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Cambridge Assessment International Education

Cambridge IGCSE™

INFORMATION & COMMUNICATION TECHNOLOGY **0417/11**

Paper 1 Theory **October/November 2022**

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 2022 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

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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.

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Question	Answer	Marks
1(a)	Gutter	**1**
1(b)	Header	**1**
1(c)	Wrapping	**1**
1(d)	Justified	**1**

Question	Answer	Marks
2(a)	**Three** from, for example**:** SMS Making/receiving a phone call Checking the time Use appointments/calendar Taking pictures Record sound Bluetooth to share files	**3**
2(b)	**Two** from: More accessible/portable as it is on the wrist Less chance of being lost/stolen/forgotten Less chance of it being dropped as it is fastened to the wrist Can access simple apps easier for example heart rate/timer	**2**
2(c)	**Two** from: Smaller screen size therefore difficult to see More difficult to enter the data More difficult to access detailed apps for example, email	**2**

Question	Answer	Marks
3	Max **three** from: Weak password is easy to guess Weak passwords consist of all letters or all digits or all digits with one letter/all letters with one digit//words found in a dictionary//Strong passwords use a mixture of upper case, lower case, symbols and digits Weak password is one that has less than 8 characters Weak password has repeated characters Weak password has characters next to each other on a QWERTY keyboard Weak passwords are ones that are similar to the username Weak passwords can use personal information All of the examples given in the question are weak passwords Max **two** from: A good example of a strong password A good example of a different weak password	**4**

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Question	Answer	Marks
4(a)(i)	**One** from: 0 100	**1**
4(a)(ii)	Abnormal Normal	**2**
4(b)	**Boolean** Gender **Numeric: integer** Exam_mark **Numeric: decimal** Average_mark **Alphanumeric** Student_name	**4**

Question	Answer	Marks
5(a)	**Three** from: Measurements can be taken continually Safer to take the measurements Measurements can be taken outside school hours The computer will not forget to take readings Readings are taken at a more consistent time interval The computer reads the data more accurately	**3**
5(b)	**Six** from: The data from the sensor is read/received by the computer The data is converted to digital by the ADC The software is opened on the computer The graph type is loaded/selected The data is uploaded to the graph The graph is plotted/created Axes/legend/title added	**6**
5(c)	**Four** from: **Measurement** Automatically detects changes in the environment Measurement takes the readings and stores the result Measures/reads physical quantities **Control** Changes the environment Compares against preset value Action taken depending on comparison to preset value **To gain full marks the description must have correct answers for both measurement and control**	**4**

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Question	Answer	Marks
6(a)	**Eight** from: **For** Face can be identified faster Face can be identified by electronic comparison therefore relative higher level of accuracy Facial recognition can uniquely identify individuals Can automatically compare faces from older images System can work continuously but a human checker would need to take breaks **Against** Dark glasses/facial hair/face coverings may cause the facial recognition systems to not work More difficult to change biometric data Recognising a person can be slower as more checking is carried out Harder to set up the facial recognition system Takes longer to add new people to the system Biometrics can use a lot of memory to store the data Intrusive as personal details have to be stored More likely to be affected by the environment With the video system each frame needs to be checked with known images which can lead to errors **To gain full marks the discussion must have correct answers for both for and against**	**8**
6(b)	**Three** from: Finger print Hand print Vein geometry Retina Iris Speech/Voice	**3**

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Question	Answer	Marks
7	**Six** from: I block unwanted messages/suspicious users… …and report the sender Before using the messaging system, I check how to block and report unwanted users… …this stops predators I never arrange to meet strangers alone I always tell a responsible adult if I plan to meet someone I always meet in a public place I avoid giving away personal information I report abusive messages from a sender of the messages I report cyber-bullying When sending messages I always use appropriate language If someone messages me with private and personal information about themselves I respect their confidentiality/privacy I always read carefully the messages before I send I avoid sarcasm I am not offensive when replying I carefully check that I am replying to the correct person I do not enable my location when messaging	**6**

Question	Answer	Marks
8	**Four** from: What may be immoral in some cultures may be acceptable in others Just because something is immoral doesn't mean that it is illegal The ICT solution can cause distress to others/be offensive Becomes immoral if the person gains from their actions Max **two** marks for examples: Not creating a website full of false facts/news Not including obscene/offensive/inappropriate/extreme/blasphemy /discriminatory content Not creating a video solution that earns you money by stating false facts/lies Not creating an ICT solution that coerces people to give money Invasion of privacy	**4**

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Question	Answer	Marks
9	**Six** from: **Similarities** Both can use Wi-Fi to access the internet Both can access the internet use hotspots Both can use Bluetooth Tethering to allow access to the internet **Differences** *Desktops* More websites will work with the desktop Larger keyboards to type in a web address Larger screens to see the whole webpage More stable and reliable connections Tends to be a clearer layout to make it easier to access the internet More accessible information A desktop can connect to the internet via an ethernet cable *Smartphones* Access the internet from more locations Easier to look things up on the go Screen/keyboard built into the device therefore easier to access websites A smartphone can use mobile data/4G/3G to access the internet A smartphone is more portable therefore you can access the internet while travelling **To gain full marks the comparison must have correct answers for both similarities and differences**	**6**

Question	Answer	Marks
10(a)	**Two** from: Moving images/video Sound/Audio Animation	**2**

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Question	Answer	Marks
10(b)	**Six** from: **Advantages** Easier to display to parents Can take less time to display the information Quicker to change/update content of the multimedia presentation More control over the layout of the presentation as not using a third party browser More control over the sound in the presentation as using own equipment People viewing the Multimedia Presentation will be school based Can be viewed without internet access **Disadvantages** The multimedia presentation is only available in the school during school time whereas a web page can be used in other places The visitor may not see the whole presentation The multimedia presentation may not include sound due to being shown in the school Multimedia presentations can require expensive hardware to produce and view Multimedia seen by less people Multimedia more expensive software needed to produce the presentation More specialist training needed to produce it **To gain full marks the description must have correct answers for both advantages and disadvantages**	**6**
10(c)	**Monitor/data projector** – 1 mark **One** from: To show what the presentation looks like To show the layout of the presentation **Speaker** – 1 mark To listen if the sound matches the images – 1 mark **Printer** – 1 mark To check that handout format works – 1 mark	**4**

Question	Answer	Marks
11(a)	**Four** from: The email appears generic If the email is not checked and the data not kept up to date before the mail merge the errors are more difficult to change If a mistake is made on the master/template then all emails are affected Emails can be sent with wrong data/records which could be embarrassing Emails could be sent to the wrong patient Moving the data file/source/renaming the file can cause the mail merge to fail The emails may be directed to junk mail folders	**4**

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Question	Answer	Marks
11(b)	**Six** from: The data will have the name/medical information attached therefore it needs protecting The data is confidential as it links directly to the person The data will be sensitive To prevent blackmail/bullying from using medical results To prevent fraud from using financial information To prevent identity theft using contact details To avoid the doctor's surgery getting fined if it got made public The doctor's surgery's reputation would suffer Patients would lose trust	**6**

Question	Answer	Marks
12	**Four** from: Is more robust as no moving parts Can be more easily carried Use less power Have faster data access Have faster data transfer times	**4**

Question	Answer	Marks
13(a)	**Two** from: Method of accessing/linking other resources/web pages from the current web page Clicking on the word/phrase/image/area of page Navigation/re-directed to another web page	**2**
13(b)	**Two** from: Method of saving a web page's address Used for easy retrieval of the website Storing a link to a website	**2**
13(c)	**Two** from: An anchor is a specific location/reference point within a web page When clicked it can move the pointer to the start/end of a page Used on very long pages to save you having to physically scroll all the way down/up the page. The browser will automatically jump to the corresponding heading within the page/destination anchor	**2**

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Question	Answer	Marks
14	**Six** from: **Benefits** Safer to use drones than human life being risked in forest areas Drones can gain a better overall view of the forest than the human Drones can be used in areas that would not be accessible to humans Drones can cover a greater area than a human in the time available Data from the drone can be automatically uploaded to computer system May change animal behaviour if humans are used//Less invasive for the animals **Drawbacks** Damp conditions/environment/weather may cause issues with the electronics Difficult to navigate in the tree areas Noise/sight of the drone may affect the animals More chance of collision/bird attack If drone crashes it could be difficult to find/retrieve Potential danger to other animals/birds **To gain full marks the description must have correct answers for both benefits and drawbacks**	**6**

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