Question 1

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Question 2

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<td>LEN</td>
<td>Beta</td>
<td>GPS</td>
<td>ISP</td>
<td>Denial of Service</td>
<td>iOS</td>
<td>Extension</td>
<td>Patch</td>
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[10]

Question 3

[Accept correct answers even if ‘False’ is not stated]

3.1 False – shaped ✓ (1)
3.2 False – Click-jacking ✓ (1)
3.3 True ✓ (1)
3.4 True ✓ (1)
3.5 False – Ransomware ✓ (1)

[5]

General guideline

For some questions there may well be other answers that are correct, but that are not necessarily listed in the memo. Please check / google, and use own discretion.

Question 4: Systems Technologies

4.1.1 Size of the screen ✓ (1)
4.1.2 GHz ✓ (1)
4.1.3 RAM / memory ✓ (1)
4.1.4 Add a separate / dedicated video card ✓ (1)

[Accept specific names that imply a separate card, e.g. GeForce, Nvidia, AMD, Radeon]

4.2 Convergence is the merging of multiple technologies / functions ✓
into a single / multi-purpose device ✓
An MP3 player performs only one function (plays MP3 files) ✓ Example: smartphone ✓ (4)
4.3 Any TWO troubleshooting steps of:
- Disconnect and reconnect the mouse
- Try a different (USB) port
- Re-install drivers
- Try mouse on a different computer
- Reboot the PC (2)

4.4.1 QR code (1)

4.4.2 Smartphone / tablet / webcam, (digital) camera (1)

4.5 It saves space/uses only one USB port (1)

4.6 Any TWO drawbacks of:
- You cannot use the software if you do not have an internet connection
- Performance of the software affected by the speed / quality of the internet connection
- Web apps may perform more slowly (because data must be sent via the internet)
- The software may not have all the features and capabilities of the desktop versions of the software (2)

4.7 Do I need to be mobile (carry the computer around with me)? (1)

4.8 Very difficult or impossible to upgrade a laptop (to meet the higher system requirements that may be needed for future software installations) (1)

4.9.1 Operating system (1)

4.9.2 Driver (1)

4.10 Smaller in physical size; no moving parts therefore more robust (2)

4.11 Any ONE way of:
- Always shut the computer down properly
- Use a UPS (to protect the computer against power outages/problems)
- Do not run beta (or known ‘problematic’) software (to prevent unexpected program ‘crashes’)
- Safely remove external storage (1)

4.12 Ink cartridges (1)

4.13 Any TWO technical reasons of:
- Resolution of images produced by projectors are not as good as those of high quality monitors
- Data projectors normally have a 4:3 aspect ratio (not suited to the 16:9 or 16:10 aspect ratio of most movies)
- Data projectors have lower contrast ratios (muddier images and lower colour quality)
- Images produced by data projectors are not as bright (2)
Question 5: Network and Internet Technologies and Implications

5.1 Any TWO technical advantages (besides speed / cost) of: ✔✔
- Fibre generally provides a more stable / reliable connection
- Distance from the telephone exchange (weakening of the signal) is less of a problem
- Not affected by electrical interference
  (2)

5.2 Any TWO connection technologies (besides cable) of: ✔✔
- Cellular (3G/4G/LTE)
- WiFi
- Satellite
  (2)

5.3.1 VoIP ✔
(1)

5.3.2 Any TWO solutions of: ✔✔
- Get a faster (higher bandwidth) connection / switch to fibre/4G
- Connect when less internet traffic
- Make sure VoIP software/Skype is updated to the latest version
- Don’t overload your internet with other tasks (while video conferencing)
  (2)

5.3.3 It would be cheaper (in the long run), ✔
as video conferencing can use up a lot of data (especially when using video) ✔
  (2)

5.4 Any TWO advantages (besides hardware specs, and no need to install software) of: ✔✔
- Software is always up to date
- Can use the software and access the data from any device in the world (where there is an internet connection)
- Documents automatically backed up by the system
- Data files can by ‘synched’ to all devices connected to the service (so one always has the most up-to-date version of a file on any device one may be using)
  (2)

5.5 TWO disadvantages (irrespective of the number of recipients):
- Email is not suitable for sending large files (most email systems place a maximum limit on the size of the attachment you can send) ✔
- Some email systems block certain potentially dangerous file extensions (e.g. .exe and .zip) ✔
  (2)

5.6.1 The criminal does not need physical access to the premises (although he/she needs to be fairly close, ‘on the other side of the wall’) ✔
[ Accept: need no physical equipment or cables (besides a computing device) / can easily detect and connect to a wireless network ]
  (1)

5.6.2 Set a (strong) password / change the default password / change password regularly ✔
[ Accept: strengthen WiFi encryption / turn off Remote Router management / keep router firmware up to date / use firewall settings, etc. ]
  (1)

[15]
Question 6: Information Management and Integrated Skills

6.1 Any ONE feature of: ✅
Filtering / sorting / conditional formatting / creating a chart / pivot tables / grouping / subtotals, etc. (1)

6.2 TWO ways:
- Type it in manually (e.g. spreadsheet or database table) ✅
- Scan it in (e.g. images, OCR software) ✅ (2)

6.3 To obtain information that cannot be obtained from online sources (such as people’s attitudes, habits, preferences) ✅ (1)

6.4.1 Accept any suitable response: ✅
- The respondent may not connect to the internet at all
- May connect using another means (e.g. ADSL, WiFi)
- May use both of the given options, etc. (2)

6.4.2 Any ONE example of information of: ✅
- How many teachers use fibre optic cable
- How many teachers use 3G/4G
- How many parents use fibre optic cable
- How many parents use 3G/4G
- How many more parents use fibre optic cable than 3G/4G, etc.

[ BOTH criteria must be present: type of respondent, and internet connection method ] (1)

6.4.3 Break up the responses into suitable categories or groupings / decide on suitable groupings / first analyse the answers to establish more common or ‘repeated’ types of answers ✅

[ The idea of establishing groupings / categories / common types of answers must be present. Accept specific examples, e.g. ‘First categorise the responses into, say, Business, Entertainment, Communication’ ] (1)

6.5 Any ONE reason of: ✅
- To credit (acknowledge) a source of information (and so avoid a charge of plagiarism)
- To enable the reader to access the source him/herself (to verify details, do further research, etc.) (1)

6.7 Any ONE example of information of: ✅
Author’s name / company’s name / date / summary of what the report is about, etc. (1)
Question 7: Social Implications

7.1 Any ONE example of: ✓
- Selection list (drop-down list / Combo box / List box)
- Check box

7.2 This software allows you to speak (in a natural voice) to your computer/device, ✓ and have it ‘understand’ and respond to what you are saying (based on the context) ✓
It would be particularly suited to a user who suffers from (Accept any ONE): ✓
- poor motor control (finds it difficult to use hand-controlled input devices such as keyboard and mouse)
- visual impairment (is blind, or cannot see properly)

[ Accept any specific example of what the person would use the software for, e.g. to look something up, or to control smart devices such as lights, music player or aircon – without having to use an input device such as a keyboard or mouse ]

7.3.1 Any ONE way of: ✓
- Immediate feedback/assessment
- Element of ‘competition’ (competing against yourself and others)
- Can work at your own pace (pressure of keeping to a fixed schedule is removed)
- Can collaborate / share knowledge with others online
- Access to interesting multimedia content and interaction with it
- Can repeat instructions/assessment multiple times, etc.

[ Do not accept vague answers that do not describe the positive features of e-learning software, e.g. ‘better than some teachers’, ‘don’t have to listen to boring teachers’ ]

7.3.2 Saves paper (and related resources) ✓

7.4 Identity theft ✓

7.5 Any TWO (besides using updated anti-malware software and not clicking on links in popups) of: ✓ ✓
- Don’t click on links in phishing emails (or in other types of email scams)
- Don’t open attachments unless you are sure of what they are
- Don’t run programs unless you are sure of what they are
- Ensure that e-banking and e-commerce sites that you use are encrypted for security (URL starts with https://, and icon of closed padlock)
- Avoid pirated / duplicated / counterfeit software
- Stay informed – read tips supplied on banking websites, etc.

7.6 Passwords, irrespective of their ‘strength’, can easily be shared (biometric features cannot be shared) ✓
Question 8: Solution Development

8.1 Potential risk of accepting one or more changes that you would not have agreed with (if you had reviewed each proposed change individually, and accepted or rejected each one separately) ✓

8.2 Max should be min ✓ and the .2 should be at end after ✓ the cell range. =min(E5:E45,2) ✓

8.3 Blind/partially sighted users ✓

8.4 99,58 ✓

8.5 NOW ✓

8.6 It enables calculations to be performed on the date/time values ✓

8.7 OLE Object / Attachment ✓

8.8 To do queries and create reports ✓

8.9 Accept any validation text that requires that the order date be today or earlier ✓

8.10 Page Header ✓

8.11 Will give all surnames starting with A. ✓ Allen, Allright, Allenby ✓

8.12 The text will show if the image does not appear/a screen reader will read the alt text to a blind person. ✓

[15]

Question 9: Integrated Scenario

9.1 Advantage: Cheapest to buy (in their range) ✓

Any ONE disadvantage of: ✓

• (Fairly) low hardware specs (and therefore ‘slower’ / ‘less powerful’)
• Pre-installed software (e.g. office suite, OS) may come with fewer features

9.2.1 The screen cannot accept input (is not a touch screen) ✓

9.2.2 Any ONE reason of: ✓

• A screen lock pattern can quite easily be guessed
• Easy to watch and see the pattern (easier than detecting key-presses on a keyboard)
• Can detect smudged record of lock pattern on the screen

9.2.3 Physically secure the computer / prevent physical access; usernames and passwords

9.3.1 Pair the tablet with a (Bluetooth) keyboard ✓

[ Accept: connect a keyboard to the tablet (using a USB cable) ]

9.3.2 Immediate feedback; work at your own pace etc ✓✓

9.3.3 Voice/speech recognition software ✓

9.3.4 Acceptable Use Policy document – outlining rights and responsibilities of network users ✓

[ Accept practical examples of what the document might contain: netiquette rules, usage restrictions, ethical practices, etc. ]
9.4 Any TWO advantages of: ✅
- Can scan items ‘in bulk’ (not one at a time, which takes longer)
- Less labour-intensive – does not need a human ‘operator’ to perform the scanning (scanning takes place automatically)
- Does not need line-of-sight contact with the scanning device
- Greater range of operation (metres rather than centimetres)
- Can help to prevent theft (by setting off an alarm)

9.5 Headphones / earphones ✅

9.6.1 Any TWO ways (besides using less paper) of: ✅
- Recycling the cartridges
- Use a lower resolution to print (reduces ink / toner)
- Switch printer off when not in use

9.6.2 (a) Paper size ✅

9.6.2 (b) To protect the printer against power problems (‘surges’) ✅

9.6.2 (c) ppm / pages per minute ✅

9.7.1 Accept any answer referring to the fact that SSD transmits data very quickly and the fact that video files are usually large. ✅

9.7.2 Use a USB HUB to get extra USB ports

9.8.1 Accept any response that explains that using ergonomically designed equipment can reduce the risk of RSI / CTS / any ‘negative’ effects to one’s personal health ✅

9.8.2 Any ONE feature of: ✅
- Keys positioned so that the hands are held in a more natural position (‘curved’ keyboard)
- Soft-touch keys
- Wrist/palm rests

9.8.3 Braille keyboard ✅

9.9.1 The program is designed to work with (and will only work with) a specific OS (or ‘family’ of OSs) ✅

9.9.2 Add more memory / RAM ✅
[ Accept: install a faster CPU/SSD ]

9.9.3 Any ONE component (besides RAM/memory and disk space) of: ✅
- Processor (CPU)
- Display card / graphics card / video card
9.10.1 Compatibility problems – older versions of software usually cannot open/use files created in a newer version ✓ (1)

9.10.2 Use the Save As option (to save files in a previous/older format) ✓ (1)

9.11 Users can open and read the document even if they don’t have the original program (used to create the document) installed on their computer or device ✓ (1)

9.12.1 Task Manager is used to close non-responding tasks/software (where other applications continue to run normally); in this case, the computer reboots itself ✓ (1)

9.12.2 Any ONE way of: ✓

- Check online forums
- Uninstall and re-install the program
- Contact the software company with a request for help
- Uninstall (other) programs that may recently have been installed (1)

9.13.1 WiFi (adapter) ✓ (1)

9.13.2 Any ONE reason of: ✓

- Cheaper/faster data transmission (1)

9.14.1 Any ONE example of: ✓

- WhatsApp / Snapchat / Facebook Messenger / Twitter DM / Google Hangouts, etc. (1)

9.14.2 Learners may spend more time chatting online than doing school/library work ✓

[ Accept any answer relating to the negative effects of ‘distraction’ ] (1)

9.15 Allowed device: tablet / hybrid (2-in-1) computer/laptop ✓

+ Disallowed device: smartphone / smartwatch ✓ (2)

9.16 Any ONE reason of: ✓

- Increased power use as computers never go into idle or sleep mode (which can lead to overheating and shortened lifespan)
- Computers may be slowed down
- Computers may be affected by malware (1)

9.17.1 Any TWO tips of: ✓✓

- The software must be updated regularly
- Ensure that the default settings are appropriate, e.g. make sure the software is set to automatically scan on a regular basis – at least once a day
- Do not install multiple security products at the same time (2)

9.17.2 Any ONE example of: ✓

- Norton AntiVirus / Avast / AVG / McAfee / Kaspersky / Windows Defender, etc. (1)

9.17.3 Anti-spyware software is included in most anti-virus software ✓ (1)
9.18.1  Any TWO reasons of: ✓✓
   Spelling mistakes (more than one)
   The recipient (‘Client’) is addressed generically (not by name)
   The recipient is requested to click on a link to log in (banks do not ask clients to log in to their account by clicking on a link in an email)
   The librarian may not even have an account at Standard Bank.
   
   [Accept (for ONE mark) a reference to the aspect of social engineering that is present – attempt to trick the recipient by playing on his/her gullibility / trust / greed / expectation of money ... ‘in-flow off payments’]

9.18.2  Phishing ✓  (1)

9.18.3  Image of a closed lock would be displayed ✓
   URL would start with https:// ✓  (2)

9.19.1  Conditional formatting (‘Duplicate Values’) ✓  (1)
9.19.2  To determine the number of time slots that are still available ✓  (1)
9.19.3  COUNTIF / COUNTIFS ✓  (1)

[50]

TOTAL: 150