Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/11**

Paper 1 Written **May/June 2017**

MARK SCHEME

Maximum Mark: 100

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

Question	Answer	Marks
1(a)	Hardware	**1**
1(b)	Software	**1**
1(c)	Microphone	**1**
1(d)	Hard disk drive	**1**

Question	Answer	Marks
2		**2**

	impact	non-impact
Dot matrix printer	✓	
Inkjet printer		✓
Laser printer		✓
3D printer		✓

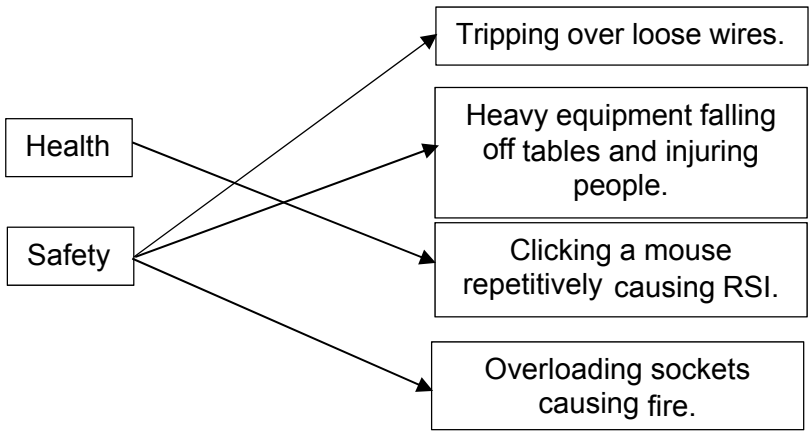
4 correct ticks 2 marks
2 or 3 correct ticks 1 mark
and 1 or 0 ticks no marks

Question	Answer	Marks
3		**2**

	true	false
A portable hard drive is an example of internal memory.		✓
Magnetic tape is used to store backups of data.	✓	
RAM is internal memory.	✓	
ROM loses its data when the power is turned off.		✓

4 correct ticks 2 marks
2 or 3 correct ticks 1 mark
and 1 or 0 ticks no marks

Question	Answer	Marks
4(a)	Abnormal	**1**
4(b)	Extreme	**1**
4(c)	Normal	**1**
4(d)	Live (data)	**1**

Question	Answer	Marks
5		**4**

Question	Answer	Marks
6	Length check Range check Type check/Character check Format check/Picture check	**4**

Question	Answer	Marks
7	*Gutter* – A margin placed on the fold of a book // A margin between the page margin and the fold of a book *Header* – This is an area at the top of every page *Widow* – When the last line of the paragraph is the first line of a new page *Wrapping* – Text is written around an image in a word processed document	**4**

Question	Answer	Marks
8(a)	Any **three** from: – Video/digital camera/webcam – Microphone – Keyboard – Large screen/monitor/data projector – Remote control – Speakers/headphones	**3**
8(b)	Any **four** from: – A conference held over the internet using TCP/IP connections – Examples webinars/webcasts/VOIP – Can be point to point (VOIP) or multicast – Allows text communication – Allows voice communication – Allows video communication – Uses a web browser	**4**

Question	Answer	Marks
9(a)	Any **two** from: – The washing machine sends out (interrogation waves) radio signal to read the data from the RFID – They act as a passive transponder Or – The clothing has a battery (attached to the RFID) – The radio signal is given out by the chip read by the receiver... – ...using its antenna	**2**
9(b)	Any **two** from: – It stops material being incorrectly washed – It stops coloured items of clothing being in the wrong wash – It stops clothing of different material being washed with others – It allows the wash cycle to be set automatically – It will know the amount of water to use so won't waste water	**2**

Question	Answer	Marks
10(a)	Any **three** from: – Cheaper than building the real thing – Quicker to see results rather than building it – Safer than building the real thing – Easier to change variables in the model/can use what ifs	**3**
10(b)	Any **four** from: – The sensors are out in the bay therefore there is a faster response to floods – Safer as flood watchers are not put in danger from rising waters – Data collected is more accurate – The data readings can be taken more frequently – Data collection can be continuous – The town's people can be alerted faster of the danger – Predictions can be made from the data easily	**4**

Question	Answer	Marks
10(c)	Any **five** from: – The microprocessor reads the data from the sensor – The microprocessor has a set of pre-set values stored – The microprocessor compares the readings from the sensors with the pre-set values – If higher the microprocessor sends a signal… – …to the actuator to close the barrier – If lower the microprocessor sends a signal… – …to the actuator to open the barrier	**5**

Question	Answer	Marks
11(a)	COUNTIF($B$6:$B$69,D6) 1 mark for COUNTIF 1 mark for (B6:B69, 1 mark for D6) 1 mark for correct use of absolute and relative cell referencing and the formula works	**4**
11(b)	Highlight the cell E6 and copy the contents of the cell Highlight cells E7 to E15 Paste the formula Or Click on cell E6 Move to bottom RH corner (of E6) select fill handle… …Drag down to E15 Or Highlight E6 to E15 select fill… …then select down Or Click on cell E6 Move to bottom RH corner of E6 Double click on the fill handle	**3**
11(c)	(SUM(E6:E9)/SUM(E6:E15))*100 1 mark for SUM(E6:E9) 1 mark for SUM(E6:E15) 1 mark for extra brackets, and '/' 1 mark for *100	**4**

Question	Answer	Marks
11(d)	Any **five** from: – Highlight D6:E15/D5:E15 – Click Insert then Chart – Select suitable Bar Chart/Pie chart – Click on title and add suitable title – Add suitable axes titles/format axes titles – Add colour for grades – Add gridlines – Add values/% – Add legend – Explode pie chart – Add values/% to pie chart	**5**

Question	Answer	Marks
12(a)	Any **three** from: – Heading – Suitable line spacing – Fills the page and looks like a paper based form – Tick box/radio buttons for gender/activity – Character boxes – Use of white space – Signature And 1 mark for three correct fields or 2 marks for all five correct fields	**5**
12(b)	Any **four** from: – Drop down box for the activities – Drop down box for gender – Search button for house number and post code – Use of hyperlinks to link to home website – Use of buttons (2 marks max for naming buttons)	**4**

Question	Answer	Marks
13(a)	Any **three** from: – Text – Moving images/movies/animation – Sound – Hyperlinks	**3**
13(b)	`<img src=”sport.jpg” alt=”play sport”>` 1 mark for `<img src=”sport.jpg”` 1 mark for `alt=”play sport”>`	**2**

Question	Answer	Marks
13(c)	Any **four** from: – She should not display pictures of herself in school uniform – She should not display personal details – She should not identify the school – She should make sure the picture is not too revealing – She should use appropriate language – Should not post her email address/contact details – Allow she should be aware of identity theft – Allow she should be aware of online sexual exploitation – Aware that everyone has access to published data	**4**
14	To be marked as a level of response: **Level 3 (7–8 marks):** Candidates will give reasoned similarities and differences. There will be a reasoned conclusion. They will relate the answer to both CLI and GUI. The information will be relevant, clear, organised and presented in a structured and coherent format. **Level 2 (4–6 marks):** Candidates will expand on similarities/differences relating the answer to both GUI and CLI. Some of the points may be one sided. There may be a conclusion. For the most part, the information will be relevant and presented in a structured and coherent format. **Level 1 (1–3 marks):** Candidates only list a difference/similarity. Candidates only refer to GUI or CLI. Answers may be simplistic with little or no relevance. **Level 0 (0 marks)** Response with no valid content *Answers may make reference to, for example:* Post GUI allows the use of pinching, scrolling, expanding Post GUI allows the use of touch screen but a CLI does not allow for this Icons speed up finding instructions, CLI you have to type out the commands in full No editing in CLI If a mistake is made in CLI it could have major consequences whereas GUI has less impact Due to graphics GUI uses a lot of memory, CLI is a lot smaller program Loss of memory slows down the operations of the computer GUI cannot operate properly if memory is low The loss of memory affects kinds of applications that can be run GUI more user friendly CLI the commands have to be memorised GUI has a more varied use on other devices not just computers In a CLI several commands have to be typed in rather than one command in GUI CLI commands have to be typed in every time the same command is run GUI sometimes have CLI embedded within them CLI and GUI both carry out file management CLI and GUI use similar utilities Both are operating systems Both control the hardware and software	**8**

Question	Answer	Marks
15	**Advantages** Max **four** marks: – If the screen is 90 degrees to the window it reduces the glare/eye strain – If you use a screen filter/blue glasses eye strain is reduced – If LCD/TFT screens are used then eye strain is reduced – If my eye is level with the top of the screen it will reduce eye strain/neck ache – If I take breaks from excessive clicking on the mouse/keyboard this reduces RSI – Using voice activated systems reduces RSI – If I use a wrist rest/an ergonomic mouse it will reduce RSI – If I use an ergonomic chair it will reduce back ache – If I do not use the computer for long periods of time this will reduce – RSI/back ache/ eye strain/Carpel syndrome/Cubital syndrome/Neck pain/DVT **Disadvantages** Max **four** marks: – Turning the screen can reduce your ability to see clearly on the screen – Laptops can be difficult to ensure the screen is 90 degrees as the whole unit needs to be moved – The cost of safety equipment can be expensive – Using voice activated systems can be prone to many errors which may increase RSI correcting them – Users can become over-reliant on equipment – With laptops/screens it can be difficult to position it so the eye level is at the top of the screen – Taking breaks every hour can increase the work time A mark can be awarded for a reasoned conclusion	**6**

Question	Answer	Marks
16(a)	Any **three** from: – Safer as humans could be injured in rock falls – Easier to replace a robot rather than train a miner – Robots do not require wages hence it is cheaper in the long run – Robots work 24/7 / continuously – Robots can work in hazardous conditions – Robots produce greater productivity	**3**
16(b)	Any **two** from: – Any changes needed to the mining equipment/rock type requires a reprogramming of the system – Reprogramming takes time – Reprogramming can increase the cost – Setting up the robot in the mine will be dangerous for humans – Expensive to maintain/repair – Initial cost of the robot is expensive	**2**