NATIONAL SENIOR CERTIFICATE EXAMINATION
MAY 2022

COMPUTER APPLICATIONS TECHNOLOGY: PAPER II

MARKING GUIDELINES

Time: 3 hours 150 marks

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SECTION A

QUESTION 1

1.1	1.1.1	H ✓	(1)
	1.1.2	F ✓	(1)
	1.1.3	B ✓	(1)
	1.1.4	I ✓	(1)
	1.1.5	K ✓	(1)
1.2	1.2.1	A ✓	(1)
	1.2.2	C ✓	(1)
	1.2.3	C ✓	(1)
	1.2.4	C ✓	(1)
	1.2.5	B ✓	(1)
	1.2.6	D ✓	(1)
	1.2.7	B ✓	(1)
	1.2.8	C ✓	(1)
	1.2.9	C ✓	(1)
	1.2.10	A ✓	(1)
			[15]

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QUESTION 2

2.1 2.1.1 ✓ Query (1)

2.1.2 ✓ Bookmark (1)

2.1.3 ✓ Portable (1)

2.1.4 ✓ Disk Clean-up (1)

2.1.5 ✓ Cyber Bullying (1)

2.1.6 ✓ Thesaurus (1)

2.2 2.2.1 **Mobile office:** The use of mobile devices (laptop, tablet, smartphone) to enable you to do computer work wherever you are ('on the go'). ✓ (1)

2.2.2 **Disk scanner:** A utility that checks a drive for any errors (and tries to fix them). ✓ (1)

2.2.3 **Intranet:** A private network used by organisations to share information that is only available to the organisation's employees. ✓ (1)

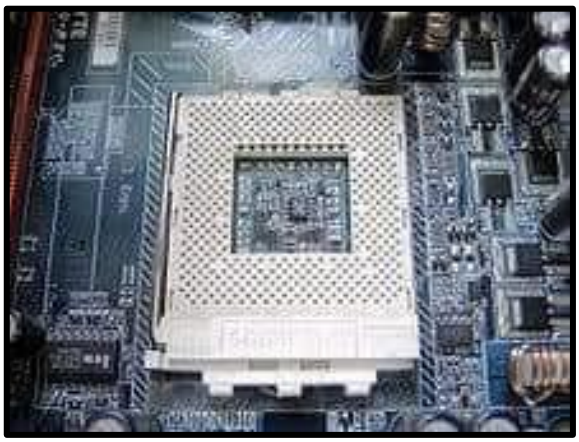
2.2.4 **Hotspot:** A location with a Wi-Fi network connection provided by a computer / tablet / smartphone that enables users to connect to the Internet. ✓ (1)

[10]

25 marks

SECTION B

QUESTION 3 SYSTEM TECHNOLOGIES

<table>
<tr><td colspan="2">3.1.1</td></tr>
<tr><td colspan="2">
[<https://www.anandtech.com/show/456>]</td></tr>
<tr><td>Name of hardware</td><td>CPU slot/socket
(1)</td></tr>
<tr><td>Main function</td><td>The processor socket (also called a CPU socket) is the connector on the motherboard that holds a CPU. ✓

OR

CPU socket forms part of the electrical interface and contact between the motherboard and the CPU. ✓

OR

A socket is the array of pins and the securing mechanism that holds a processor in place and connects the motherboard to the available processing power. ✓

OR

A socket allows the CPU to connect to the motherboard.✓

(Do not award the mark if candidate gives the function of a CPU)
(1)</td></tr>
</table>

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3.1.2



[<https://www.techradar.com/how-to/computing-components/>]

Name of hardware	Hard disk drive (1)
Main function	A hard disk drive (HDD), hard disk, hard drive, or fixed disk is an electro-mechanical data storage device. ✓ **OR** HDD is a device that uses magnetic fields to store and retrieve digital data ✓ using one or more rapidly rotating rigid platters coated with magnetic material. **OR** A hard disk drive (HDD) stores data permanently. ✓ (1)

3.1.3



[https://www.oasistechnologies.co.za/FindCategory.aspx?SelectedGroup]

Name of hardware	Data projector (1)
Main function	The projector takes an input signal, processes it and uses the **projector's** illumination system to output it through a lens. ✓ **OR** A projector displays information that is on any given computer onto a projection screen or other kind of surface. ✓ (1)

3.1.4



[<https://onlyonline.co.za/product/>]

Name of hardware	Memory card (1)
Main function	A memory card is a small storage medium that is generally used to store data ✓ from a camera, etc. **OR** The most common type of data that is stored on a memory card includes videos, pictures, audio and other types of file formats. ✓ **OR** A memory card is used for smaller, portable and remote computer devices to store videos, pictures, audio and other types of file formats. ✓ **OR** A memory card stores data, usually for a portable smart device. ✓ (1)

3.2
- Shutting the computer down incorrectly could, over time, lead to premature component failure.
- When you abruptly turn off the system, the files that the system might have been writing to the disk might be incomplete resulting in loss of data.
- Small power surges could damage components. For HDDs it can damage the read/write head that reads/writes the disk contents.
- Running programs that do not shut down correctly (also data) could become corrupted.
- All unsaved data and programs can lead to data corruption. (2)

(*Any **TWO** of the above*) ✓✓

3.3
- Boot your system up in safe mode.
- Restore your system to its last known good configuration.
- Re-install the operating system.
- Repair using the installation media. (2)

(*Any **TWO** of the above*) ✓✓

3.4 Choosing 'Save' will save the current version of the file over the last saved version of the file. ✓

Choosing 'Save As ...' brings up a prompt to save the file with a different name **OR** to keep the same name but save in a different location **OR** to save the file using a different format. (Any **ONE** of the above) ✓ (2)

3.5 3.5.1 (a) The Recycle Bin is a temporary storage place on a storage device for files that have been deleted from the hard disk. ✓
OR
The Recycle Bin is the safety net when documents are deleted from the hard disk. ✓ (1)

(b) Files deleted from the USB device (USB flash drive, USB memory card, etc.) will not be put into the Recycle Bin. ✓
OR
When deleting work from a portable storage medium, it will be permanently deleted. ✓ (1)

3.5.2 Formatting the drive permanently erases all data from the drive ✓ and restores it to the way it was when you took it out of the packaging. ✓ (2)

3.5.3 Once you empty the Recycle Bin, all the files in it are removed from the hard disk and memory space is freed up. ✓ (1)

3.5.4 He can compress the files/zip the files. ✓ (1)

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QUESTION 4 INTERNET AND NETWORK TECHNOLOGIES

4.1
- Much faster download rates/faster access to or exchange of information.
- Ideal for watching/streaming educational material/resources.
- Always on – do not have to wait for system to dial up.

(*Any **ONE** of the above*) ✓✓ (1)

4.2 Advantage
- Fewer cables/greater flexibility/easier expansion opportunities/scalability.
- More people can be connected to a wireless network than to a wired network.
- Within reason, students can sit anywhere on campus/move around and still be connected.
- Allows for guest access.

(*Any **TWO** valid advantages*) (2)

Disadvantage
- The signal could be blocked by obstructions.
- Laptop computer might not be wireless enabled.
- More attention needs to be paid to security.
- Some installation issues caused by other nearby Wi-Fi networks.

(*Any **TWO** valid disadvantages*) (2)

4.3 4.3.1 E-mailing ✓ (1)

4.3.2 SMS **OR** WhatsApp **OR** Telegram **OR** Instant Messaging ✓ (1)

4.3.3 Blogging **OR** eGroup forum **OR** Newsletter flyers **OR** Twitter **OR** E-mailing **OR** Podcasting ✓ (1)

4.3.4 Facebook **OR** Social networking site **OR** Vodcast **OR** Wiki ✓ (1)

4.4
- Use a filter program.
- Activate the safe search option on the search engine.
- The lecturer can download the required web pages and make them available offline.
- The college LAN can restrict access **OR** Use a proxy server **OR** Use a firewall.
- Educate students about the dangers of inappropriate content **OR** people.

(*Any **THREE** valid answers*) ✓✓✓ (3)

4.5 4.5.1 A Virtual Private Network extends a private network across a public network (OR Internet). ✓ It allows members to send and receive data as though they were part of a large private network. ✓ (2)

4.5.2
- If a staff member is away from the college, they can access student files or data remotely.
- If a staff member is working from home and needs to print a confidential document, they can print it on the VPN printer.
- They can protect confidential work data when in a public environment.

(*Any **TWO** valid answers*) ✓✓ (2)

4.5.3 No. (1)

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4.6 Explanation:

- A network protocol is an established set of rules that determine how data is transmitted between different devices in the same network. (1)

Example:

- Ethernet
- netBEUI (sometimes named netBUI)
- ftp (file transfer protocol)
- VoIP (Voice over Internet protocol)
- TCP/IP (Transmission Control Protocol/Internet Protocol) (Accept one or the other)
- http/https (hypertext transfer protocol)
- POP / IMAP
- DTP (Dynamic Trunking Protocol)
- SMTP

*(Any **ONE** correct protocol is accepted; accept the acronym)* (1)

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QUESTION 5 INFORMATION MANAGEMENT

5.1 5.1.1 Input mask ✓ and Validation rules. ✓ (2)

5.1.2
- Name and Surname
- ID number
- Contact number in case of an emergency
- Type of operation if being operated/reason for admission
- Is the patient allergic to any type of medicine?
- Is the patient on a medical aid/medical aid number?
- Has the patient been on any chronic medication?
- Did the patient have a COVID test?
- Details of next-of-kin

(*Any **TWO** of the above*) ✓✓ (2)

5.2 Input
- The secretary will have to capture all the data that was received from the patients' completed feedback forms. ✓

Processing
- Once this information has been captured, the secretary will have to group the data in different categories to differentiate between the different levels of service offered and identify the problem areas. ✓

Output
- This information can then be presented in a graph/report to be printed or sent to all nurses so that they can be informed of areas that need improvement. ✓

(3)

5.3 Explanation
- Encryption refers to any process that is used to make sensitive data more secure or difficult to read. ✓

Reason for encrypting data
- Less likely to be intercepted by those unauthorised to view it. ✓

(2)

5.4
- Graphs/Charts
- Functions/Formulae
- Conditional formatting
- Filters
- What If analysis
- Pivot table/queries/charts, etc.

(*Any **ONE** of the above*) ✓✓ (1)

[10]

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QUESTION 6 SOCIAL IMPLICATIONS

6.1 6.1.1 It records keystrokes (to monitor what you are typing, obtain passwords, etc.) ✓ (1)

6.1.2
- Do not click on links in pop-up windows, suspect websites, etc.
- Use software to protect against pop-ups (e.g., web browser settings, anti-virus programs, pop-up blockers, etc.).
- Do not open attachments / run programs / install software unless you are sure of what they are.

(*Any **TWO** valid TIPS*) ✓✓ (2)

6.2 People can record / communicate / share / promote positive aspects of their own (and other) cultures and languages. ✓ (1)

6.3
- Offer of unexpected, free or 'too good to be true' services / goods / rewards.
- You are requested to contact someone, or to follow a link.
- The sender is unknown to you / suspicious e-mail address.
- Personal tone from someone who is a stranger – attempt to 'play on your feelings'.
- E-mail is not addressed to you personally, but to e.g., 'undisclosed recipients'.
- Spelling and/or grammatical errors, etc.

(*Any **TWO** valid points*) ✓✓ (2)

6.4 Definition:
- A botnet (short for "robot network") is a network of computers infected by malware that are under the control of a single attacking party, known as the "bot-herder." ✓

How it works:
- The objective for creating a botnet is to infect as many connected devices as possible and to use the computing power and resources of those devices to automate and magnify the malicious activities. ✓ (2)

6.5 Be mindful of how much data you use
Do not download unnecessary information just because you can
Do not visit sites with inappropriate content
Ask each time before you use the connection, etc.
(*Any **TWO** valid points*) ✓✓ (2)

6.6 A UPS is designed for desktop computer systems, to protect them against power abnormalities (power outages / surges / spikes), ✓ and not for mobile devices that are equipped with a battery. ✓ (2)

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QUESTION 7 SOLUTION DEVELOPMENT

7.1 Problem:
- When the formula in cell E3 is copied down to cells E4, E5, etc., the cell reference of D1 will change (to D2, D3, etc.), when it should remain constant / the same. ✓

Solution:
- Use absolute addressing. ✓ (2)

7.2 = D3 / C3
Correct cells used ✓ and divided in correct order ✓

(Note: Award only 1 mark for = D3 / C3 * 100) (2)

7.3 Store names and surnames in separate columns ✓ (1)

7.4 Answer: 0 ✓ (1)

7.5 For sighted people:
- ALT attribute supplies the text that should be displayed if the image cannot be displayed. ✓

For partially sighted/blind people:
- Screen reader software uses the text supplied by the ALT attribute to describe the image to the user. ✓ (2)

7.6 'Show' box for Surname must be ticked ✓
Criteria for Surname must include wildcard / must be "D*" ✓
Criteria for both fields must be on the same row ✓
Criteria for ID_Number must exclude 'Not' / must be 'Is Null' ✓ (4)

7.7 Revisions (most of them) are displayed in the right margin, which makes the document less cluttered and easier to read. ✓
OR
Doesn't affect text or document layout. ✓ (1)

7.8 So that the name will update automatically (e.g., if the document is renamed) ✓ (1)

[14]

75 marks

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SECTION C

QUESTION 8 INTEGRATED SCENARIO

8.1 8.1.1
- GPS maps are updated regularly.
- Voice prompts can be used when driving.
- No need to have an opened paper map, which takes up a lot of space.
- Routes can be planned automatically by the device.
- Safer to use voice prompts than trying to read a map whilst driving, etc.

(*Any **TWO** valid answers*) ✓✓ (2)

8.1.2 Process whereby the geographical position where a photo is taken (i.e., latitude and longitude) ✓ is added to the file ✓ (metadata / file properties) (2)

8.1.3
- To find the exact place again where a picture was taken.
- Helps organise photographs by location.
- Pinpoint the location on an application such as Google Maps.

(*Any **TWO** valid answers*)✓✓ (2)

8.2 8.2.1 A laptop is a small, portable computer – small enough that it can sit on your lap. ✓ Nowadays, laptop computers are more frequently called notebook computers, though technically laptops are somewhat larger than notebooks (thicker and heavier). ✓

OR

Technically there is really no difference ✓ between a laptop and a notebook as the only difference will be in the weight or thickness of the device. ✓ (2)

8.2.2 The size of the screen. (1)

8.2.3 USB hub (1)

8.2.4 The Fingerprint Reader Security is a biometric security measure that allows access to the notebook by way of scanning the fingerprint of the user. ✓

This is a better way than using a username and password as it is unique and cannot be copied. ✓ (2)

8.2.5 System Software/Operating Software/Operating System. ✓ (1)

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8.3 8.3.1 6 ppm. ✓ (1)

8.3.2 (a) It is software/a program/a utility ✓ that allows the printer to communicate with/be used by the operating system/ computer. ✓ (2)

(b)
- Check which drivers were automatically installed from the operating system's database/load generic drivers.
- Check on the CD that came with the printer.
- Download from the Internet/manufacturer's website.
- Borrow a CD from someone who has the same printer.
- Obtain from a computer shop, etc.

(*Any **TWO** valid answers*) ✓✓ (2)

8.3.3
- Any mobile device such as a smartphone can connect to the printer wirelessly.
- Everybody in the business can connect to the printer from anywhere in the office.

(*Any valid answers*) ✓✓ (2)

8.4 8.4.1 EULA:
- End User Licence Agreement. ✓

What EULA refers to:
- The EULA is a contract to allow the user to use the software.
- The EULA licenses your app to the user.
- The EULA restricts certain abusive uses of your app.
- The EULA allows you to limit your liability.
- The EULA allows you to disclaim warranties.
- The EULA can protect your right to terminate licences or stop operating without repercussion.

(*Any **ONE** valid answer*) ✓ (2)

8.4.2 Facebook effectively own anything you post on the site ✓ this means that they can do what they like with the information without consulting or paying you. ✓ (2)

8.5 A wizard is a feature that guides the user through the installation or setup of a software program or hardware device. ✓ Unlike a manual or online help, a wizard guides you through the installation one step at a time by asking a series of questions. ✓ (2)

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QUESTION 9 INTEGRATED SCENARIO (continue)

9.1 9.1.1 It means it is compulsory/mandatory/required ✓ to enter data in that field. (1)

9.1.2
- Some people will not complete the survey because they are not aware of the survey.
- Some people may not have access to computing devices/the Internet.
- Maybe people don't know how to use computers.

(*Accept any **ONE** of the above*) ✓ (1)

9.1.3 Explanation:
- A blog is a discussion or informational website published on the World Wide Web consisting of discrete, often informal diary-style text entries (posts). ✓

Good practice:
- Use keywords.
- Use click-worthy titles.
- Pick a niche and stick with it.
- Write accurate meta descriptions.
- Write content for your audience.
- Add blog tags.
- Link internally and externally.
- Post often.
- Write awesome content.
- Promote your blog and encourage engagement.

(*Accept any **TWO** of the above*) ✓ ✓ (3)

9.1.4 Because an **RSS** (Really Simple Syndication) **feed** is an online file ✓ that contains a summary of every piece of content the travel agency has published online, often with links to the full article. Each time new content is published, details about that content will automatically be sent to each client. They will then be able to click on only those articles that interest them. ✓ (2)

9.2 9.2.1 Report ✓ (1)

9.2.2 Purpose
- Ensures that there are no duplicates/it is unique.
- Can be used as a Primary Key as it will be unique

(*Accept any **ONE** of the above*) ✓

How it works
- Automatically increments/increases the value in the field for every new record. ✓ (2)

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9.2.3
- Query can be saved for future use.
- If the table is updated the query will automatically be updated.
- Can create reports or other queries based on existing queries.
- Calculation fields or fields that manipulate the data can be added.

(*Accept any **THREE** of the above*) ✓✓✓ (3)

9.3 9.3.1 It will have no effect. ✓ (1)

9.3.2
- The dimensions specified are not in keeping with the original aspect ratio. ✓

OR

- The balance/ratio between height and width is wrong. ✓ (1)

9.3.3 Accessibility
- The blind user will not be able to understand what the picture is about. ✓

Motivation
- There is no alt attribute (for the screen reader). ✓ (2)

9.4 9.4.1 The "X" next to the speaker indicates that the speakers have been muted (turned off). ✓ (1)

9.4.2
- Check if speakers have been placed in the correct jack.
- Check if speakers' power has been turned on.
- Try swapping with other speakers.
- CD/sound file may be damaged; try another.
- Check volume control utility.
- Test to hear Windows default system sounds.

(*Accept any **THREE** of the above*) ✓✓✓ (3)

9.5 9.5.1 Pastel, Brilliant Accounting, Quick Books, AccPac, SageX3, TurboCash, GnuCash, KmyMoney.
(*Accept any **ONE** of the above*) ✓ (1)

9.5.2
- Malicious purposes.
- Out of boredom.
- For ego-trips/To show how well they can program.
- For economic gain, others will then have to purchase an anti-virus program.
- To create/exploit security loopholes.

(*Accept any **TWO** of the above*) ✓ (2)
[24]

50 marks

Total: 150 marks

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