INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 0417/12
Theory

Key messages

A wide variety of questions were offered to the candidates covering many aspects of ICT theory from simple hardware identification to the more challenging application of ICT. Candidates that read the question thoroughly and planned their answers resulted in more thorough answers being given. Candidates who performed well in this paper used specific and detailed language when replying to 'describe' and 'discuss' type questions. They also gave a justification of the statements and discussed the arguments for and against.

Candidates must give the generic names for software and hardware rather than the brand name, there has been an increase in the number of candidates using brand names over the past few series. It is clearly stated on the front page of the examination paper 'No marks will be awarded for using brand names of software packages or hardware.'

Occasionally candidates may need to expand their answers on to other parts of the examination paper or onto extra sheets. It is important that if this occurs the candidate clearly writes where the extra part is written.

General comments

The paper gave candidates an opportunity to demonstrate their knowledge and understanding of ICT using a wide variety of topics. The vast majority of candidates were able to complete the paper in the allotted time, and most were able to make an attempt at all the questions.

When a question indicates a specific number of answers, candidates should only write one answer in each allocated space as only the first one is marked for each space.

There has been a slight increase this series in candidates using tables or a line down the middle of the answer space and listing advantages and disadvantages in separate sections when answering the discussion questions produced many repeated or shortened answers. This method of answering the questions can result in missed points as comparisons are difficult and a true discussion is not given.

Comments on specific questions

Question 1

Every candidate was able to attempt this question with most candidates able to achieve half marks or more.

(a) Some candidates found this question quite challenging and a few did not attempt it. Many candidates understood that the hardware were components of the computer but were a little vague in their explanation and therefore did not achieve the mark. There are still a number of candidates who wrote that hardware is something that can be touched.

(b) Most candidates made an attempt at this question and it was generally well answered with many candidates achieving the two marks. Candidates still gave touch screen as an answer, even though it was given in the question. Some candidates answered with output devices instead of input devices or devices that were not part of a tablet computer.

(c) Mostly well answered with many candidates seeming to be able to give examples of system software. Examples of two different operating systems were sometimes seen, there was some confusion with application software as well. Many proprietary names were given but achieved no credit.

Question 2

Most candidates were able to achieve full marks for this question. Where candidates achieved one mark the incorrect answer tended to be bar code.

Question 3

This question was well answered with most candidates able to achieve about half marks.

(a) This question was well answered with most candidates obtained full marks. The most common error was confusing 'volatile' and 'non-volatile'. Most marks were awarded for expanding ROM and RAM and then writing about non-volatile and volatile.

(b) Many candidates found this question challenging. Candidates tended not to expand on their answers giving answers like *faster* without saying what it was that was faster. The strongest responses identified that the context was the use of SSDs and HDDs in a laptop and stated that the advantage was for the laptop. Other responses just stated a comparison between the drives.

Question 4

Well answered with lots of candidates getting 4 marks. The most common mark that candidates did not get was the last one, for What-if.

Question 5

Every candidate made an attempt at this question but many found it quite challenging.

(a) This was a challenging question with many candidates thinking that the internet was the WWW. Some candidates attempted to answer that the internet was a network of networks but simply wrote a network of computers. Few were able to achieve full marks. Many gave confused answers concerning URLs and browsers. The strongest responses identified the WWW as a collection of websites and that the internet is WAN and then described how the WWW is accessed using the internet.

(b) This question split nicely into distinct sections with candidates able to achieve marks for **parts (i)** and **(iii)**, a few candidates knew that the 's' meant secure but some answered that it meant safety or gave vague answers relating to protocol without expanding on these.

A few candidates wrote cambridgeinternational was the domain name although some referred to it as the website name. Many candidates gave organisation for .org although a few thought it meant origin. The /IGCSE was the folder that the data was stored in although some candidates referred to it as the filename or the web page.

Question 6

This was a challenging question but most candidates attempted it.

(a) This was a challenging part to the question for most candidates. Candidates seemed not to understand how a GPS operated and started by writing '*the phone sends signals to the satellite*', they then had the satellite doing all the processing and sending the results back to the phone, no hint of the phone doing any processing. A large number of candidates believed it relied on the internet. A few mentioned three or more satellites but were not convincing on how they were used although one or two mentioned triangulations. Some candidates stated that the information was displayed but were vague in what was displayed and where it was displayed.

(b) Most candidates answered this part of the question but found it quite challenging. The majority of candidates gave answers related to Satnav or GIS rather than GPS. Answers were often repeated,

for example, tracking smartphones or three different types of vehicles. Some answers were vague and therefore could not achieve credit, for example, tracking a device.

Question 7

Even though most candidates answered this question they found the question quite challenging.

(a) In previous series this type of question related to the advantages and disadvantages of the customers using the system, however in this series the advantages and disadvantages related to the school using the system. Many candidates appeared to have misread the question.

(b) Many candidates answered parallel rather than direct however a few candidates gave non-implementation answers.

(c) This was a very challenging question, with only a few candidates achieving more than one mark. This question was related to **Question 7(b)**. Those that correctly identified 'direct' in **part (b)** were able to achieve marks for immediate benefits and that the system would have been fully tested.

Question 8

Even though this was a difficult question most candidates attempted it. Many candidates missed that the question related to accessing the internet. Many candidates compared smartphones and laptops. The most common correct answer seen was that websites displayed on the smartphone are not the full version or some cannot be displayed. Some candidates understood that the smartphone could be used in more places than the laptop but did not expand on answers given, explaining that they could use both mobile data and Wi-Fi.

Question 9

Most candidates attempted this question, and it was well answered.

(a) Some answers to this question about defining part-time working seemed to be along the right lines but were less clear. Candidates wrote about the hours being less but did not relate it to a full-time job.

(b) This question was answered better than **9(a)**.

(c) This was well answered in the main although there are still too many general answers like *comfortable chairs* or *adjustable chairs* rather than ergonomic chairs. Some candidates appear to have misread the question answering about *taking breaks*, etc.

(d) Many of the answers given by candidates lacked detail and therefore could not achieve credit. For example, *electrocution* without stating from what or how. Again some candidates missed the point and wrote about getting a bad back from not sitting properly. Some candidates are still mixing up health and safety and therefore answered this question relating to health issues.

Question 10

This question was generally, quite well answered with many candidates achieving 3 or 4 marks. Some candidates mentioned RSI as being a possible answer but RSI can be an issue with touch screens as well as ordinary keyboards. Answers were often phrased badly and did not focus on the question which asked specifically to mention monitor, keyboard and touchscreen with relative advantages and disadvantages to the touch screen. Some candidates correctly wrote that the touch screen would have a smaller footprint and fewer peripherals were needed. This type of question requires the candidate to give a comparison in order to achieve credit.

Question 11

This question was well answered by those that attempted it.

(a) The majority of candidates were able to give the correct answer 'legal'

(b) This question was more challenging than **part (a)** with many candidates mixing up ethical with moral.

Question 12

This question was well answered as a whole.

(a) This question was generally well answered, with many candidates able to achieve at least 3 marks. The question asked for the most appropriate data type therefore the use of Boolean for Powered by was the most appropriate.

(b) This was a very challenging question with few candidates managed to achieve more than one or two marks. File size was one often quoted incorrect answer. Many described relationships rather than the advantages and disadvantages. Data redundancy, no duplication of data along with harder to set up were common correct answers.

(c) A lot of candidates named sensible checks but then used the words in the description, e.g. Length check to check the length. There were a few candidates who repeated the same check and others who used formatting of the field as their answer.

(i) Most candidates managed to get the check right but not the description, which often was just a re-wording of the check.

(ii) Range check was the most common answer, often with a good reason for using it. This was the best answered of the three parts.

(iii) Format check was often correctly chosen with a good explanation via an example.

Question 13

This was a well answered question with most candidates achieving at least half marks

(a) This question was well answered with most candidates achieving at least 2 out of the 3 marks. Some candidates gave vague answers such as cables/wires with no further explanation.

(b) Good answers were seen for this question with better responses giving different uses. Some candidates missed the point of the question and discussed etiquette on the internet, misinterpreting the word appropriate. Other candidates mixed up the internet and the web. Some candidates gave research as their answer which was clearly part of the question.

(c) This was a challenging question with many candidates achieving at least a mark for describing drawbacks of using the internet for research, quite a few candidates gave more than two answers. Extra answers are ignored as only the first two could achieve marks. Those candidates that identified the question was about using the internet for research often achieved full marks.

(d) (i) Generally well answered even though some answers were very vague. Lots gave hackers as an answer but did not expand to say anything else. Some candidates are continuing to give vague answers like stealing passwords rather than writing about shoulder surfing. Hackers was also a common answer with no explanation of how they would obtain the data. Candidates who kept their response to referencing the security of just having an id and a password often achieved the full two marks with many showing a good level of understanding and ways that the id and password could be found.

(ii) This question was generally well answered. Sometimes the answers were vague, e.g. *fingerprint* was given as the answer with no mention of scanning it or using a scanner. Some candidates repeated answers for example different types of biometrics. Too many still repeated *use a strong password* so had not read the question carefully.

INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 0417/21
Practical Test A

Key messages

Candidates needed to read the question paper instructions carefully and to check that they have provided, step by step, all required products and evidence in order to obtain higher marks. It is fairly rare to see work with no personal identifiers on it before sending to print, but there are still occasions where this does happen and, that work cannot be attributed to the candidate and marked.

General comments

The majority of candidates attempted/submitted evidence for all tasks. But areas such as the database reports and, in particular, labels proved to be challenging for candidates

Comments on specific tasks

Task 1 The Evidence Document

- The document name was usually correctly recorded but was sometimes saved in rich text format. Sometimes the evidence provided showed the process of saving and not the outcome.
- The HD-title style was often based on a style other than Normal. Style definitions were usually correct, but sometimes omitted explicitly defining the space after if this was already an attribute of the style this one was based on.
- Evidence of the Makers table structure was sometimes missing.
- Some candidates did not provide evidence for the one-to-many join – this needs to be either through a dialogue box which clearly shows the fields and type of join, or through use of a diagram which show a one to infinity join.
- The today's date field type was occasionally incorrect with several candidates choosing CREATEDATE. Formatting of this field as dd MMM yyyy, while usually correct, was not always so.
- Evidence of an automated filter used for the mail merge selection was done well with all candidates who attempted this producing the correct result. A few candidates showed a list of recipients only.

Task 2 The Document

- Headers and footers were mostly well placed, but some headers spread across the page.
- Removing an existing page break – it was common to see paragraphs and spacing not maintained after removal of the page break.
- Data entry of a document title and application of correct style – a few entered text all in upper case, but mostly this data entry was accurately done. The Subhead style was mostly accurately applied.
- Change of page layout was almost always set correctly and applied to the specified text.
- Bullets – correct style of bullets was usually used but less frequently indented correctly from the left margin and set in single line spacing with correct space after.
- Placing text into a text box and aligning this correctly to the text – the placed text was not always fully visible with the correct style applied. Shading and borders were often applied as specified.
- Editing an image and placing this into the text document. Rotating the image was usually correctly manipulated. Almost all candidates inserted the image into the right paragraph, but sometimes there was no text wrap, the image was incorrectly aligned with respect to the text, or resizing was not correct with aspect ratio maintained.

- Many tables were seen with only ½ point borders or no borders. Sometimes row 1 was deleted instead of the Notes column. The style for the table text was not always applied to all the text.
- Presentation of the document should have been made with no changes to body text style because this was already predefined and applied to the document. Sometimes there was a change of alignment to some of the body text or variable spacing after paragraphs. While overall layout was generally accurate, sometimes widows or orphans were left or the table was split over two pages.

Task 3 Database

Report 1

This report was attempted by most candidates and was often well executed. There were some areas that candidates can improve on, some errors included:

- The word Drivers instead of Drives in the report title.
- Formatting field type 'Capacity' to 3 decimal places challenged the majority of candidates; either missed or formatted to integer display
- Inserting a calculated field – generally done well but the correct calculation proved challenging for some.
- Record selection was on the whole accurate although some candidates used >=2200 or just =2200.
- The Country field was often positioned as the first field in the report as a result of sorting using a wizard and fields were not reordered in the report afterwards.
- Page numbers were frequently not removed.
- Truncation of fields was quite common, mainly on the Model_Code, Model and Country fields.

Report 2 – Labels

This report was more frequently missing than **Report 1** but was well executed by many who did attempt it.

- Sort order – frequently labels were sorted on Maker instead of Price.
- Label page layout not always set to display 8 labels to the page.
- Accuracy of heading and presented in larger format and applied to each label was often not produced.
- Good attempts were seen to achieve the desired layout of the correct fields in the label structure.
- A few candidates used the selection result from Report 1 to create the labels so the search result was incorrect.

Task 4 Mail merge

Structuring the master document

- Address block – frequently additional space was inserted above the Post Code line or fields were not placed on correct lines with original spacing maintained.
- Details fields – spacing was not observed particularly on the Capacity_TB and/or Price fields. The *Model_Code* field was often used instead of the correct *Model* field.
- Occasionally chevrons were left around the fields.
- The footer was sometimes inserted as a header.

Producing the merged documents

- Most candidates printed the four correct Notes. There had to be a master document print to accredit the merged letters.

Task 5 Presentation

- Slide 2 – demote bullets rarely seen done correctly.
- Chart – attempted by most candidates but frequent errors in data selection (years frequently included in the selection) and displaying the correct information on the legend. Less frequent were seen in errors in text entry and missing data labels. Almost always the chart was placed on the correct slide but not always to the left of the bulleted text.
- Presenter notes were often added as additional text to the slide and the print of the individual slide was not always in presenter notes view.
- Print layout – slides were usually printed with 4 to the page but this was often in portrait instead of landscape layout.

INFORMATION AND COMMUNICATION TECHNOLOGY

Paper 0417/31
Practical Test B

Key messages

For this paper the main issues to note are as follows:

- Candidates need to understand the importance of following the instructions given in the question paper.
- Candidates need to take greater care when formatting the spreadsheet particularly when setting row heights to match those specified in the question.
- Candidates need to take greater care when adjusting column widths to ensure that all data and labels within the cells are fully visible.
- Candidates must ensure they include all candidate details as specified in the question paper 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 CSS in a stylesheet
- Candidates need a better understanding of HTML syntax particularly in the head tags.

General comments

Candidates MUST ensure that the text within the screenshots, html markup and all spreadsheet printouts is large enough to enable examiners to read the work without the use of magnification devices.

Comments on specific questions

Question 1

Most candidates placed the specified files in the correct folder although not all included the specified file details. Frame height and width were not always added to the folder specifications before the screenshot was taken. A few candidates did not follow the case as given in the question paper and named the folder using upper case letters.

Question 2

Most candidates produced a table with the correct number of rows and columns and using percentage values. Most candidates set the table width to 80 per cent and displayed the table borders as instructed in the question paper. Very few candidates incorrectly displayed the letters shown in the diagram.

Question 3

There were few misspellings of the title for the web page. Some candidates did not place this within the head tags in the html.

Question 4

The setting of the default target window was often omitted from the head section in the html. A small number of candidates set the base target to _blank rather than _self.

Question 5

Most candidates placed the banner and eagle images correctly in the correct cells. The inclusion of the video proved to be more problematic for many candidates. Some candidates attempted to include the video using the <img>, <embed>, <object> or <iframe> tags rather than the <video> tag as specified in the question paper. Most candidates who did use the <video> tag often correctly set the width of the video to 100 per cent of the cell and included an appropriate error message. A few candidates included an alternate message rather than an error message.

Question 6

A significant number of candidates set the width of the images using html rather than placing the inline style attribute **style="width:100%"** into the html.

Question 7

Most candidates included appropriate alternate text for both images. A small number of candidates included an error message rather than a description of the image.

Question 8

This was completed well by almost all candidates.

Question 9

This was completed accurately by most candidates. Some candidates included a space before the colon. Almost all candidates correctly set the text as style h3.

Question 10

Most candidates applied the hyperlink correctly to the correct text. Where this was not applied correctly, candidates did not include only the specified text, or created the link on additional text they had inserted. Other errors included applying a mailto: link and not including the target browser window.

Question 11

Most candidates attached the original stylesheet as specified. A number of candidates included file paths in their attached stylesheets which would enable them to work on the candidates' computer but not on others with a different file/folder structure.

Question 12

Some candidates did not create a new stylesheet and attempted to amend the existing stylesheet. A significant number of candidates did not centre align the table within the window and centre aligned the text within the table. Few candidates placed the padding in a single td selector. A significant number of candidates erroneously included the cell padding in the table selector. Most candidates were able to set the border spacing, the top margin and the comment at the end of the stylesheet. The CSS comment was not always set using /* */. A few candidates included HTML in the stylesheet or added the styles to the HTML of the web page. Where candidates had created a new stylesheet, most saved it with the correct name. When attaching the new stylesheet to the web page often it was not placed with a higher priority than the original stylesheet attached at **Question 11**. Some screen prints were cropped so that the address bar was not visible. Some candidates did not show the contents of the stylesheet only the stylesheet name in the folder view.

Question 13

Most candidates provided a copy of the HTML source and produced the browser view with the address bar visible.

Question 14

Most candidates opened the correct file and saved it with the correct name.

Question 15

This question was performed well by most candidates although some candidates deleted the contents of the cells rather than row 1.

Question 16

This question was performed well by most candidates although some candidates deleted the contents of the cells rather than the required columns.

Question 17

Removing the duplicate data proved to be a challenge for some candidates who did not delete all the duplicates or deleted additional countries.

Question 18

Most candidates added the correct text, placed on the left in the header. Most candidates placed the automated file name on the right in the header. A few candidates included the file path.

Question 19

This question was performed well by most candidates although some did not sort the data. A small number of candidates did not display the row and column headings and/or the gridlines. Most candidates produced a screenshot of the print preview of the spreadsheet. Some candidates provided a screenshot of the page preview and not the print preview. There were a significant number of screenshots that were too small to be able to read the header details.

Question 20

Most candidates formatted the spreadsheet as specified, although the most common error was not showing cell borders meaning there was no evidence that C3:G3 had been merged and making it difficult for examiners to see if rows 2 and 4 had been reduced in height.

Question 21

Most candidates were able to use a formula to look up the lake code but a significant number of candidates did not make use of the contents of Column A meaning they were not able to replicate the formula from B6 to B14. Some candidates incorrectly specified the lookup range (including the labels as well as the data). A significant number of candidates did not include any error trapping to make sure there was no error message or data displayed in the cell if there was no lake code. A few candidates did not hide Column A and a small number of candidates deleted the column rather than hiding it.

Question 22

Most candidates were able to use a formula to look up the relevant data in the external file using the lake code. A small number of candidates did not use the lake code in column B and repeated the formula from

Question 21. Some candidates incorrectly specified the lookup range (including the labels as well as the data). A significant number of candidates did not include any error trapping to make sure there was no error message or data displayed in the cell if there was no lake code.

Question 23

This question was performed well by almost all candidates.

Question 24

Most candidates completed this question as specified although not all cells were fully visible in some candidates' submissions.

Question 25

Most candidates completed the modelling as specified although some candidates did not follow the capitalisation as given in the question paper when entering the name of the country. A small number of candidates displayed the row and column headings.

Question 26

Most candidates completed the modelling as specified although some candidates did not follow the capitalisation as given in the question paper when entering the name of the country. A small number of candidates displayed the row and column headings.

Question 27

Most candidates completed the modelling as specified although some candidates did not follow the capitalisation as given in the question paper when entering the name of the country. A small number of candidates displayed the row and column headings.