



## Cambridge IGCSE™ (9–1)

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INFORMATION AND COMMUNICATION TECHNOLOGY

0983/11

Paper 1 Theory

October/November 2021

MARK SCHEME

Maximum Mark: 100

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**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 2021 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

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This document consists of **10** printed pages.

**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	Marks
1(a)	The physical components of the computer	1
1(b)	<b>Two</b> from: Processor Motherboard Video/graphic card Sound card	2
1(c)	<b>One</b> from: Programs for controlling the operation of a computer Programs for processing of electronic data Program/data/applications	1
1(d)	<b>Two</b> from for example: Word processing Spreadsheet Database Presentation	2

Question	Answer	Marks
2	Car production workers Payroll workers	2

Question	Answer	Marks
3	<b>Two</b> from: Tends to be a faster to load up the operating system They are more lightweight so can be carried anywhere//More portable Don't generate as much heat Lower power consumption therefore batteries last longer	2

Question	Answer			Marks	
4		<b>Looking at existing paperwork</b>	<b>Observation</b>	<b>Questionnaire</b>	4
	This method gives the systems analyst an overall view of the system		✓		
	Individuals can remain anonymous			✓	
	This method allows information to be collected that cannot be obtained from any other method	✓			
	This method gives the quickest analysis of the data			✓	

Question	Answer	Marks
5(a)	<p><b>Six from:</b></p> <p>Each module is tested separately            Modules are tested by the programmers            Modules/system are tested with live data            Errors and problems are noted            Improvements are made to the module            The module/system is retested            Modules are combined and tested together</p> <p>System is tested as a whole            System is tested to meet the user's requirements</p>	6

Question	Answer	Marks
5(b)	<p><b>Eight</b> from:</p> <p><b>Advantages</b>            Prevents double booking            The customer can see immediately when the holiday has been booked            Bookings can be made 24/7            No need to travel to the booking office/queue up so saves time            Can be booked from any location            Saves cost of travelling to the booking office            Tickets are usually sent online and therefore paperless//Saves printing and postal costs            Usually cheaper as lower/fewer overheads            Customers can more easily see the tours that are available</p> <p><b>Disadvantages</b>            Setting up is expensive//maintenance is expensive            Internet access is needed to run the booking system therefore the cost may be increased            More reliant on server/network            Booking mistakes can be more easily made            Mistakes are more difficult to rectify due to the speed of booking            If the system crashes during the booking the booking may not be made</p> <p><b>To gain full marks there must be at least one advantage and one disadvantage</b></p>	8

Question	Answer	Marks
6	<p><b>Problem:</b>  <b>Award a mark for each problem identified</b>            I avoid back and neck problems            I avoid eye strain            I avoid getting headaches            I avoid epilepsy</p> <p><b>Strategies:</b>            Max <b>four</b> from:            Make sure the top of the screen is at eye level            Make sure that I adjust the tilting screen correctly            Take regular breaks            Do neck/back exercises            Make sure I use blue lens spectacles            Use a screen filter            Use a matt/anti-glare screen            Turn the screen away from the window            Use a computer screen for a short time/take regular breaks            Have my eyes tested regularly            Improve the lighting in the room            Sitting further away from the screen            Keeping the screen clean            Position the screen to reduce glare            Use a non-flickering screen/LED/LCD            Turn the brightness down on the screen</p>	6

Question	Answer	Marks
7	<p><b>Four from:</b></p> <p>Smartphone sends data to its Bluetooth connector            Data is converted to radio waves            The smartphone automatically detects nearby devices            The smartphone pairs to the other device if in range            The smartphone randomly chooses one of 79 possible channels            If the channel is in use, it randomly chooses another            The connection changes channels, every few seconds            Sends the radio wave to the other device</p>	4

Question	Answer	Marks																				
8(a)	<p><b>Four from:</b></p> <p>Internet is used to share and distribute information outside the organisation whereas the intranet within an organisation            Internet is used to send and receive emails and messages outside the organisation whereas intranet sends and receives messages within an organisation            The intranet meets the needs of the organisation whereas internet aims to meet the needs of everybody            The internet facilitates collaboration with others whereas the intranet is only used to collaborate with other members within an organisation            The internet is used to browse the World Wide Web</p>	4																				
8(b)	<table border="1"> <thead> <tr> <th></th> <th>Facial recognition</th> <th>Password</th> <th>Voice Recognition</th> </tr> </thead> <tbody> <tr> <td>This method cannot access the smartphone unintentionally</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>The accuracy of this method can be affected by noise</td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>This method requires the use of the smartphone's camera</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>This method could be compromised by shoulder surfing</td> <td></td> <td>✓</td> <td></td> </tr> </tbody> </table>		Facial recognition	Password	Voice Recognition	This method cannot access the smartphone unintentionally		✓		The accuracy of this method can be affected by noise			✓	This method requires the use of the smartphone's camera	✓			This method could be compromised by shoulder surfing		✓		4
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Question	Answer	Marks
9(a)	<p><b>Two</b> from, for example:</p> <ul style="list-style-type: none"> <li>Fit windscreens</li> <li>Fit the wheels</li> <li>Welding body panels</li> <li>Move cars from one place to another</li> <li>Fit engines</li> </ul>	<b>2</b>
9(b)	<p><b>Six</b> from:</p> <ul style="list-style-type: none"> <li>The depth of the paint is read by the sensor</li> <li>The depth of paint is sent from the sensor to the ADC/microprocessor</li> <li>The digital data from the ADC is read by the microprocessor</li> <li>The microprocessor compares this data to the minimum depth of the paint/preset value</li> <li>If the data is less than the minimum depth/preset value, the microprocessor sends a signal to the actuator</li> <li>If the data is more than the minimum depth/preset value microprocessor does nothing</li> <li>Process is continuous</li> </ul>	<b>6</b>
9(c)	<p><b>Six</b> from:</p> <p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>They can work in areas where it would be harmful for humans</li> <li>They can work 24/7</li> <li>Cheaper in the long run</li> <li>Higher productivity</li> <li>The finish is more consistent</li> </ul> <p><b>Disadvantages</b></p> <ul style="list-style-type: none"> <li>Expensive to purchase</li> <li>Skills can be lost</li> <li>Expensive to maintain/reprogram</li> <li>Expensive to start up//train staff to operate the robots</li> </ul> <p><b>To gain full marks there must be at least one advantage and one disadvantage</b></p>	<b>6</b>

Question	Answer	Marks
10(a)	<b>Three</b> from:  LOOKUP allows for horizontal and vertical searching whereas VLOOKUP allows for vertical searching LOOKUP does not require an index value/only works on the second row/column whereas VLOOKUP requires an index value LOOKUP usually only works when the data is sorted VLOOKUP only returns data to the right of the searched column VLOOKUP user can select either an approximate or exact match to the lookup value	<b>3</b>
10(b)(i)	<b>Three</b> from:  The formula looks up the value in D2... ...In the (range) A2 to A7 And returns the <u>corresponding</u> value In the 3rd column/Column C	<b>3</b>
10(b)(ii)	Add FALSE/0 to the end of the formula – 1 mark Sort the range into ascending order of column A – 1 mark	<b>2</b>
10(c)	Poor	<b>1</b>
10(d)	<b>Four</b> from:  Quicker to type in the formula Fewer mistakes when typing in the formula Easier to spot mistakes Easier to expand the range Takes up less storage space Easier to remember when retyping	<b>4</b>

Question	Answer	Marks
11(a)	<b>Two</b> from for example:  Email address Real names DOB Home address Contact phone number Membership card number Location data Internet Protocol (IP) address Picture of yourself Gender	<b>2</b>



Question	Answer	Marks
11(b)	<p><b>Two</b> from:</p> <p>Password should not relate to personal details Should be a long password Not previously used password Should not include repeating/obvious patterns//predictable words Password should be strong</p>	<b>3</b>
11(c)	<p><b>Six</b> from:</p> <p>Use anti-spyware/up to date antivirus software Play the games with the firewall operational Play only with authorised versions of games which you have purchased from the correct sources and for which you have a licence Download/buy files and new software from reputable sources Do not forget to delete your account details when you are not playing again Keep the game software up to date. When disposing of your gaming device ensure all of your personal information has been deleted. Choose a username that does not reveal any personal information Be aware of criminals buying or selling 'property' that exists inside a computer game, in the real world</p>	<b>6</b>

Question	Answer	Marks
12(a)	<p><b>Two</b> from:</p> <p>Dedicated website/app/platforms It interacts with other users Can be used to find people with similar interests</p>	<b>2</b>
12(b)	<p><b>Six</b> from:</p> <p>Communicating with friends and colleagues all over the world Promotes collaboration and teamwork Instant communication Easy to find other people with common interests Allows the exchange of content or documents Allows people to share best practice/knowledge/skills It can help in community projects Gives up to date information Can give more confidence to some people who may be shy//develop social skills As it is seen by a lot of people helps advertising Easier for online buying and selling//market products Can be used more easily for analytics and market research It can promote talent quickly, musicians Make/socialise with new friends</p>	<b>6</b>

Question	Answer	Marks
13(a)	<p><b>Four</b> from:</p> <p>Load the document            Highlight the text            Click Insert then Table            Select Convert text to table            Click on 2 columns            Click separate by :            Click ok</p>	<b>4</b>
13(b)	<p><b>Two</b> from:</p> <p>Compares each typed word...            ...with its dictionary/database            Uses algorithms to check the spelling</p>	<b>2</b>
13(c)	<p><b>Two</b> from:</p> <p>Real names are not recognised            Badly spelt words will not be recognised            Incorrect grammar may not be recognised            It will not find words that sound the same but have been used incorrectly            Some words may be spelt incorrectly but form another word            They do not learn from their mistakes unless added to the dictionary            They may use the wrong dictionary</p>	<b>2</b>