line at the start of the document and entered the title text. Occasionally, this text contained data entry or capitalisation errors.

Question 4

The recall document contained the *TM-title* style that had already been created and stored. Most candidates successfully applied this style to their title text. Occasionally, the formatting did not match the style, most commonly with the 0 point space below the title text changed.

Question 5

Most candidates attempted to modify the pre-defined *TM-body* style but did not always make all the required changes. Common errors were the font style not changed to a sans-serif font, full justification not applied, italic enhancement not removed and/or the space after each paragraph not changed to 0 point. A small number of candidates incorrectly created a new style from the information provided and therefore did not evidence the skill of modifying a pre-defined style. Some candidates continue to enter 'sans-serif' as the font style name which is not a recognised named font style. Candidates must select a named font style with attributes of the sans-serif typeface such as Arial, Calibri etc. As the body style had already been applied to the source document text changes made were automatically reflected in the document.

Question 6

Most candidates located the table and deleted the correct column. A few candidates deleted the data but left the empty column in place.

Question 7

Formatting of the first column to match the image was mixed. Most candidates managed to rotate the text 90° in the right direction but some candidates did not merge all the cells. Most applied a black fill to the cell, but not all changed the font colour to white. Centring the text vertically and horizontally within the cell was not always done correctly with some candidates inserting extra space to try and centre the text rather than using the functions of the software. The column width should have been set at 1.5 centimetres so the centring could be assessed but occasionally the column was too narrow to evidence this.

Question 8

Most candidates produced screenshot evidence to show the column width had been set to 1.5 centimetres although this was not always reflected in the width of the column in the table. A few candidates captured screenshot evidence of changing the table width instead of the column or cell width. Some computers had the units set to inches instead of centimetres so 0.59" was accepted in place of 1.5 centimetres.

Question 9

Setting the required text to be two equally spaced columns with the correct spacing between the columns was generally done well. Not all candidates controlled the text displayed in columns with some applying the two-column layout to the entire document or including the final paragraph in the column selection. Several did not include the last full stop in their selection. The initial column break was occasionally inserted below rather than above the subheading and sometimes a page break was inserted instead of a section break. The space between the columns was not always changed from the default value to 1-centimetre.

Question 10

Most candidates imported the correct image and placed it in the correct paragraph. Occasionally, the image was missing, placed in the wrong paragraph or above/below the paragraph. Most reflected (flipped) the image so the man faced the left.

Question 11

Most candidates applied text wrap to the image and resized it with the aspect ratio maintained. The image was usually aligned with the top of the paragraph text, but several candidates aligned it to the left of the column instead of the right.

Question 12

The *TM-table* style had been created and stored in the recall document. Most candidates applied this style to columns 2 and 3 of the table but the formatting did not always match the style stored with the most common difference being extra space after the text. The table text was not always displayed on one line and table borders and text often extended into the margins. Most applied table gridlines but these were not always set at 1-point. Several candidates left no space after the table, or the space was greater than 6 points.

Question 13

The overall presentation of the document was mainly good. Most documents were presented in portrait orientation with the table rarely split over columns or pages. The page margins were not always consistent as the column section was sometimes indented further resulting in uneven margins. Good proofreading skills were not always evident as one or both spelling errors in the *History* paragraph were often not corrected. The columns and pages were not always aligned at the top and occasionally there was a widow or orphan at the top or bottom of a column or page. The flow of text in the column section was not always correct suggesting the column formatting had been applied in several different steps, and on occasions the table had been moved to a different place in the document. Some candidates incorrectly made changes to the formatting of pre-defined subhead style that had already been applied to the four subheadings and should not have been changed.

Task 3 – Database

Question 14

Importing the csv file and setting the primary key were generally well done. All candidates attempting this question set the data types as given on the question paper as no changes were required from the software defaults. The most common error was not setting the *Speed_KM/h* data to display to 2 decimal places. Screenshot evidence was occasionally cropped so not all eleven fields were shown. A few candidates incorrectly included an ID field in their table structure, and some provided screenshot evidence of steps in the Import wizard which did not always show all the data types or the primary key set.

Question 15

There were very few issues importing the second table with most candidates using the correct field names and data types. As the primary key was given in the question paper there was no issue setting this correctly. Occasionally, an ID field was included in the table structure and set as the primary key.

Question 16

Most candidates created a relationship between the tables but the screenshot evidence supplied did not always provide sufficient evidence of a one-to-many relationship. A screenshot of the relationship dialogue box will evidence the relationship type. The relationship diagram will only be credited if it shows the single and one-to-many infinity symbols confirming the relationship type.

Question 17

Most candidates entered the new record accurately and in the correct table. The new record occasionally contained data entry or capitalisation errors or had been entered more than once. Candidates were not awarded full credit if they overwrote the first record in the database instead of entering this data as a new record at the end of the runners' table.

Question 18

The first report used fields both tables and was generally complete well with several error-free reports seen. The report title was usually entered in a larger font size at the top of the report although this occasionally contained data entry or capitalisation errors or displayed additional text such as '*Query 1*'. The search was not always completed well with some selecting records with a category containing 'F' instead of starting with 'F' which resulted in records starting with both 'F' and 'M' displayed. Occasionally, the second search criteria included records for 10, 11 and 12 suggesting a wildcard had been incorrectly used to find records ranked 1 or 2. The two-field sort was generally completed well although a few sorted *Level* in ascending rather than descending order and a small number grouped the report by *Level* instead of sorting it. Most included the correct fields, but these were not always in the correct order, most commonly with the two sort fields positioned as the first two fields in the report. Setting the sort order in the report structure after the report has been created will help prevent the sort fields being placed first as they are when the sort is set in the wizard. Data in the *Last_name*, *First_name* and/or *Level* fields was occasionally truncated although most were able to manipulate the field widths, so the data was fully visible. Most entered their identification details on the report and printed this in portrait orientation. The fields and data usually fitted to a single page wide but some candidates interpreted this as forcing it to print on a single page long and in doing so lost some of the records that matched the search criteria.

Question 19

The second report used fields from both tables. The report title was usually entered in a larger font size at the top of the report. This occasionally contained data entry or capitalisation errors, displayed additional text such as 'Query 1' and/or the height/width of the text box was truncated so the title or the 'p' descender was not fully visible. The search for the level 'Novice' was well done but locating the *Event_rank* of 100 or less was not always correct with the greater than (>) operator occasionally used and/or not searching for those records equal (=) to 100. The new field heading was usually entered accurately with only a few incurring a fault for an uppercase 'T' on 'Race_time', omitting the underscore or using a dash instead of the underscore. The calculation was not always attempted but those that did were credited for the correct result regardless of whether it was displayed in time format. Displaying the time in the format specified proved challenging for some candidates. Incorrect formatting displays seen included the result as a decimal value, h:mm:ss or AM/PM after the time. The majority included the correct fields in the report, and the field order was usually correct although the sort field *Age* was occasionally displayed first. This can be avoided by setting the sort order in the report structure rather than in the query or during the creation of the report if a report wizard is used. Sorting *Age* in ascending order was completed well. The report structure required minimal manipulation to make sure all the data was displayed in full but data in one or more fields, usually *First_name*, *Last_name* or the field heading *Speed_KM/h*, was occasionally truncated. The calculation to find the top speed was sometimes omitted or incorrect with candidates using MIN instead of MAX. The formula screenshot in the Evidence Document did not always evidence that a database formula had been used and the control box was often truncated so the formula was not fully visible. Some candidates placed this calculation in the page footer so #Error appeared in the control box at the bottom of every page in the report, rather than the report footer so the fastest speed appeared at the end of report as instructed on the question paper. The label for this calculation was usually positioned to the left of the value but occasionally contained data entry or capitalisation errors such as 'Fatest' for 'Fastest' and 'speed' entered as 'Speed' and/or included additional punctuation such as a colon or equals symbol. Identification details were often entered in the report footer, where they only appeared on the last page of the report, rather than in the page footer, where they printed at the bottom of every page. A small number of candidates omitted their identification details completely so their printed work could not then be assessed. A few candidates presented this report in portrait instead of landscape orientation. The fields and data usually fitted to a single page wide, but some did not fit the report to two pages only.

Task 4 – Presentation

Question 20

Most candidates successfully imported the eight slides and presented each as a title and a bulleted list. A small number of candidates imported the data but did not display the text with bullets or the titles in a consistent style and some made changes to the text on some of the slides. Marks were not awarded where incorrect software had been used such as the RTF file opened, manipulated and printed in word processing software.

Question 21

Most candidates correctly entered their identification details right aligned in the header and automated slide numbers centre aligned in the footer. A few candidates incorrectly entered their identification details in the page header instead of the slide header. A small number of candidates only included their name, omitting their centre number and/or candidate number and the slide numbers were not always moved from the default position. Occasionally, the header and/or footer were not in the same position on one or more slides. Automated slide numbers were not always used with some keying the number 1 in the footer, so this number appeared on every slide.

Question 22

Deleting two slides was completed well by most candidates. Occasionally, only one of the slides had been deleted with the *Prizes* slide the one more commonly present.

Question 23

Most candidates opened the correct source file and selected the correct data to create a standard line chart. Some candidates were unable to demonstrate the ability to select non-contiguous data and as a result included all the data in their chart. Those charting all the data often displayed the values 1 to 11 on the category axis and the age groups as a legend. Those candidates who selected the correct columns

occasionally included the total column as well. Most displayed the percentages on the value axis. Several candidates incorrectly created a stacked line chart or a 100% stacked line chart which made controlling the value axis display impossible. A small number of candidates incorrectly presented a bar chart.

Question 24

Most candidates displayed a legend, but this usually displayed more than two items. Very few modified the labels to display *Male* and *Female*.

Question 25

The chart title was usually entered in the correct position but occasionally contained data entry or capitalisation errors. The most common errors were the incorrect spelling of '*distribution*' or keying this with an initial capital, and '*group*' keyed as '*groups*'. Some candidates selected a chart style that displayed all text in uppercase which did not match the case given on the question paper.

Question 26

Controlling the value axis scale and increments was completed well by most candidates. A few did not attempt to amend this or changed the maximum value to 0.42 without amending the increments to 0.07 resulting in a minimum value of -3 and the default increments of 0.05.

Question 27

Most candidates placed the chart to the left of the bullets on the correct slide. A few placed it on the wrong slide (*Marathon Times*) and occasionally it was positioned to the right or below the bulleted text. The chart data was usually fully visible with the chart positioned so there was no overlap with any slide items. A few candidates displayed data values on the data points which was not part of the assessment and resulted in some data values overlapping and not being fully visible. If the chart was too small some age groups were missing from the category axis.

Question 28

This question was completed better than in previous sessions with many candidates achieving full marks. Most candidates attempted to format the two bulleted lines of text as shown on the question paper. Most applied a dashed bullet style and indented the list but there was not always a space between the dash and the text, or the space was inconsistent. Most decreased the text font size for these items, but a common error was not applying italic enhancement to this text. It was not always obvious that the font size had been decreased, and candidates should be aware that minimally reduced font sizes are barely discernible when printing in handout layout with two slides to the page as the difference cannot be seen.

Question 29

This question produced a mixed response with the main issue being the link applied to the wrong text. Several candidates did not locate the text and apply the link to that source text as instructed but added new text to the slide, either above or below the bulleted list, to create the link. A few candidates incorrectly applied the link to the slide title '*Elite Runners*'. Those that did locate the correct text often applied the link to a single word or the complete line. Most created a working email link, but the email address was not always keyed exactly as shown on the question paper. The subject line was occasionally omitted or contained date entry or capitalisation errors. Several candidates did not produce adequate screenshot evidence to demonstrate the link. Some only provided a screenshot of the text underlined with no evidence of the hyperlink on the text.

Question 30

Controlling the printing of the presentation was challenging and produced a mixed response. Some candidates did not manage to control the printing of only slides 2, 3, 4 and 5 as handouts and printed the complete presentation (slides 1 to 6) in this layout. Some candidates incorrectly omitted slide 2 from the handouts print presumably as this had been printed as a full-page slide. Printing the handouts was credited providing the slide numbers showed 2, 3, 4 and 5, regardless of the slide content, therefore if the slides in question 22 had not been deleted controlling the print could still be achieved. A small number of candidates printed the handouts in landscape instead of portrait orientation. Some candidates did not manage to print only '*Marathon Participation*' as a single slide and instead printed the full presentation as single full-page slides. A few printed slide 1 as their single full-page slide instead of the *Marathan Participation* slide. As

candidates may have been concerned that they were not submitting printouts of all their presentation, they were not penalised for submitting slides 1 and 6 as separate slides, providing they were unrelated to the handout or single slide printout.

Task 5 – *Printing the Evidence Document*

Some candidates did not submit a printout of the Evidence Document. It is essential that candidates print their Evidence Document towards the end of the examination time, regardless of whether they have finished the paper. Candidates should make sure that their screenshots are large enough for the evidence to be legible and that cropping/resizing has not removed essential evidence.

INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 0417/31
Practical Test

Key messages

For this examination, the main issues to note are as follows:

- Candidates need to understand the importance of following the instructions on the question paper.
- Candidates must ensure that they type their candidate details in to each piece of work. Candidates must enter their name, centre number and candidate number on every printout before it is sent to the printer, as stated on the front of the question paper.
- Candidates need to ensure that all spreadsheet column widths are wide enough to display the data/formulae whilst using a font size large enough to enable Examiners to read the work, without the use of magnification devices.
- Candidates need to be able to identify which spreadsheet function is the most appropriate for a task.
- Candidates need a better understanding of html syntax, particularly the appropriate use of head and body tags.
- Candidates must ensure that they include their candidate details in the correct place on all printouts.
- Candidates need to take greater care with the accuracy of data entry.
- Candidates need a better understanding of the syntax of both CSS and HTML and apply each appropriately, particularly ensuring that external cascading stylesheets are attached in the <head> section and that where styles are applied in the HTML, the <style> tag is used to embed CSS styling with appropriate syntax, attributes and values.

General comments

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 and candidate errors were spread evenly over the sections of the paper.

There has been a significant increase in the number of candidates not typing their candidate details in to their work, and that we would like to remind candidates and centres that candidates must enter their name, centre number and candidate number on every printout before it is sent to the printer, as stated on the front of the question paper.

Candidates **must** ensure that the text within the markup, stylesheet and spreadsheet printouts is fully visible and large enough to enable Examiners to read the work, without the use of magnification devices.

Comments on specific questions

Task 1 – Evidence Document

Almost all candidates created an Evidence Document.

Task 2 – File management

Question 1

Many candidates completed this question as required. A significant number of candidates did not include the folder name in their printout, often because they had 'over-cropped' the screenshot. Other candidates did not

include the image dimensions and/or frame heights and widths in their printout. Where the folder name was visible, there were a considerable number of typographical errors (particularly case errors) in the folder name entered by the candidates.

Task 3 – Web page

Question 2

Most candidates created the required web page and saved it with the specified file name. Almost all candidates set a single table and omitted the letters as instructed in the question paper, but fewer candidates ensured that borders were fully visible on the page. Several candidates set the table width to 100% rather than the required 90%, presumably because 100% was the default setting of their WYSIWYG web authoring package. Cells in rows 1, 3 and 4 had the colspan set to 2 by most candidates, to obtain the structure matching the diagram in the question paper.

Question 3

Many candidates completed this step as instructed, although some did not place the title in the head section. Several typographical errors were seen in the title text. A small number of candidates left the webpage title as their WYSIWYG packages default 'untitled'.

Question 4

Most candidates who produced browser view evidence of their web page had placed the image TRbanner.png into the cell in row 1 of the table. Fewer were successful in placing the video in the left cell of row 2. Some candidates appeared to ignore the instruction to use video and source tags, attempting to place the video with tags such as <object> or <a>. Those candidates who did use <video> and <source> tags did not always demonstrate understanding of the syntax of these tags, sometimes placing the src attribute and/or type attribute in the <video> tag rather than the <source> tag. Many candidates did not use the correct syntax to include the loop attribute. Text based error messages were often attempted but not all candidates placed these between the <video> and </video> tags. This message was supposed to inform the user why the video did not play on their browser; a significant number placed inappropriate text such as "if the browser does not support this video type".

Question 5

Most candidates who submitted a web page placed the text in the correct cell, most also setting this text into style h3.

Question 6

Many candidates completed this step as instructed, placing the correct text in the correct cells, although several typographical errors were seen, particularly with the spelling of 'developments', and the omission of the punctuation specified in the question paper. Most candidates who entered this text set it in style h2.

Question 7

Several candidates found this step more challenging, most selected the text 'exciting developments' to set their anchor around, with many adding a href attribute to open the web page TRdevelop.htm. Fewer candidates successfully added the second target attribute to open a new window called _blank.

Most candidates who attempted to use the mailto: value for their hyperlink reference selected the text 'job opportunities' to set their anchor tags around. Many candidates used the correct syntax for the mailto and subject values within this hyperlink, but several typographical errors were seen in either the email address or the subject line.

Question 8

Most candidates attached the stylesheet to the web page; a small number did not place it in the head section. Some candidates incorrectly used a file path within the hyperlink reference which would work on the file structure of their computer but would not work when the web page was uploaded to a web server.

A significant number of candidates did not edit the stylesheet successfully as separated table borders were not always seen by Examiners in the browser view.

Question 9

Many candidates submitted their HTML, although some candidates omitted this stage. Most candidates printed the browser view of the page, but some did not show the address bar. Several candidates produced screenshots from their WYSIWYG HTML editor which did not allow Examiners to see that images were displayed in the correct cells in a web browser, therefore they gained less marks from the screenshot of the web page. Despite clear instructions in the question paper about the requirements for the browser view not all candidates showed the full page (cropping their screenshot) or the address bar.

Task 4 – *Printing the Evidence Document*

This was printed as specified by almost all candidates.

Task 5 – *Spreadsheet*

Question 10

The file was used and saved with the correct file name by most candidates, although not all candidates saved their work as a spreadsheet with several files still saved in .csv format. Some candidates had case errors in the filename. Almost all candidates placed the text 'Created by:' followed by their name, centre number and candidate number right aligned in the header, although there were typographical errors, with the colon sometimes omitted or a lower case 'c' used.

Fewer candidates placed the text 'Created on:' followed by the automated data and time as specified. Several typographical errors were also seen here, with the colon sometimes omitted, a lower case 'c' or the omission of spaces or the 'at' as specified in the question paper.

Question 11

This was performed well by almost all candidates.

Question 12

Most candidates successfully used the arithmetic operator (+) or the SUM function to complete this step. Some candidates used the SUM function inappropriately, so did not gain full credit, for example: with formulae such as =SUM(60*C14+D14+E14/1000) where the SUM function was not used as part of the calculation. Appropriate solutions using this function were seen, such as =SUM(60*C14,D14,E14/1000). Not all candidates replicated this formula for all 40 laps.

Question 13

Almost all candidates completed this task as specified, although there were sometimes nine or eleven rows inserted rather than the required ten rows. Whilst most candidates successfully moved the text into cells A3 to A10, some copied the cells and left the original values in cells H13 to H20 as well.

Question 14

Many candidates produced a spreadsheet with identical formatting for the top of the spreadsheet to the image shown in the question paper. The more frequently found errors and omissions included:

- cells in rows 1 and 12 were not merged across the 6 columns as shown in the diagram
- the merged cell A1:F1 was not always set in a 36-point sans-serif font and wrapped as shown
- cells within the range A3 to A10 were not right aligned.
- cells in rows 1, 12 and 13 were not centre aligned.
- text in the cell E13 was not wrapped as shown.

Question 15

A significant number of candidates selected the MAX function for the fastest lap rather than the MIN function.

Question 16

A significant number of candidates selected the MIN function for the slowest lap rather than the MAX function.

Question 17

Most candidates correctly used the AVERAGE function with the correct range F14:F53 for this question.

Question 18

A variety of responses were seen to this question with functions such as COUNT, SUM, SUMIF, AVERAGE and AVERAGEIF. Correct responses such as =COUNTIF(B14:B53,"On") were frequently seen; some candidates elected to use COUNTIFS even though it was a single condition that was being tested.

Question 19

A variety of responses were seen to this question with functions such as COUNT, SUM, SUMIF, AVERAGE and AVERAGEIF. Correct responses such as =COUNTIF(B14:B53,"Off") were frequently seen; some candidates elected to use COUNTIFS even though it was a single condition that was being tested.

Question 20

Many candidates used the correct AVERAGEIF function in cell B8 such as =AVERAGEIF(B14:B53,"On",F14:F53) or a similar function using AVERAGEIFS (even though there was only a single condition to be tested). Some candidates opted to use an appropriate SUMIF function divided by either a reference to cell B6 or the formula that they had used in cell B6.

Question 21

Many candidates used the correct AVERAGEIF function in cell B8 such as =AVERAGEIF(B14:B53,"Off",F14:F53) or a similar function using AVERAGEIFS (even though there was only a single condition to be tested). Some candidates opted to use an appropriate SUMIF function divided by either a reference to cell B7 or the formula that they had used in cell B7.

Question 22

Many candidates found this question challenging. Some excellent solutions such as =IF(B8<B9,"SC success","SC failed") were seen. Common errors included the reversal of the inequality such as =IF(B9>B8..., changing the inequality such as =IF(B8<=B9... or referring to other cells such as B5, B6 and B7. Several candidates omitted this step.

Question 23

Most candidates produced a formula printout in landscape orientation with the cell contents fully visible. Not all of these displayed the row and column headings

Question 24

The printout of the values spreadsheet was completed well by many candidates. Most candidates printed in portrait orientation on a single page. Some candidates printed row and column headings when instructed not to do so in the question paper. Not all cells were fully visible in some printouts.

INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 0417/32
Practical Test

Key messages

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- Candidates must ensure that they type their candidate details in to each piece of work. Candidates must enter their name, centre number and candidate number on every printout before it is sent to the printer, as stated on the front of the question paper.
- Candidates need to be able to create a named range with a given name.
- Candidates need to ensure that all spreadsheet column widths are wide enough to display the data/formulae whilst using a font size large enough to enable Examiners to read the work, without the use of magnification devices.
- Candidates need to be able to identify which spreadsheet function is the most appropriate for a task.
- Candidates need a better understanding of html syntax, particularly the appropriate use of head and body tags.
- Candidates need to take greater care with the accuracy of data entry.
- Candidates need a better understanding of the syntax of both CSS and HTML and apply each appropriately, particularly ensuring that external cascading stylesheets are attached in the <head> section and that where styles are applied in the HTML, the <style> tag is used to embed CSS styling with appropriate syntax, attributes and values.

General comments

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 and candidate errors were spread evenly over the sections of the paper.

There has been an increase in the number of candidates not typing their candidate details in to their work, and that we would like to remind candidates and centres that candidates must enter their name, centre number and candidate number on every printout before it is sent to the printer, as stated on the front of the question paper.

Candidates **must** ensure that the text within the markup, stylesheet and spreadsheet printouts is fully visible and large enough to enable Examiners to read the work, without the use of magnification devices.

Comments on specific questions

Task 1 – Evidence Document

Almost all candidates created an Evidence Document.

Task 2 – Spreadsheet

Question 1

The file was used and saved with the correct file name by most candidates, although not all candidates saved their work as a spreadsheet, with several files still saved in .csv format. Almost all candidates placed

the text 'Tests performed on:' in the header although there were a significant number of typographical errors seen. Many candidates had the correct spacing followed by the automated date, a space the word 'at', a space then the automated time. Most candidates placed the text 'Tests by:' followed their name, centre number and candidate number left aligned in the footer. Some candidates omitted the colon from the text in both the header and footer. There were a significant number of typographical errors in the footer for example 'Test by:' or 'Texts by:'.

Question 2

Many candidates produced a spreadsheet with identical formatting for the top of the spreadsheet to the image shown in the question paper. The more frequently found errors and omissions included:

- cells in row 1 were not merged across the 6 columns as shown in the diagram
- the merged cell A1:F1 was not always set in a 40-point serif font and wrapped as shown
- borders were not shown as illustrated particularly relating to the text in row 1
- cells within the range A4 to A9 and/or A12 to A15 were not right aligned
- cells in row 17 were not centre aligned either horizontally or vertically
- cells in rows 18 to 77 were not centre aligned horizontally
- text in the cells E17 and E18 were not wrapped as shown.

Question 3

This question proved challenging to many candidates. Although many candidates used the range TTime in their formulae they did not always provide evidence to show the name and the range of cells selected. Some candidates named this range Test_Time rather than TTime.

Question 4

A significant number of candidates selected the MAX function for the fastest test time rather than the MIN function. Some candidates had defined the correct named range but did not use it in their formula.

Question 5

A significant number of candidates selected the MIN function for the slowest test time rather than the MAX function. Several candidates had defined the correct named range but did not use it in their formula.

Question 6

Most candidates correctly used the AVERAGE function with the correct named range for this question. Some candidates had defined the correct named range but did not use it in this formula.

Question 7

Many candidates used the correct AVERAGEIF function in cell B7 such as =AVERAGEIF(B18:B77,1,TTime) or a similar function using AVERAGEIFS (even though there was only a single condition to be tested). Some candidates opted to use an appropriate SUMIF function divided by an appropriate COUNTIF function. Some candidates did not appreciate the need for AVERAGEIF and used the AVERAGE function.

Question 8

Many candidates used the correct AVERAGEIF function in cell B8 such as =AVERAGEIF(B18:B77,2,TTime) or a similar function using AVERAGEIFS (even though there was only a single condition to be tested). Some candidates opted to use an appropriate SUMIF function divided by an appropriate COUNTIF function.

Question 9

Many candidates used the correct AVERAGEIF function in cell B9 such as =AVERAGEIF(B18:B77,3,TTime) or a similar function using AVERAGEIFS (even though there was only a single condition to be tested). Some candidates opted to use an appropriate SUMIF function divided by an appropriate COUNTIF function.

Question 10

Many candidates found this question challenging. Some excellent solutions such as `=IF(E18<2,"Yes","No")` were seen. Common errors included the reversal of the inequality such as `=IF(E18>2...` or changing the inequality such as `=IF(E8<=2`. Some candidates erroneously used a range rather than a single cell reference. Several candidates omitted this step. Some candidates did not replicate this formula for all tests.

Question 11

Many candidates used an AVERAGEIF function in cell B12 such as `=AVERAGEIF(F18:F37, "Yes",D18:D37)` or a similar function using AVERAGEIFS(`TTime,B18:B77,1,F18:F77,"Yes"`). Some candidates opted to use an appropriate AVERAGEIF function and an AND function such as `AVERAGEIF(AND(B18:B77=1,F18:F77="Yes"),TTime)`. Several candidates attempted to use a simple AVERAGE function or omitted this stage completely.

Question 12

Many candidates used an AVERAGEIF function in cell B13 such as `=AVERAGEIF(F38:F57, "Yes",D38:D57)` or a similar function using AVERAGEIFS(`TTime,B18:B77,2,F18:F77,"Yes"`). Some candidates opted to use an appropriate AVERAGEIF function and an AND function such as `AVERAGEIF(AND(B18:B77=2,F18:F77="Yes"),TTime)`. Several candidates attempted to use a simple AVERAGE function or omitted this stage completely.

Question 13

Many candidates used an AVERAGEIF function in cell B14 such as `=AVERAGEIF(F58:F77, "Yes",D58:D77)` or a similar function using AVERAGEIFS(`TTime,B18:B77,3,F18:F77,"Yes"`). Some candidates opted to use an appropriate AVERAGEIF function and an AND function such as `AVERAGEIF(AND(B18:B77=3,F18:F77="Yes"),TTime)`. Several candidates attempted to use a simple AVERAGE function or omitted this stage completely.

Question 14

This question proved challenging for many candidates with a significant number of candidates omitting a response to it. There were several creative responses to the solution, some valid examples seen included:

- `=IF(MIN(B12:B14)=B12,3.2%,IF(MIN(B12:B14)=B13,3.4%,3.6%))`
- `=IFS(MIN(B12:B14)=B12,3.2%,MIN(B12:B14)=B13,3.4%,MIN(B12:B14)=B14,3.6%)`
- `=IF(MIN(B12:B14)=B12,VLOOKUP(1,$B$18:$C$77,2,FALSE),IF(MIN(B12:B14)=B13,VLOOKUP(2,$B$18:$C$77,2,FALSE),VLOOKUP(3,$B$18:$C$77,2,FALSE)))`

Question 15

This question was often only partially answered; many candidates had set some of the test times as 4 decimal places but omitted other in the list down to row 77. Some candidates did not format the average test times (which were also test times) to 4 decimal places.

Question 16

Most candidates produced a formula printout in landscape orientation with the cell contents fully visible. Not all of these displayed the row and column headings. Not all cells were fully visible in some printouts.

Question 17

The printout of the values spreadsheet was completed well by many candidates. Many candidates printed in portrait orientation but far fewer printed it on a single page. Some candidates printed row and column headings when instructed not to do so in the question paper. Not all cells were fully visible in some printouts.

Task 3 – File management

Question 18

Many candidates completed this question as required. A significant number of candidates did not include the folder name in their printout, often because they had 'over-cropped' the screenshot. Other candidates did not include the image dimensions and/or frame heights and widths in their printout.

Task 4 – Web page

Question 19

Most candidates created the required web page and saved it with the specified file name. Almost all candidates set a single table and omitted the letters as instructed in the question paper, but fewer candidates ensured that borders were not visible on the page. Several candidates set the table width to 100% rather than the required 85%, presumably because 100% was the default setting of their WYSIWYG web authoring package. The cell in row 1 had the colspan set to 2 by most candidates, to obtain the structure matching the diagram in the question paper.

Question 20

Many candidates completed this step as instructed, although some did not use inline style attributes. Instead, candidates used the HTML height and width attributes in the <td> tag rather than a HTML style attribute with CSS embedded within the speech marks.

Question 21

Most candidates who produced browser view evidence of their web page had placed the image j25banner.png into the cell in row 1 of the table. Fewer were successful in placing the video in the right cell of row 2. Some candidates appeared to ignore the instruction to use video and source tags, attempting to place the video with tags such as <object> or <a>. Those candidates who did use <video> and <source> tags did not always demonstrate an understanding of the syntax of these tags, sometimes placing the src attribute and/or type attribute in the <video> tag rather than the <source> tag. Many candidates did not use the correct syntax to include the loop attribute. Text based error messages were often attempted but not all candidates placed these between the <video> and </video> tags. This message was supposed to inform the user why the video did not play on their browser; a significant number placed inappropriate text such as "if the browser does not support this video type".

Question 22

Most candidates who submitted a web page placed the text in the correct cell, most also setting this text into style h3.

Question 23

Many candidates completed this step as instructed, placing the correct text in the correct cells, although several typographical errors were seen, particularly with initial capitalisation on the words 'technologies', 'us' and 'by'. Most candidates who entered this text set it in style h2.

Question 24

Several candidates found this step more challenging, most selected the text 'New technologies' to set their anchor around, with many adding a href attribute to open the web page j25tech.htm. A small number of candidates set this hyperlink to the file j25racing.htm with was the current web page.

Most candidates who attempted to use the mailto: value for their hyperlink reference selected the text 'Contact us' to set their anchor tags around. Many candidates used the correct syntax for the mailto and subject values within this hyperlink, but several typographical errors, particularly case errors, were seen in either the email address or the subject line.

Question 25

Most candidates attached the stylesheet to the web page; a small number did not place it in the head section. Some candidates erroneously used a file path within the hyperlink reference which would work on the file structure of their computer but would not work when the web page was uploaded to a web server.

Question 26

Many candidates found this question challenging, sometimes setting class as an attribute of a different HTML tag rather than to `<h2>`. Erroneous tags included `<span>` and `<div>`. Some candidates set the class to an auto-style created by the editor rather than the style that had been provided in the stylesheet attached to the web page.

Question 27

Many candidates submitted their HTML, although some candidates omitted this stage. A small number of candidates provided a link to the web page instead of displaying and printing the html source. Most candidates printed the browser view of the page, but some did not show the address bar. Several candidates produced screenshots from their WYSIWYG HTML editor which did not allow Examiners to see that images were displayed in the correct cells in a web browser, therefore they gained less marks from the screenshot of the web page. Despite clear instructions in the question paper about the requirements for the browser view not all candidates showed the full page (cropping their screenshot) or the address bar.

Task 5 – *Printing the Evidence Document*

This was printed as specified by almost all candidates.