INFORMATION AND COMMUNICATION TECHNOLOGY **0417/11**

Paper 1 Written **October/November 2019**

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.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2019 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

•   the specific content of the mark scheme or the generic level descriptors for the question
•   the specific skills defined in the mark scheme or in the generic level descriptors for the question
•   the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

•   marks are awarded for correct / valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
•   marks are awarded when candidates clearly demonstrate what they know and can do
•   marks are not deducted for errors
•   marks are not deducted for omissions
•   answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Question	Answer	Mark
1(a)	<table><tr><th></th><th>System (✓)</th><th>Applications (✓)</th></tr><tr><td>A linker</td><td>✓</td><td></td></tr><tr><td>A database</td><td></td><td>✓</td></tr><tr><td>An operating system</td><td>✓</td><td></td></tr><tr><td>An applet</td><td></td><td>✓</td></tr></table> 4 correct ticks = **Two** marks 2 or 3 correct ticks = **One** mark 1 or 0 correct = Zero marks	2
1(b)	<table><tr><th></th><th>Internal (✓)</th><th>External (✓)</th></tr><tr><td>A monitor</td><td></td><td>✓</td></tr><tr><td>RAM</td><td>✓</td><td></td></tr><tr><td>Printer</td><td></td><td>✓</td></tr><tr><td>Mouse</td><td></td><td>✓</td></tr></table> 4 correct ticks = **Two** marks 2 or 3 correct ticks = **One** mark 1 or 0 correct = Zero marks	2

Question	Answer	Mark
2(a)	Part-time	1
2(b)	Flexible working	1
2(c)	Job-sharing	1
2(d)	Compressed hours	1

Question	Answer	Mark
3(a)	**Three** from: Documents do not need to be taken to a central meeting; they would not be lost in transit No need to transport heavy documents The conference can be held at short notice Reduces the cost of travelling to the meeting Reduces the cost of venue hire Reduces the cost of hotel accommodation Reduces the time lost in working due to travelling Safer than travelling Reduces the cost of paying workers whilst they are travelling	**3**
3(b)	**Three** from: There could be time lag in the responses Time lag in pictures producing jerky images Lip Sync can be an issue/matching sound and image Explanation of time zone differences Training of staff to use the new equipment can be costly/time consuming Requires good network connection/good strength of signal Power outages have a greater effect with two venues Additional hardware needed is expensive//cost of set up Difficult to sign documents/contracts Physical objects cannot be examined/handled	**3**

Question	Answer	Mark
4(a)	**Three** from, for example: Temperature sensor Humidity/moisture sensor Light sensor Pressure sensor	**3**
4(b)	**Six** from: Microprocessor stores start time/time the sprinkler turns on as a preset value Microprocessor stores end time/time the sprinkler turns off as a preset value Microprocessor compares current time with end time/start time/preset value If the current time and the start time are the same, microprocessor turns on the sprinkler If current time is less than end time/preset value, then sprinkler remains on If the time has been reached/exceeded the microprocessor turns off the sprinkler Continual process	**6**

Question	Answer	Mark
5	**Four** from: Smartphones are <u>more</u> portable Smartphones are lighter in weight Desktops cannot be used on the move//desktops need surfaces to work on Smartphones have integral devices//desktops have separate keyboard/monitor Smartphones can use 3G/4G/5G communications link Smartphones are battery powered//Desktops require a <u>constant</u> power supply Desktop requires extra hardware/software Desktop computers have a larger screen Desktop computers have a larger keyboard Desktop the footprint is larger Desktops more powerful Smartphones have more chance of being damaged/stolen <u>as they are portable</u> Smartphones tend to use modified websites//desktop can access more websites	**4**

Question	Answer	Mark
6	Maximum **four** from: *Similarities* Both WiFi and Bluetooth use wireless communications Both WiFi and Bluetooth use radio frequencies for communication/radio waves Both WiFi and Bluetooth allow several devices to be connected Both use security when sending data Maximum **five** from: *Differences* WiFi has faster data transfer rate WiFi has a greater range of transmission WiFi uses key matching encryption Bluetooth uses WEP and WPA security together WiFi can be broadcast Bluetooth has more channels Wifi connects more devices	**6**

Question	Answer	Mark
7(a)	**Six** from: Open the word processor Take photos/search for images Upload the images from the camera/HDD/CD ROM/memory card Scan photos from the archive material Save the photos to a folder/file Open the text files Import the photos into the document Crop/edit/resize the photos Import the previously saved text Position/place the photos Wrap the text Proofread the document Save the completed document	**6**
7(b)	**Three** from: The language/dialect used in checking the spelling could be different, e.g. English (US) Names/proper nouns might be highlighted as an error but are acceptable if no suggestions are given Similar sounding words need to be checked, i.e. where, were, wear The spell checker may not understand the word if it is very badly misspelt The word may not exist in the spell checker dictionary/dictionary might not be up to date	**3**
7(c)	**Three** from: The teacher only needs to type in the name of the group/saving time rather than typing out all the <u>email addresses</u> Less likely that a head teacher is omitted Fewer errors The headteacher does not have to remember individual email addresses Less likely to send the same email twice to one headteacher	**3**
7(d)	**Six** from: Open presentation software Open the presentation Open Slide master Select Audio from file Load/import/insert the audio file Convert the audio file to a suitable format Choose 'play across slides' Choose 'play in background' Test/run the presentation/audio file Save the file	**6**

Question	Answer	Mark
8(a)	**Two** from: Helps the systems analyst to understand how the system works The new system that is designed will have to deal with similar inputs and outputs as the current system You would need to have the inputs/outputs to show the input/output devices that are needed You would need to have the processing to show the processing devices that are needed You would need to have the processing to show the storage/disk space that are needed	**2**
8(b)	**Two** from: Cheaper to purchase as there are no development costs More reliable as the any errors will have been located/tested Regular upgrades/improvements more easily obtained More support as many users	**2**

Question	Answer	Mark
9(a)	**Four** from: In this example the range is B6:B11 The criterion cell reference C1 It searches through the range B6:B11 Counts the number of cells/values … … that have a value equal to contents of C1/number of times C1 occurs Returns/displays that count.	**4**
9(b)	Highlight/select the 6th row Select freeze rows	**2**

Question	Answer	Mark
10(a)	Maximum **three** Strategies and Maximum **three** matching Reasons: Don't give out personal information <u>to people you do not know</u> … … they could use it for identity theft Don't send photos of yourself to people you do not know … … these could be used to impersonate/identity theft Don't post photos of yourself on the social media without privacy settings being set … … anyone you don't know could see the images Don't post photographs that could be linked to you … … showing images of your <u>school/school uniform</u> could attract strangers Maintain privacy settings … … to stop non-friends from contacting you/control of who sees your information Only make friends with people you know/known to other friends … … this stops 'others' gaining access to your personal information Don't enter private chat rooms … … stops the stranger writing inappropriate messages (as other people are watching) Do not post email addresses/real addresses/real name, etc. … … these could be used to find information about you/identity theft/stalk you/break in Do not reply to or communicate with people you do not know … … they could extract personal information from you	6
10(b)	**Three** from: Ethnic/racial origin Religion/philosophical beliefs Political views/opinions Member of a political party Member of a trade union Sexual orientation/gender Criminal record Health/medical record Genetic data/DNA Biometric data	3

Question	Answer	Mark
11(a)	**Two** from: Save – saves the current file with the same file name, Save As – saves the current file with a new name/selected file name Save – saves the current file in the same location/folder, Save As – saves the current file in a different folder/location Save – saves the current file with the same file type, Save As – saves the current file with a new file type	**2**
11(b)	**Two** from: To save/lack of storage space/memory in the computer/storage device Reduces the time to transmit the data Some email systems only allow smaller attachments/too big to send as an email	**2**

Question	Answer	Mark
12	**Six** from: Intranet has restricted access/its private//Internet is world-wide/everywhere Intranet is used only within a company/organisation/school Intranet access has more control of data whereas the internet access is open/public access//the internet anyone can add material Intranet is policed/moderated/managed The intranet has reduced unauthorised access to material whereas the internet has content that is general Intranet can restrict access to some websites//internet has no restrictions on websites Data on the intranet is more reliable/relevant//anyone can add material to the internet Intranet <u>sits behind</u> a firewall Intranet is protected by passwords/has an extra layer of security/more secure//more chances of hacking on the internet Intranet is used to give information relating to the company whereas the internet gives general information Internet has more information	**6**

Question	Answer				Mark
13		**3D (✓)**	**Laser (✓)**	**Dot matrix (✓)**	**4**
	This printer prints layer by layer	✓			
	This printer is an impact printer			✓	
	This printer is a form of ink jet printer	✓			
	This printer produces high quality output quickly		✓		

Question	Answer	Mark
14	Maximum **five** from **each** of: *Advantages:* Regular <u>automatic</u> upgrades of the applications software on the cloud//On HDD the user may have to upgrade manually Application software can be used on other devices, <u>automatically</u>, from same subscription//With HDD application software has to be installed manually on each computer All devices tend to work with the cloud, but some devices may not contain a HDD Saves hard disk space Software in the cloud is stored externally, only program data stored on hard disk Access software anywhere Applications software is centrally stored Software is <u>automatically</u> backed up//Applications stored on the HDD needs to be backed up manually Some software can run offline if the connection is unstable Applications on the cloud tend not to be lost whereas you could lose/damage/corrupt your computer and HDD *Disadvantages:* Must be connected to the internet for it to operate If the network connection breaks as data is being saved/loaded it may be corrupted If the internet crashes, then any data may not save Can be difficult to locate an up to date copy Annual subscription cost for software, may be more expensive than buying a copy of the software on a CD You never own the product Product is leased from the company/if the user does not pay then the product is locked out	**6**

Question	Answer	Mark
15	**Two** from: Greater productivity Cheaper in the long run Standard of the product is more consistent Robots work 24/7 Robots can work in hostile/dangerous environments/dangerous to humans	**2**

Question	Answer	Mark
16	To be marked as a level of response: The candidate must complete L1 to get into L2 and L2 to get into L3 **Level 3 (7–8 marks):** Candidates will address both aspects of the question and discuss/consider different benefits/drawbacks. The issues raised will be justified. There will be a reasoned conclusion. The information will be relevant, clear, organised and presented in a structured and coherent format. **Level 2 (4–6 marks):** Candidates will address both aspects of the question and discuss/consider different benefits/drawbacks although development of some of the points will be limited to one side of the argument. There will 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 may only address one side of the argument, and give basic benefits and drawbacks. Answers may be simplistic with little or no relevance. **Level 0 (0 marks)** Response with no valid content *Answers may make reference to, e.g.:* *Advantages* They provide more consistent answers Do not forget to ask a question Can reduce the time to find the solution/get results/to obtain a diagnosis They give a number of different possibilities Less need for specialists/doctors therefore reduces the cost of finding a solution Allows the system to be used in parts of the world where experts/medical specialists not available Use the collective wisdom of more than one expert//it contains more information than one doctor Can be used online/24/7 *Disadvantages* They are machines therefore lack common sense If the knowledge base contains errors then incorrect decisions can be made Expensive to set up in the first place/purchase The need for training for operators Cost of training for operators Expensive to maintain	**8**