# Mark Scheme (Results)

## Summer 2022

Pearson Edexcel International Advanced Subsidiary
In Information Technology (WIT11/ 01)
Unit 1

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**General Marking Guidance**

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **1 (a)** | Award **one** mark each to a maximum of 2 marks for:<br><br>• Specified online task e.g. browsing the internet, shopping, banking (1)<br>• Reading e-books (1)<br>• Playing games (1)<br>• Playing music (1)<br>• Running a desktop application e.g. word processor, pdf viewer, spreadsheet, language translation, email (1)<br>• Route planning (1)<br>• Image manipulation (1)<br>• Printing (1) | Accept any reasonable smartphone task that is not about making phone calls or texting<br>Allow an MP to be used twice<br><br>Ignore networking or videocalls, they were available pre smartphone | **2** |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| 1 (b)i | **The only correct answer is C**<br><br>A is not correct because video drivers are software, loaded after startup<br><br>B is not correct because the operating system is called by the bootloader and may be held on a drive<br><br>D is not correct because the processor is hardware | | **1** |
| 1 (b)ii | Award **one** mark for any of<br><br>• flash memory (1)<br>• flash ROM (1)<br>• EEPROM (1)<br>• EPROM (1)<br>• ROM (1)<br>• non-volatile memory (1) | | **1** |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| 1 (c) i | **The only correct answer is A**<br><br>*B is not correct because there are not in the correct order*<br><br>*C is not correct because there are not in the correct order*<br><br>*D is not correct because there are not in the correct order* | | **1** |
| 1 (c) ii | Award **one** mark for any of:<br><br>• a set of rules that allow the parts/layers/system/stack to work together (1)<br>• a set of rules or procedures for transmitting data between computers/over a network (1)<br>• a set of rules governing how two or more devices transmit data (1) | | **1** |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| 1 (d) | Award up to a maximum of **two** marks for a linked explanation:<br><br>• packet check/recovery involves packets being lost/discarded and resent (1)<br>• this would cause stuttering/garbling/delays in the call (1)<br>• a voice conversation relies on hearing the packets in the correct order/in sequence/in real time (1)<br>• TCP/IP likely to cause lag/delays in the transmission (1)<br><br>Example:<br>• TCP/IP doesn't allow users to enjoy a real time uninterrupted call (1) because packets are resent if corrupted (1) | | **2** |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **1 (e) i** | Award up to a maximum of **two** marks for a linked explanation, such as:<br><br>• a mobile device is likely to connect to other networks as well (1) if it had a static IP address this might clash/cause connection problems/other networks will want to allocate a dynamic address (1)<br>• if the device had a static address the hotspot server/DHCP/admin (1) may have already used that address for another device (1)<br>• no need to manually enter any settings to connect the device to the hotspot (1) therefore less technical knowledge/admin access required (1)<br>• a static IP address does not travel with you (1) so you would be unable to connect to the hotspot without a dynamic address (1)<br>• using dynamic addresses allows the hotspot to assign a temporary address to the device (1) once the device disconnects the address becomes available again (1) | | **2** |
| **1 (e) ii** | Award up to a maximum of **two** marks for a linked explanation:<br><br>• MAC address is unique to the device/NIC (1)<br>• hotspot/DHCP/server uses MAC address to identify each device (1)<br>• helps with reconnection after temporary interruption (1)<br>• without the MAC address the hotspot/DHCP/server might see/confuse two devices with the same name/IP address (1)<br>• the hotspot may be set up to allow only devices with specified MAC addresses to connect/allows hotspot admin to create block/allow lists (1) | | **2** |

**Total for Question 1 = 12 marks**

<table>
<tr><th>Question number</th><th>Answer</th><th>Additional guidance</th><th>Mark</th></tr>
<tr><td>2 (a)</td><td>Award one mark for each correct answer to a maximum of 6 marks:<br><br><table><tr><th>Label</th><th>Data</th></tr><tr><td>A</td><td>Order</td></tr><tr><td>B</td><td>Order</td></tr><tr><td>C</td><td>Stock used</td></tr><tr><td>D</td><td>Stock and order reports</td></tr><tr><td>E</td><td>Daily orders</td></tr><tr><td>F</td><td>Stock required</td></tr><tr><td>G</td><td>Purchase order</td></tr></table></td><td>Accept meaningful alternatives</td><td>6</td></tr>
</table>

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **2 (b)** | Award up to a maximum of **two** marks for a linked explanation such as:<br><br>• records are digital (1) so it is easier/more efficient to search/analyse/process/generate reports (1)<br>• orders only need entering once (1) other records/reports can be generated from them (1)<br>• less chance of mistakes (1) as records do not have to be transcribed when generating reports (1)<br>• easier to back up the records (1) as paper-based ones would have to be scanned/manually copied (1)<br>• enables the manager to reduce waste and costs (1) because it provides up-to-date information about current stock levels (1)<br>• it provides up-to-date information about current stock levels (1) enabling her to fine tune ordering of new stock/launch special promotions featuring items that need to be shifted (1)<br>• increased customer satisfaction/better customer service (1) as less chance of order being lost/mislaid (1)<br>• company requires fewer admin staff (1) because customers fill in their own orders on the website (1)<br>• less chance of pads/orders being lost (1) so stock data will be more accurate (1) | Allow mix and match as long as it makes sense overall | **2** |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **2 (c)i** | Award up to a maximum of **two** marks for a linked explanation such as:<br><br>• uses less paper/order pads (1) so reduces landfill / less waste/ saves trees (1)<br>• reducing printing/distribution of pads (1) so reduces CO2 emissions/reduces global warming (1)<br>• better stock control means that there's less wastage (1) since fewer flowers are wasted/less transport required/less water used (1) | | **2** |
| **2 (c) ii** | Award up to a maximum of **two** marks for a linked explanation such as:<br><br>• IT system uses (more) electricity (1) electricity generation has an environmental cost (1) eg greenhouse gases, CO2, land use for power generation, mining<br>• IT system uses (more) devices/electronics/computing equipment (1) devices have an environmental impact during manufacture/disposal (1) eg radioactivity, heavy metals, landfill, toxic materials | | **2** |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **2 (d) i** | **The only correct answer is B**, because USB C has a bandwidth of up to 20Gbps<br><br>A is not correct because Bluetooth has a bandwidth of around 1Mbps<br>C is not correct because Ethernet has a bandwidth of up to 10Gbps<br>D is not correct because Micro USB has a bandwidth of up to 5Gbps | | **1** |
| **2 (d) ii** | Award up to **two** marks for a linked explanation such as:<br>• The tablet has **GPS** (enabled) (1) so it can match its location to the known location of the premises (1)<br>• The tablet has **Wi-Fi** (enabled) (1) so when it sees the company's Wi-Fi signal/SSID it 'knows' where it is (1) | | **2** |

**Total for Question 2 = 15 marks**

| Question number | Indicative content. | Mark |
|---|---|---|
| **3 (a)** | Structured data:<br>• quantitative<br>• fits in fixed fields<br>• easy to organise<br>• can manipulated/understood/searched by machine language/SQL<br><br>Structured data examples:<br>• plant<br>◦ names<br>◦ typical size<br>◦ country of origin<br>◦ preferred soil type<br>• customer<br>◦ credit card number<br>◦ account number<br>◦ address details<br>◦ telephone number<br><br>Unstructured data:<br>• qualitative<br>• does not fit easily into fixed fields<br>• needs language processing/text mining techniques<br>• usually takes more storage space than structured data<br><br>Unstructured data examples:<br>• plant<br>◦ photo/video of plant e.g. showing it flowering<br>◦ notes on e.g. plant health<br>• customer<br>◦ email<br>◦ record of telephone enquiries/other communications<br>◦ photo of plant e.g. showing a disease | **6** |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No rewardable material. |
| Level 1 | 1–2 | • Demonstrates limited knowledge and understanding, some of which may be inaccurate.<br>• Applies understanding with limited coherence to produce a response that lacks development. |
| Level 2 | 3–4 | • Demonstrates knowledge and understanding, which is mostly relevant and may include some inaccuracies.<br>• Applies understanding to make some coherent connections and a partially developed response. |
| Level 3 | 5–6 | • Demonstrates accurate and relevant knowledge and understanding throughout.<br>• Applies understanding coherently to produce a fully developed response. |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **3 (b) i** | Award **one** mark for:<br>• Supplier ID (1)<br>• Product ID (1) | | **1** |
| **3 (b) ii** | Award **one** mark for:<br>• Supplier ID (1) | | **1** |
| **3 (b) iii** | Award one mark for:<br>• Float (1)<br>• Double (1)<br>• Decimal/Dec (1)<br>• Real (1) | Not integer or numeric | **1** |
| **3 (b) iv** | Award **one** mark for:<br>• Text (1)<br>• String (1)<br>• Varchar (1) | | **1** |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **3 (c)** | Award **one** mark for each correct part of the query up to a maximum of **six** marks.<br><br>1. select required fields from the correct tables (1)<br>2. only the required fields selected (1)<br>3. officialName = Mimosa / officialName LIKE Mimosa (1)<br>4. use of wildcard appropriately (Mimosa%) (1)<br>5. use of AND for a multiple condition (1)<br>6. join correct (1)<br>7. ORDER BY supplierName (1)<br>e.g.<br>SELECT officialName, supplierName, telephone<br>FROM tbl_supplier, tbl_plant<br>WHERE officialName = 'Mimosa%'<br>AND flowerColour = 'White'<br>AND height >= 2<br>AND tbl_supplier.supplierID = tbl_plant.supplierID<br>ORDER BY supplierName<br><br>e.g.<br>SELECT tbl_plant.officialName, tbl_supplier.supplierName, tbl_supplier.telephone<br>FROM tbl_plant, tbl_supplier<br>INNER JOIN tbl_supplier ON tbl_plant.supplierID = tbl_supplier.supplierID<br>WHERE officialName = 'Mimosa%'<br>AND flowerColour = 'White'<br>AND height >= 2<br>(AND tbl_supplier.supplierID = tbl_plant.supplierID)<br>ORDER BY supplierName | Award marks with errors in syntax as long as the intent is clear. | **6** |

**Total for Question 3 = 16 marks**

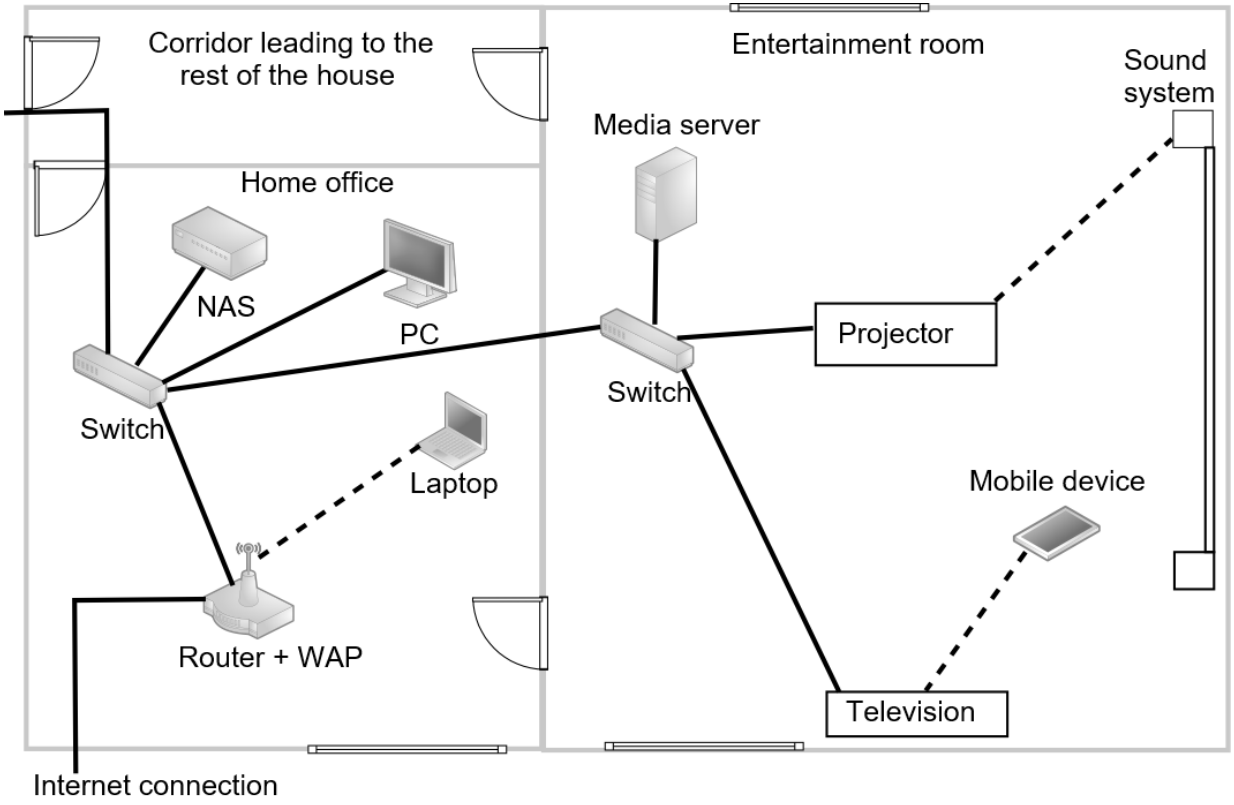
| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **4(a)** | Award up to **two** marks for a linked explanation such as:<br><br>• The domain name is easier to remember/more human readable (1) because it uses alphanumeric words rather than just numbers (1)<br>• The website is hosted with an IP address (1) the domain name can be used to look up that address (1)<br>• People might not be able to find the site without a domain name (1) because IP addresses don't show up in search engines (1)<br>• Search engines look for keywords (1) domain names contain those words (1) | Allow mix and match as long as it makes sense overall | **2** |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **4(b)** | Award up to **two** marks for a linked description such as:<br><br>• Static written in HTML (1), dynamic written in a server-side scripting language/PHP/ASP/JSP (1)<br>• Static code/HTML is read/displayed by the browser/client computer (1), dynamic is a server-side process (1)<br>• Static pages are hard-coded (1) dynamic page can get content/new features from a database/data feed (1)<br>• Static pages always display the same content/are written in HTML (1) dynamic pages can display different content based on user interaction/scripting/a (backend) database/programming (1) | Allow mix and match as long as it makes sense overall | **2** |

| Question number | Indicative content. | Additional Guidance | Mark |
|---|---|---|---|
| **4(c)** | Answers should be in the context of improving a digital footprint to get more online sales.<br><br>Search engines:<br>• use search engines to see what is already on the internet<br>• note any positive mentions and any negative mentions<br>• address both positive and negative<br><br>Social media:<br>• be proactive<br>• be positive, helpful, supportive etc.<br>• avoid making negative posts<br>• consider creating new, unencumbered accounts for the business instead of using personal ones<br><br>Correct negative mentions where possible:<br>• don't engage in protracted posting with false information/news, that would raise the information's visibility<br>• always be truthful<br>• be willing post corrections/apologies<br><br>Raise awareness:<br>• post interesting, not spammy, information on suitable sites<br>• engage with professional/craft related/candle related forums or groups | | 6 |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No rewardable material. |
| Level 1 | 1–2 | • Demonstrates limited knowledge and understanding, some of which may be inaccurate.<br>• Applies understanding with limited coherence to produce a superficial and unbalanced discussion. |
| Level 2 | 3–4 | • Demonstrates knowledge and understanding which is mostly relevant but may include some inaccuracies.<br>• Applies understanding to make some coherent connections, leading to a discussion that shows some development, but may be unbalanced. |
| Level 3 | 5–6 | • Demonstrates accurate and relevant knowledge and understanding throughout.<br>• Applies understanding coherently to produce a balanced and fully developed discussion. |

**Total for Question 4 = 10 marks**

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **5(a)** | Award **one** mark for each up to a maximum of 10 marks:<br>1. Internet connection (1)<br>2. Router on internet connection (1)<br>3. Cable to rest of house (1)<br>4. NAS and PC in office with cable (1)<br>5. Laptop with wireless connection to any part of the network (1)<br>6. Switch with at least three connected items (1)<br>7. Switch/switches used correctly (1)<br>8. WAP with cable or is part of router or switch (1)<br>9. Media server, projector, TV, in entertainment room with cable (1)<br>10. Mobile device or laptop wireless link to TV (1)<br>11. Projector wireless link to sound system (1)<br>  <br> | Mark labels only.<br>Accept any symbol.<br>Devices may be placed anywhere within their correct rooms. | **10** |

| Question number | Answer | Additional guidance | Mark |
|---|---|---|---|
| **5(b) i** | Award **one** mark for an X between the internet and the first network component on the network diagram | Accept a label or other obvious indication of the firewall | **1** |
| **5(b) ii** | Award up to **two** marks for a linked explanation such as:<br>• hardware firewalls have single point of administration (1) whereas software firewalls must be installed/maintained on each device that needs protection (1)<br>• hardware firewalls protect the whole network/devices that cannot run their own firewall (1) whereas software firewalls only protect the device that they are running on (1) | | **2** |
| **Question number** | **Answer** | **Additional guidance** | **Mark** |
| **5(c)** | Award up to **two** marks for :<br>• Video files larger than audio (1)<br>• Ethernet more bandwidth than Bluetooth (1)<br><br>eg.<br><br>• Bluetooth has enough bandwidth for the audio but not the video (1) whereas Ethernet has enough bandwidth for both (1)<br>• The video file contains both the audio and video data (1) so needs the greater bandwidth available using Ethernet (1) | Allow other indications of bandwidth. e.g. more bps, higher capacity | **2** |

**Total for Question 5 = 15 marks**

| Question number | Indicative content | Additional guidance | Mark |
|---|---|---|---|
| **6** | Digital devices:<br>• own devices<br>  • harder to support, IT technicians are unlikely to be familiar with all possible devices<br>  • some devices<br>  ▪ will be in warranty and would need manufacturer/dealer support<br>  ▪ may be unrepairable/have unusual OSs/unusual configurations<br>  ▪ may be unable to run required software<br>  ▪ may not have needed connectivity e.g. WiFi/Ethernet may be absent<br>  • may bring in malware, hacking tools, forbidden/unlicensed/inappropriate material/software<br>  • concerns about privacy and ownership of device contents/ non college related/personal material on the device<br>  • concerns about software licenses when college software put on private devices, could get round this with open source.<br>• College devices<br>  • high initial cost of outlay<br>  • ongoing maintenance costs probably less than for own devices<br>  • IT technicians will be familiar with the devices/can be trained to maintain devices<br>  • disc images can be used to load/reset devices<br>  • devices will have be selected to have the required connectivity and be capable of running the required software<br>  • better control over licensing of software<br>  • easier to apply patches/upgrades<br>  • simpler to apply standard security settings/prevent malware/misuse/inappropriate material<br>Recommendation.<br>No correct answer but it should be supported by arguments about the devices.<br>Realistically, the college should probably supply devices as allowing own devices for college work could result in damaging legal exposure. Piracy/licensing/in loco parentis/devices being damaged by | | |

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|---|---|---|---|
| | technicians.<br><br>Software:<br>• web based:<br>  • less technical support needed as online supplier/vendor will upgrade/patch<br>  • no software installation needed, but may need an app/link configuring<br>  • needs internet connection in order to use the software<br>  • college does not own the software, vendor may change licensing terms or other aspects unilaterally. College would have to agree or stop using the software.<br>  • privacy/security concerns of work being done/data being processed or stored online<br>  • limited choice of educational software in some areas of the curriculum<br><br>• locally installed:<br>  • more technical support needed as IT technicians will have to handle patches/upgrades<br>  • software will need installing on each device. Difficult if using student's own devices, part of a disc image if college supplies devices<br>  • no internet needed<br>  • college may buy, rent, or use open source. More choices available<br>  • greater range of software available<br>  • all work/data kept inside the LAN so easier for security/privacy control<br><br>Recommendation.<br>No correct answer, but it should be supported by arguments about the two choices.<br>The recommendation is likely to be influenced by how a candidate has used/experienced software in their own establishment, e.g. cost of internet, stability of connection, quality of tech support may be the deciding factor. | | |

| Level | Mark | | Descriptor |
|---|---|---|---|
| | 0 | | No rewardable material. |
| Level 1 | 1–4 | | • Demonstrates limited knowledge and understanding, some of which may be inaccurate.<br>• Applies understanding with limited coherence to produce a response that lacks development.<br>• Demonstrates limited awareness of competing arguments. Conclusion, if present, is generic or unsupported. |
| Level 2 | 5–8 | | • Demonstrates knowledge and understanding, which is mostly relevant and may include some inaccuracies.<br>• Applies understanding to make some coherent connections and a partially developed response.<br>• Demonstrates some awareness of competing arguments, but this may be unbalanced, and partially supports conclusion with evidence. |
| Level 3 | 9–12 | | • Demonstrates accurate and relevant knowledge and understanding throughout.<br>• Applies understanding coherently to produce a fully developed response.<br>• Demonstrates an awareness of competing arguments and supports conclusion with evidence. |

**Total for question 6 =12 marks**

**Total for paper = 80 marks**

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