

QUESTION 1.

Mark Scheme

Cambridge IGCSE – May/June 2015



(ii) 1 mark for name and 1 mark for description

any **one** from:

chip and PIN reader

- only the user and the bank know which codes can be generated

request user name

- additional security together with password/PIN

anti-virus

- removes/warns of a potential virus threat which can't be passed on to customers

firewall

- (helps) to protect bank computers from virus threats and hacking

encryption

- protects customer data by making any hacked information unreadable

security protocol

- governs the secure transmission of data

Biometric

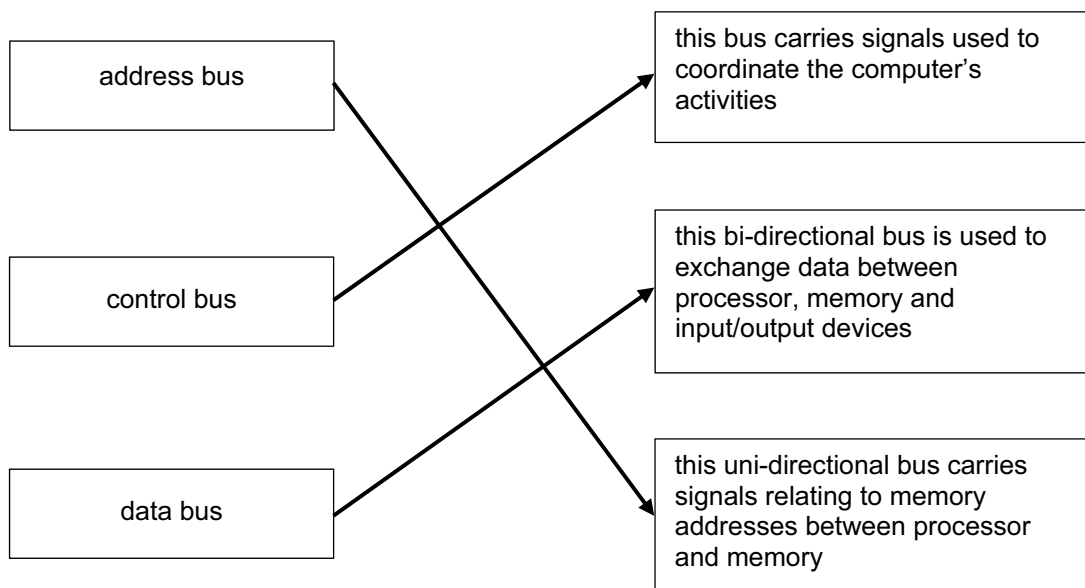
- to recognise user through the use of, e.g. facial/retina/finger print

Alerts

- users IP/MAC address is registered and user is alerted through, e.g. SMS if account is accessed through an unregistered address

[2]

7 (a)



2/3 matches – 2 marks

1 match – 1 mark

[2]



(b)

description of stage	sequence number
the instruction is then copied from the memory location contained in the MAR (memory address register) and is placed in the MDR (memory data register)	3
the instruction is finally decoded and is then executed	7
<i>the PC (program counter) contains the address of the next instruction to be fetched</i>	(1)
the entire instruction is then copied from the MDR (memory data register) and placed in the CIR (current instruction register)	4
the address contained in the PC (program counter) is copied to the MAR (memory address register) via the address bus	2
the address part of the instruction is placed in the MAR (memory address register)	6
the value in the PC (program counter) is then incremented so that it points to the next instruction to be fetched	5*

The incrementation of the program counter can appear at any stage after 2. All other stages must be in the correct given order.

[6]

8 (a) hours: 18

minutes: 53

[2]

(b)

hours ("C")

minutes ("D")

0	0	0	0	0	1	1	1	:	0	0	0	1	1	1	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

[2]

QUESTION 2.

Mark Scheme

Cambridge IGCSE – May/June 2015



- (b) 1 mark for correct sensor, 1 mark for its matching application
(all THREE applications must be different)

sensor	application
infra-red/motion	automatic doors burglar alarm systems
temperature	chemical process central heating/air con system greenhouse environment oven
sound/acoustic	burglar alarm systems leak detection system disco lighting
moisture/humidity	clothes drier environmental control (greenhouse, air con)
pressure	burglar alarm system traffic light control chemical process
carbon dioxide/ oxygen/gas	pollution monitoring in a river greenhouse environment (growth control) confined area (e.g. space craft) Fish tank/Aquarium
magnetic field	mobile phone anti-lock braking CD players

[6]

- 8 1 mark per correct word

Freeware

Shareware

Free software

(Computer) Ethics

Plagiarism

[5]



9 (a) 1 mark per correctly placed tick

statement	interpreter	compiler
creates an executable file that runs directly on the computer		✓
more likely to crash the computer since the machine code produced runs directly on the processor		✓
easier to debug since each line of code is analysed and checked before being executed	✓	
slow speed of execution of program loops	✓	
it is more difficult to modify the code since the executable code is now in machine code format		✓

[5]

(b) Any **one** from:

- code is required to be converted into machine code/binary
- code needs to be produced that can be understood by the computer

[1]

(c) Any **one** from:

- close to English/native/human language
- easier/faster to correct errors/read/write
- works on many different machines/operating systems (portable)

[1]

(d) Any **one** from:

- work directly on registers/CPU
- more control over what happens in computer
- can use machine specific functions

[1]

(e) 1 mark per correct letter, maximum 2 marks

Assembly code: **B**
 High-level language code: **C**
 Machine code: **A**

[2]

QUESTION 3.

Mark Scheme
Cambridge IGCSE – May/June 2016



8 (a) (i) Any **two** from:

- to protect against key logging software/spyware
- can stop key presses being recorded
- can stop key presses being relayed
- drop down boxes cannot be recorded as key presses
- drop down boxes can be placed in different location on the screen each time (to overcome screen capture issues)

[2]

(ii) Any **one** from:

- hacker never finds all characters on the first hack
- makes it more difficult for hackers to find the order of the characters
- hacker needs to hack the system several times to gain the whole password
- shoulder surfing will not give person full password

[1]

(b) Any **two** from:

- fingerprint scanner
- face recognition software
- retina scanner/iris scanner
- voice recognition software

[2]

9 (a) 1 mark for correct check digit and 1 mark for showing the calculation

$$(4 \times 1) + (2 \times 2) + (4 \times 3) + (1 \times 4) + (5 \times 5) + (0 \times 6) + (8 \times 7)$$

$$= 4 + 4 + 12 + 4 + 25 + 0 + 56 = 105$$

$$105/11 = 9 \text{ remainder } 6$$

check digit is: **6**

1 mark for any correct
line of working

[2]

(b) **incorrect** check digit

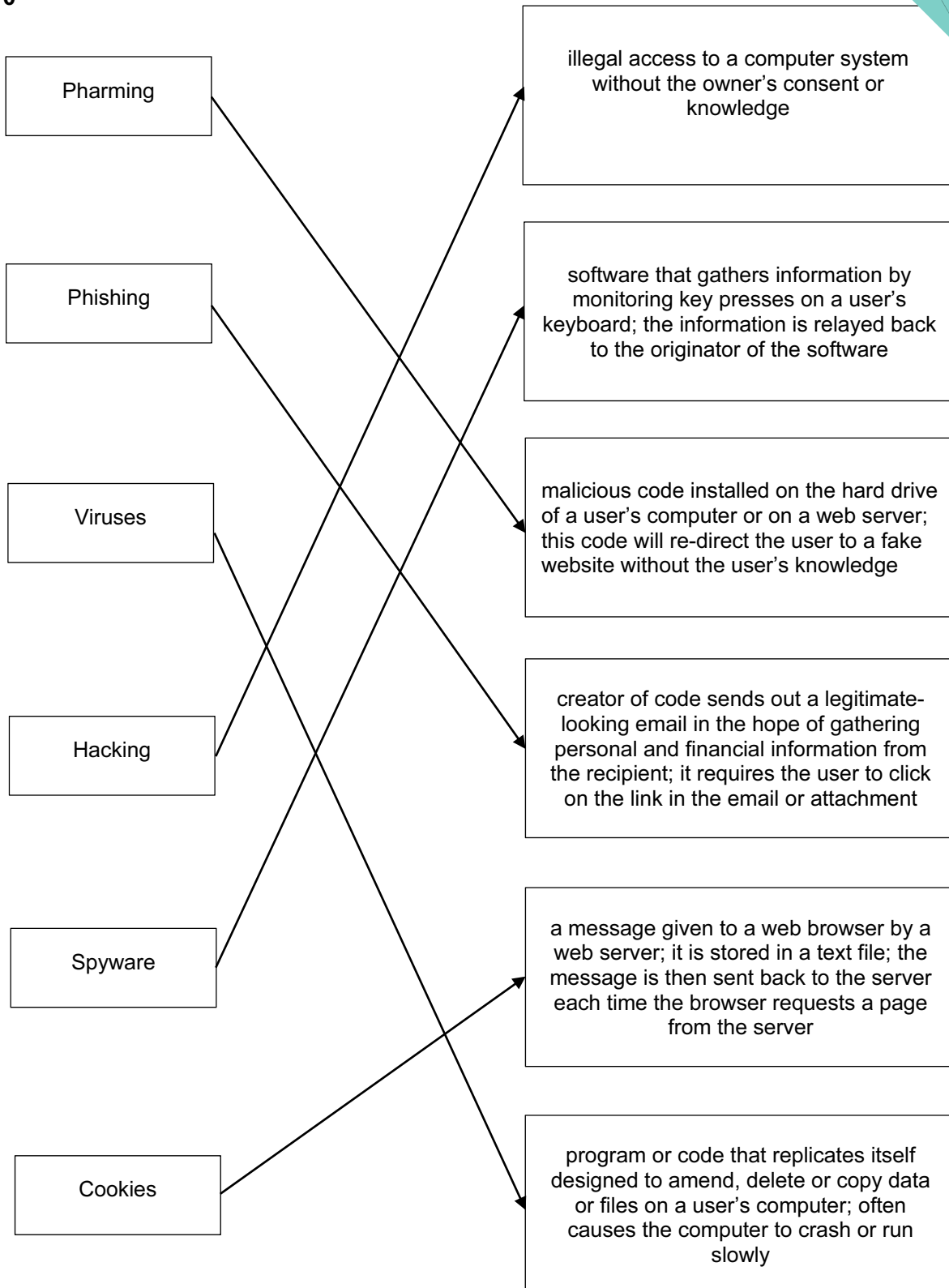
[1]

- check digit should be 1
- $(3 \times 1) + (2 \times 2) + (4 \times 3) + (0 \times 4) + (0 \times 5) + (4 \times 6) + (5 \times 7) // 3 + 4 + 12 + 0 + 0 + 24 + 35 //$
Total = 78
- 78/11 gives 7 remainder 1

[2]



10



5/6 matches – 5 marks
 4 matches – 4 marks
 3 matches – 3 marks
 2 matches – 2 marks
 1 match – 1 mark

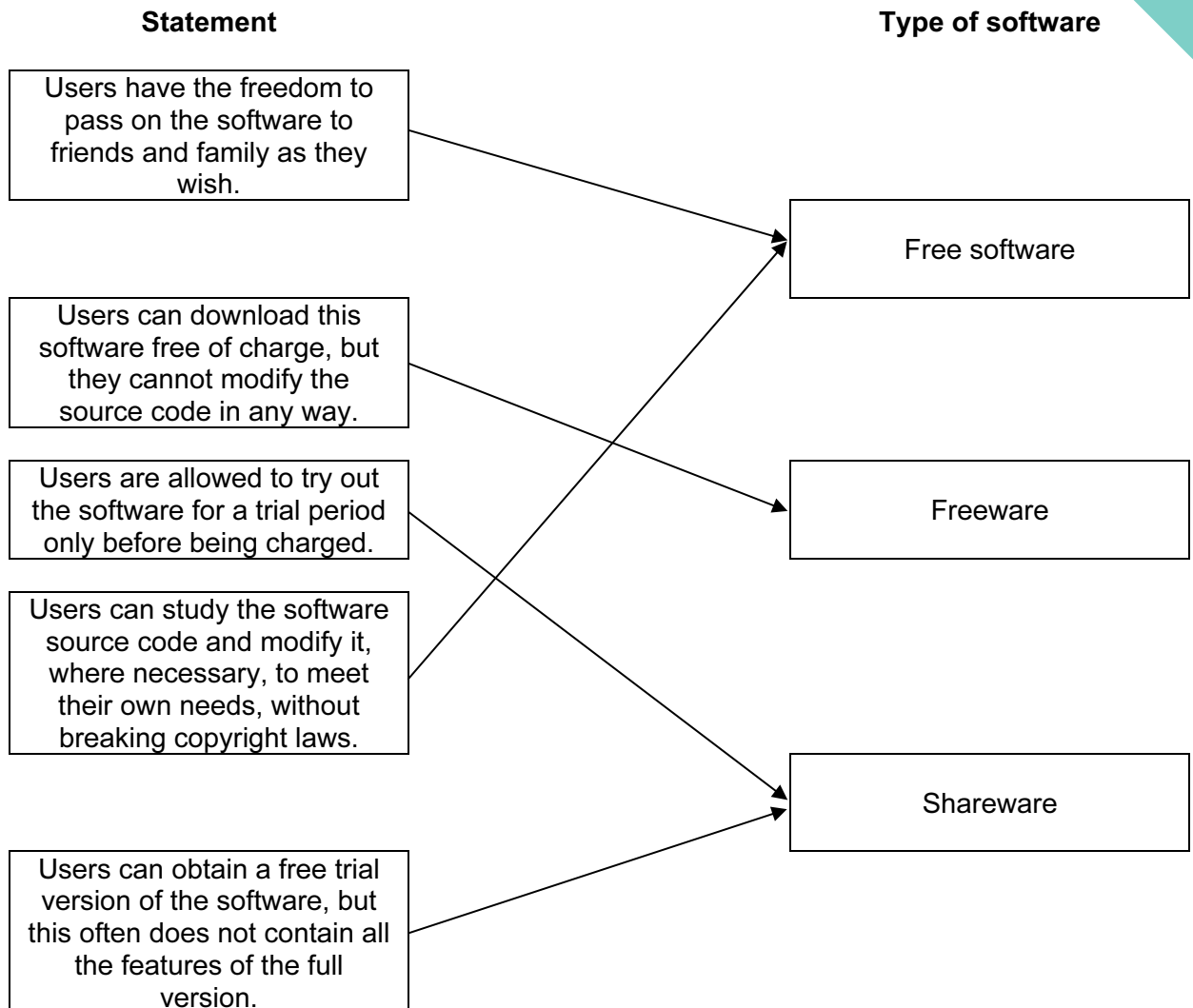
QUESTION 4.

Mark Scheme
Cambridge IGCSE – May/June 2016



8 (a) 1 mark for correct lines from each type of software

NOTE: all statements that are correct must be connected to the correct type of software for the mark to be awarded



[3]

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(b) Any **three** from:

- That we should follow Copyright laws/intellectual property rights/work should not be stolen/plagiarised
- That we should follow Data Protection laws
- That we should not create or distribute malware//description of malware
- That we should not hack/crack other computers//description of hacking
- That we should protect our own computers against malware/hacking
- That we should consider privacy issues (when using social networking)
- That we consider anonymity issues (when using social networking)
- That we should consider environmental impacts when using computers
- Loss/creation of jobs from use of computers/robotics
- We should follow codes of practice (for creation of code e.g. ACM/IEEE)

[3]

(c) 2 marks for each term described

Viruses:

- program/software/file that replicates (copies) itself
- intends to delete or corrupt files//fill up hard disk space

Pharming:

- malicious code stored on a computer/web server
- redirects user to fake website to steal user data

Spyware:

- monitors and relays user activity e.g. key presses//key logging software
- user activity/key presses can be analysed to find sensitive data e.g. passwords

[6]

(d) Any **three** from:

- examines/monitors traffic to and from a user's computer and a network/Internet
- checks whether incoming and outgoing traffic meets a given set of criteria/rules
- firewall blocks/filters traffic that doesn't meet the criteria/rules
- logs all incoming and outgoing traffic
- can prevent viruses or hackers gaining access
- blocks/filters access to specified IP addresses/websites
- warns users of attempts by software (in their computer) trying to access external data sources (e.g. updating of software) etc. // warns of attempted unauthorised access to the system

[3]



9 (a)

Binary number A:

1	1	1	0	0	1	0
---	---	---	---	---	---	---

Binary number B:

1	0	0	1	1	1	0
---	---	---	---	---	---	---

[2]

(b)

Parity Bit

Binary number A

1

Binary number B

1

[2]

10 1 mark for each correct storage device

ROM (not EPROM/PROM)
Blu-ray disc
RAM
DVD/ DVD-R(+R)/ DVD-RW(+RW)/ DVD-ROM (not CD or DVD-RAM)
SSD/example of a USB <u>storage device</u>
DVD-RAM

[6]

11 1 mark for each correct point

- Presentation is used to format colour/style
- Structure is used to create layout
- In a HTML document structure and presentation are often kept separate
- By keeping the presentation separate it is easier to update colour/font
- Presentation is often stored in a file called a CSS ...
- ... the CSS is then linked to the HTML document to implement the presentation requirements
- (Mark-up) tags are used to define the structure of the document ...
- ... presentation and formatting can also be included within the tags

[4]

QUESTION 5.

PUBLISHED



Question	Answer	
7(b)	1 mark each use, must be different. Simplex e.g.: Microphone to computer Sensor to computer Computer to printer Computer to speaker Computer to monitor Webcam to computer Sending data to a device // sending data from a device Duplex e.g.: Telephone call Voice over IP Computer to printer (only award once) Instant messaging Broadband connections Video conferencing Sending data to and from devices e.g wireless technology Computer to modem	
7(c)	2 marks for IC, 2 marks for USB IC - parallel transmission // description of parallel - for sending data internally USB - serial transmission // description of serial - for sending data externally (to and from peripherals / between devices)	4

Question	Answer	Marks
8(a)	2 marks for SSL, 2 marks for Firewall SSL protocol Two from: - uses encryption - encryption is asymmetric / symmetric / both - makes use of (public and private) keys - data is meaningless (without decryption key / if intercepted) Firewall Two from: - helps prevent unauthorised access // helps prevent hacking - checks that data meets criteria // identifies when data does not meet criteria - acts as a filter for (incoming and outgoing) data // blocks any unacceptable data //allows acceptable data through	4



Question	Answer
8(b)	Six from: Encrypt the data so it cannot be understood by those not entitled to view it Password protected / biometrics to help prevent unauthorised access Virus checking software helps prevent data corruption or deletion ... identifies / removes a virus in the system ... <u>scans</u> a system for viruses Spyware checking software helps prevent data being stolen/copied/logged ... <u>scans</u> a system for spyware Drop-down input methods / selectable features to reduce risk of spyware / keylogging Physical method e.g. locked doors / CCTV timeout / auto log off ... to help prevent unauthorised access Network / company policies // training employees ... to educate users how to be vigilant Access rights allows users access to data that they have permission to view ... prevents users from accessing data that they do not have permission to view

Question	Answer	Marks
9	Six from: - temperature sensor - analogue data / temperature is <u>converted to digital</u> data (with an ADC) - sensor sends signal to the microprocessor - microprocessor compares input values with stored values/pre-set values if the temperature value input is too high/low a signal is sent from the microprocessor to turn on / off / up / down the cooling unit ... if temperature matches the stored values no action is taken - an actuator is used to turn the cooling unit on / off / up / down - the process is a continuous loop	6

Question	Answer	Marks
8(c)	Any four from: – (Infrared) rays are sent across screen (from the edges) – Has sensors around edge // Sensors capture beams – (Infrared) rays form a grid across the screen – (Infrared) ray is broken (by a finger blocking a beam) – Calculation is made (on where beam is broken) to locate the 'touch' // Co-ordinates are used to locate the touch	4
8(d)	Secondary Storage – any two from: – Not directly accessed by the CPU – Non-volatile storage – Secondary is internal to the computer/device – An example of secondary storage would be HDD/SSD Off-line storage – any two from: – Non-volatile storage – Off-line storage is storage that is removable from a computer/device // not internal // portable – An example of off-line storage would be CD/DVD/USB stick/SD card/magnetic tape/ external HDD/SSD	4

Question	Answer	Marks
9	Any six from: – Suitable biometric device, such as fingerprint scanner/retina/eye/iris scanner/face recognition/voice recognition/palm scanner // description of use e.g. use fingerprint on device – Sensor (in biometric device) captures/takes data/readings (of user) – Data/readings are converted from analogue to digital (using ADC) – Data/reading sent to the microprocessor – Data/readings compared to stored values/data ... – ... if data/readings match user can enter – ... if data/readings do not match user is declined entry // user asked to try again ... – ... alert may be sent to security // alarm may sound	6

Question	Answer	Marks
10(a)	Any four from: – Structure and presentation are defined using (mark-up) tags – Structure and presentation dictate the appearance of the website – Structure is used for layout – Example of structure – Presentation is used for formatting / style – Example of formatting – Separate file / CSS can be used for presentation content	4
10(b)(i)	1 mark for each correct part – domain (name) – file name/webpage name	2
10(b)(ii)	Any two from: – Hypertext Transfer Protocol Secure // it is the access protocol // It is a protocol – It means the website uses SSL/TLS – It means data sent (to and from the webserver) is encrypted	2
10(c)	Any two from e.g. : – To store items that a customer has added to an online shopping basket – To store a customer's credit card details – To store log-in details – To track what product a customer browses // Track music preferences – Targeted advertising // making recommendations – Personalises/customises the experience – Shows who are new and returning customers – To speed up log-in times – To speed up/allow single click purchases – Improves the experience	2

QUESTION 7.

0478/13

Question	Answer	Marks
3	2 marks per issue from: Phishing – Legitimate looking emails sent to use – When user clicks on attachment / link sent to fraudulent website – Asked to reveal/designed to steal sensitive information Pharming – Malicious code loaded on user hard drive – Will redirect URL requests to fraudulent website – Asked to reveal/designed to steal sensitive information Spam – Junk / unwanted email – Sent to large numbers of people – Used for advertising / spreading malware – Fills up mail boxes	6

Question	Answer	Marks															
4(a)(i)	<table border="1"> <thead> <tr> <th>Received Byte</th><th>Transmitted correctly (✓)</th><th>Transmitted incorrectly (✓)</th></tr> </thead> <tbody> <tr> <td>10001011</td><td></td><td>✓</td></tr> <tr> <td>10101110</td><td>✓</td><td></td></tr> <tr> <td>01011101</td><td>✓</td><td></td></tr> <tr> <td>00100101</td><td>✓</td><td></td></tr> </tbody> </table>	Received Byte	Transmitted correctly (✓)	Transmitted incorrectly (✓)	10001011		✓	10101110	✓		01011101	✓		00100101	✓		4
Received Byte	Transmitted correctly (✓)	Transmitted incorrectly (✓)															
10001011		✓															
10101110	✓																
01011101	✓																
00100101	✓																
4(a)(ii)	One from: – ARQ – Check Sum	1															

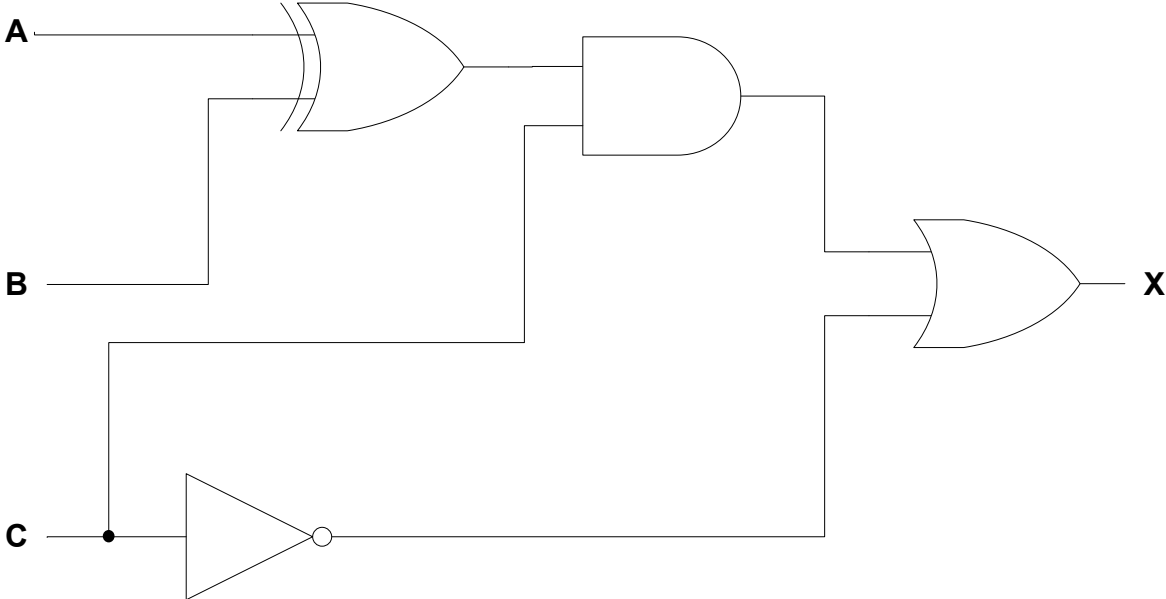
Question	Answer	Marks
4(b)(i)	– Multiple bits / byte(s) sent at the same time – Using multiple wires	2
4(b)(ii)	Any one from e.g.: – Integrated Circuits – Any appropriate CPU buses – Any suitable device connection that uses parallel	1
4(b)(iii)	Two from: – Bits remain synchronised ... – ... reducing data errors – Only single wire is required ... – ... more cost effective to install/manufacture	2
4(c)(i)	– Encrypted text is meaningless – Need the key to decrypt the text	2
4(c)(ii)	– Increase length / more bits used for key ... – ... will generate more possibilities for key / less chance of decryption by brute force method	2

Question	Answer	Marks
5(a)	(0)1101011	1
5(b)	000 100101100 1 mark for three leading zeros, 1 mark for correct binary number	2
5(c)	B3 1 mark for each correct character	2
6(a)	Any two from: – A signal sent from a device / software – Requests processor time // Processor stops to service interrupt – Interrupts have different priorities	2

QUESTION 8.

0478/13

Question	Answer	Marks
5(a)	Any four from: – Stock control system has a database of stock – Each product has a (unique) barcode – Barcode is scanned, and product looked up in database – Stock levels for product are reduced (by 1) – Stock is checked against minimum level – If stock at/below minimum level an order is placed – When stock is re-ordered flag is reset	4
5(b)	– It has RAM to store the data / programs / by example currently in use – It has ROM to permanently store the boot up instructions – It has HDD to store the stock database / software / OS / by example	3
5(c)	Any four from: – MAR – MDR – PC – ALU – CU – ACC – CIR – Buses – Registers	4

Question	Answer	Marks
6(a)	 One mark for each correct gate.	4

QUESTION 9.

Mark Scheme

Cambridge IGCSE – October/November 2015



- 6 (a) Any **three** from:
- hypertext mark-up language
 - used to create/develop/author webpages
 - translated by a browser to display webpages
 - uses (opening and closing) tags to display/format content

- (b) **Structure:**
- instructs how the layout of the content is displayed

Presentation:

- instructs how the content will be formatted e.g. colour/style/CSS [2]

- (c) Any **three** from:
- displays web page
 - interprets/translates the HTML document
 - interprets/translates embedded scripting, for example JavaScript
 - provides functions, such as bookmarks and history
 - identifies protocols, such as https, SSL [3]

- 7 (a) (i) 1 mark for correct check digit and 1 mark for showing the calculation

$$(4 \times 1) + (2 \times 2) + (4 \times 3) + (1 \times 4) + (5 \times 5) + (0 \times 6) + (8 \times 7)$$

$$= 4 + 4 + 12 + 4 + 25 + 0 + 56 = 105$$

$$105/11 = 9 \text{ remainder } 6$$

check digit is: 6 [2]

- (ii) **1 mark**
- No/incorrect check digit

2 marks

- Total is 78
- $78/11 \dots$
- $\dots$ gives 7 remainder 1
- check digit should be 1 [3]



(b) (i) 1 mark for each correct parity bit

parity bit

0	1	1	0	0	1	1	0
---	---	---	---	---	---	---	---

parity bit

1	0	0	0	0	0	0	1
---	---	---	---	---	---	---	---

[2]

(ii) Any **one** from:

- an even number of digits are changed
- a transposition error(s) has occurred

[1]

8 1 mark for each step in correct order. (NOTE: Marks can be awarded for a correct sequence.)

Steps in the printing process	Step order
As the printing drum rotates, a laser scans across it; this removes the positive charge in certain areas	4
The printing drum is coated in positively-charged toner; this then sticks to the negatively-charged parts of the printing drum	6
The paper goes through a fuser which melts the toner so it fixes permanently to the paper	9
The printer driver ensures that the data is in a format that the laser printer can understand	(1)
A negatively-charged sheet of paper is then rolled over the printing drum	7
Data is then sent to the laser printer and stored temporarily in the printer buffer	2
The toner on the printing drum is now transferred to the paper to reproduce the required text and images	8
The printing drum is given a positive charge	3
Negatively-charged areas are then produced on the printing drum; these match exactly with the text and images to be printed	5

[8]

Question	Answer	Marks															
6(a)	1 mark for the correct ticks (✓) for each statement <table> <tr> <th>Statement</th><th>3D printer (✓)</th><th>3D cutter (✓)</th></tr> <tr> <td>Outputs a physical 3D product</td><td>✓</td><td>✓</td></tr> <tr> <td>Uses a high powered laser to create the output</td><td></td><td>✓</td></tr> <tr> <td>Creates 3D prototypes</td><td>✓</td><td>✓</td></tr> <tr> <td>Uses layers of material to create the output</td><td>✓</td><td></td></tr> </table>	Statement	3D printer (✓)	3D cutter (✓)	Outputs a physical 3D product	✓	✓	Uses a high powered laser to create the output		✓	Creates 3D prototypes	✓	✓	Uses layers of material to create the output	✓		4
Statement	3D printer (✓)	3D cutter (✓)															
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Uses a high powered laser to create the output		✓															
Creates 3D prototypes	✓	✓															
Uses layers of material to create the output	✓																
6(b)	Computer Aided Design/CAD	1															
6(c)	Three from: • Uses a large number of tiny mirrors • Mirrors are laid out in a grid/matrix • Each mirror creates a pixel in the image • Mirrors can tilt toward or away from light source • The mirrors reflect light toward a (projection) lens • Colour is produced using a colour wheel // Light passes through colour wheel // filters light into red/green/blue • Can be used to display an image on a wall/screen	3															

Question	Answer	Marks
7(a)	1 mark for each correct answer: • uses several/multiple wires • transmits multiple bits at a time	2
7(b)	Benefit 1 mark for: • quicker/faster data transfer Drawback One from: • More chance of data being skewed due to bits being sent simultaneously/out of order // less safe transmission as bits are sent simultaneously/out of order • More expensive as requires more/several/multiple wires • More chance of interference as more/several/multiple wires are used (than can create crosstalk)	2
7(c)	One from: • Used in integrated circuits • Used in RAM • Used in connections to peripheral devices (e.g. printer)	1

Question	Answer	Marks
8	1 mark for each correct answer, in the given order: • browser • webpages • Internet Service Provider (ISP) • Internet • protocol • IP address	6

Question	Answer	Marks
6(a)(i)	One from: • Code will run without the need of an interpreter • (Object) Code is platform independent • Source code not available / cannot be modified	1
6(a)(ii)	One from: • Source code not available / cannot be modified • Comments, etc. not visible • Future changes will require code to be recompiled	1
6(b)(i)	One from: • Protocol is HTTPS • Padlock icon is locked • Can view website certificate	1
6(b)(ii)	Five from: • Browser / client sends request to webserver to request identification • Web server sends its digital / security certificate • Browser authenticates certificate ... • ... if authentic connection, is established • Any data sent is encrypted ... • ... using public and private keys	5
6(c)	Four from: • A type of software licence • Free of charge • Normally distributed without the source code • Can legally share / copy • Cannot legally modify code • Cannot resell	4

Question	Answer	Marks
6(d)(i)	Two from: • File size is reduced ... • ... so it uses less storage space • ... so faster transmission • ... so quicker to download	2
6(d)(ii)	• Lossless	1

Question	Answer	Marks															
7(a)	<table border="1"> <thead> <tr> <th>Input A</th><th>Input B</th><th>Output</th></tr> </thead> <tbody> <tr> <td>0</td><td>0</td><td>0</td></tr> <tr> <td>0</td><td>1</td><td>1</td></tr> <tr> <td>1</td><td>0</td><td>1</td></tr> <tr> <td>1</td><td>1</td><td>1</td></tr> </tbody> </table>	Input A	Input B	Output	0	0	0	0	1	1	1	0	1	1	1	1	1
Input A	Input B	Output															
0	0	0															
0	1	1															
1	0	1															
1	1	1															
7(b)	Exclusive OR / XOR / EOR	1															
7(c)	One mark for each correct logic gate with correct inputs	5															
7(d)	Two from: - Can work continuously - Avoids human error - It could be a dangerous environment and will avoid human risk - Detect errors instantly - Maintain consistent and correct conditions	2															

Question	Answer	Marks
7(a)	Four from: • Membrane / matrix / circuit board present at base of keys • A key is pressed that presses a switch • When a key is pressed it completes a circuit // changes the current in a circuit • The location of the keypress is calculated • An index of characters is searched to find the corresponding keypress • Each character has an ASCII / Unicode value • The ASCII / Unicode value has a binary value • Keypress generates an interrupt • Each character / keypress is added to a buffer to wait to be processed • The binary can then be processed by the CPU to action the key press	4
7(b)	Three from: • Display a web page • Sends a request to the web server • Receives data from web server • Translates HTML files • Processes client-side script, e.g. JavaScript • Store favourites • Store history • Navigation forward and backward • Check security • Store / access cookies • Find specific text within a web page • Downloading file from the web • Allows a homepage • Allows multiple tabs / web pages to be opened • Stores data in its cache	3

Question	Answer	Marks
7(c)	Three from: • Hypertext Transfer Protocol Secure // It is a protocol ... • ... that is a set of rules/standards • Secure version of <u>HTTP</u> • Secure website // secures data • Uses TLS / SSL • Uses encryption	3

Question	Answer	Marks
8(a)	• $X = 1$ if (A is 1 XOR C is 1) OR (B is 1 NAND C is NOT 1) • $X = (A \text{ XOR } C) \text{ OR } (B \text{ NAND NOTC})$ One mark for each bullet: • (A XOR C) • OR • (B NAND NOTC)	3

Question	Answer	Marks
7(a)(i)	Three from: • RAM • Primary memory • Volatile memory • Holds currently in use data/instructions • Directly accessed by the CPU	3
7(a)(ii)	Two from: • Arithmetic and logic unit (ALU) • Memory address register (MAR) • Memory data register (MDR) // Memory buffer register (MBR) • Accumulator (ACC) • Immediate Access Store (IAS) • Control Unit (CU) • Program counter (PC) • Current instruction register (CIR) • Address bus • Data bus • Control bus • Input device • Output device • Secondary storage device	2

Question	Answer	Marks																		
7(b)	One mark for each correct row <table> <tr> <th>Statement</th><th>True (✓)</th><th>False (✓)</th></tr> <tr> <td>Interrupts can be hardware based or software based</td><td>✓</td><td></td></tr> <tr> <td>Interrupts are handled by the operating system</td><td>✓</td><td></td></tr> <tr> <td>Interrupts allow a computer to multitask</td><td>✓</td><td></td></tr> <tr> <td>Interrupts work out which program to give priority to</td><td></td><td>✓</td></tr> <tr> <td>Interrupts are vital to a computer and it cannot function without them</td><td>✓</td><td></td></tr> </table>	Statement	True (✓)	False (✓)	Interrupts can be hardware based or software based	✓		Interrupts are handled by the operating system	✓		Interrupts allow a computer to multitask	✓		Interrupts work out which program to give priority to		✓	Interrupts are vital to a computer and it cannot function without them	✓		5
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Interrupts are vital to a computer and it cannot function without them	✓																			

Question	Answer	Marks
8	Four from: • A hacker could have hacked the network ... • ... and downloaded the malware onto the network • Clicking a link/attachment/downloaded a file from an email/on a webpage ... • ... the malware could have been embedded into the link/attachment/file • Opening an infected software package ... • ... this would trigger the malware to download onto the network • Inserting an infected portable storage device ... • ... when the drive is accessed the malware is downloaded to the network • Firewall has been turned off ... • ... so malware would not be detected/checked for when entering network • Anti-malware has been turned off ... • ... so malware is not detected/checked for when files are downloaded	4