NATIONAL SENIOR CERTIFICATE EXAMINATION
MAY 2023

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 C

1.1.2 C

1.1.3 C

1.1.4 A

1.1.5 A

1.1.6 D

1.1.7 C

1.1.8 C

1.1.9 A

1.1.10 B

1.2 1.2.1 C

1.2.2 E

1.2.3 F

1.2.4 J

1.2.5 D

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QUESTION 2

2.1 2.1.1 Grid computing

2.1.2 DPI

2.1.3 caption

2.1.4 Copyright

2.1.5 Skimming

2.2 Expanding the following acronyms. (Correct wording **MUST** be given.)

2.2.1 **MMS** – Multimedia Message Service

2.2.2 **HTTP** – Hypertext Transfer Protocol

2.2.3 **VPN** – Virtual Private Network

2.2.4 **2NF** – Second Normal Form

2.2.5 **HD** – High Definition

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SECTION B

QUESTION 3 SYSTEM TECHNOLOGIES

3.1

Question number	Name of hardware/ software	Main function
3.1.1	Network cable Ethernet cable	Network cables are network hardware used to connect one network device to other network devices or to connect two or more computers to share printers, scanners, etc. **OR** A network cable is a cabling system that allows for multiple network devices in different areas to communicate with one another. **OR** Network cable to connect the computer to the network. **(Any suitable answer that mentions a cable connecting to a network)**
3.1.2	Defragmentation App/Microsoft Drive Optimizer	The process of defragmentation moves the data blocks on the hard drive around to bring all the parts of a file together. **OR** Disk defragmentation takes all the pieces of each file and stores them in one place. **OR** Disk Defragmenter is a utility in Microsoft Windows designed to increase data access speed by rearranging files stored on a disk to occupy continuous storage space. **(Any suitable answer that indicates that this App organises files)**
3.1.3	PCI slots	A PCI slot is a built-in slot on a device that allows for the attachment of various hardware components such as network cards, modems, sound cards, disk controllers and other peripherals. **OR** A place to fit an expansion card containing the circuit that provides specialised capability, such as video acceleration, sound, or disk drive control. **(Any suitable answer that indicates the purpose of a slot)**
3.1.4	Stylus (pen)/ Touchscreen pen/HP pen Do not accept smart pen	A stylus (or stylus pen) is a small pen-shaped instrument whose tip position on a computer monitor can be detected. It is used to draw or make selections by tapping. **OR** A stylus pen is a metal tool with a rubber tip that can be used to write, draw, or play games on touch screen devices. **OR** A pen that allows you to write and tap directly on a touch screen. **(Any suitable answer that explains using a pen with a touch screen)**

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3.2 3.2.1 A device that allows data to be entered into a computer system

OR

An input device is a piece of equipment used to provide data and control signals to an information processing system

Example: keyboard, mouse, joystick, light pen, track ball, scanner, graphic tablet, microphone, etc.

3.2.2 A device that allows the user to view/hear the data that has been entered into a computer system

OR

An output device allows data to be transmitted by the computer to a human-friendly form

Example: monitor, printer, headphones, computer speakers, projector, GPS, sound card, video card, etc.

3.3 3.3.1
- Data transmission method
- Uses serial transmission/bits of data are sent one at a time
- Universal standard/common interface
- Universal port to connect devices

(Any **TWO** of the above)

3.3.2 Laser printer

3.3.3
- Cheaper printing cost per page
- It prints at a faster speed
- It prints text in high quality
- Colour fast

(Any **TWO** of the above)
(Note to marker: if learner gave Inkjet printer as an answer the learner will lose the mark for 3.3.2 but need to get the marks for 3.3.3 if correctly referred to Inkjet printer.)

3.4
- Supports higher resolution/better-quality video
- Can transmit sound and video on one cable
- Newer equipment only supports HDMI

(Any **TWO** of the above)

3.5 App store/Play store/AppGallery

3.6
- Internet access must be available
- Cost implications based on bandwidth usage
- Potentially limited functionality (compared to installed software)
- Can be slow depending on connectivity speed

(Any **TWO** of the above)

3.7 To test the software before buying

3.8 Updated software can open or use files that were created or saved in a previous version of the software

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QUESTION 4 INTERNET AND NETWORK TECHNOLOGIES

4.1 4.1.1 It allows your mobile devices to use the faster and cheaper ADSL Internet connection already provided, i.e., mobile Internet via a fixed-line connection.

4.1.2
- If you don't protect your connection with a password, neighbours may 'piggy-back' your connection, i.e., steal/use your 'cap'.
- Data, information, personal codes etc. on your home network could be at risk.

(Any **ONE** of the above)

4.2 ADSL modem **OR** router (Any **ONE** of the TWO answers given)

4.3 A firewall controls/monitors access from the network/devices to and from another network (like the Internet).

4.4 For each of the risks:
Naming the risk – 1 mark, describing the risk – 1 mark:

Hacking
When a person tries to gain unauthorised access to a computer system / data can be deleted/corrupted by hacker

Malware
A software program designed to damage data/disrupt the computer system / replicates itself and fills the hard disk /
A program that replicates itself to damage/delete files
(Multiple kinds of malware can be awarded if listed and given a matching description e.g., trojan horse, worm.)

4.5
- to enable logon information to be kept on this computer
- to provide pages customised for the user the next time he logs on
- to activate shopping carts and one-click purchasing
- to be able to distinguish between new and repeat visitors to the website

(Any **TWO** of the above)

4.6 4.6.1 Star topology

4.6.2
- It is very reliable – if one cable or device fails then all the others will still work
- It is high performing as no data collisions can occur
- Less expensive because each device only needs one I/O port and needs to be connected with hub with one link
- Easier to install
- Easy to expand to another topology
- Easy to detect faults and repair
- No disruptions to the network when connecting or removing devices

(Any **TWO** of the above)
(Note to marker: Answer will depend on Topology given in 4.6.1)

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4.6.3
- Centralisation of data/sharing of files
- Data is more secure
- Sharing of resources
- Accessible from anywhere on the network
- Saving storage space on workstations
- Backups and network security is controlled centrally

(Any **TWO** of the above)

QUESTION 5 INFORMATION MANAGEMENT

5.1 5.1.1 Survey – A set of written/typed questions given to many or a group of people
AND
Interview – A verbal administered set of questions usually intended for one person (such as an expert)

5.1.2
- There are no 'outside' checks concerning what is posted on the Internet/anyone can post anything, so that it could be incorrect
- Information may be presented with bias
- Information may be out of date
- Fake news is spread widely

(Any **TWO** of the above)

5.2
- INPUT: Capture pictures/scan images/photos/copy images from removable disk
- PROCESSING: Pictures are formatted, resized, rotated
- OUTPUT: Collage of pictures fitted on page

(Take note of where the process starts)

5.3
- Delete unused programs/delete temporary files
- Empty the Recycle Bin
- Delete empty files
- Zip folders

(Any **TWO** of the above)

5.4
- External hard drive
- USB flash disk
- DVD/Blu ray disk

(Any **ONE** of the above)

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QUESTION 6 SOCIAL IMPLICATIONS

6.1 6.1.1 Geotagging refers to including the position/GPS coordinates of the location where the photo was taken in the metadata/with the file

6.1.2 The inclusion of the GPS coordinates may alert/inform people where to find people or valued objects/ or not to find people/value objects

6.2 Right to access: people have the right to access information that is held by the state or any organisation or person. The right to access does not include records of information to be used in criminal or civil proceedings.

POPIA – The protection of personal information act aims to ensure that all South African institutions are held accountable should they abuse or compromise your personal information.

6.3 Theft of time is when an employee accepts payment for work not done or the time they should have spent doing work-related tasks

Bandwidth theft is when someone is stealing wireless bandwidth connecting to the internet through a wireless internet router that does not belong to you or you do not have permission to use.

6.4 6.4.1 Using computers in a way that is not harmful to the environment

6.4.2
- They contain poisonous material
- They require more and more land to be allocated to rubbish heaps
- They can cause health issues for humans and animals
- They can pollute water, soil, etc.

(Any **TWO** of the above)

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QUESTION 7 SOLUTION DEVELOPMENT

7.1 Advantage
- Smaller file size
- Can be read by almost any device or app, i.e., portability

(Any **ONE** of the above)

Disadvantage
- All formatting is lost

7.2 So that Word will only replace whole words matching the letters in the 'Find' box, not parts of words or partial matches

7.3 JUN 04

7.4 Filter

7.5 Class criteria must be '11A' **or** '11B' (or over two rows)
Cans criteria must be >=50 (or >49)
Show box for Cans must have a tick mark/be selected.

7.6 7.6.1 If the employee is permanent and the years of service are greater than 9 (or 10 or more)

7.6.2 50%

7.6.3 Wrap text

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SECTION C

QUESTION 8 INTEGRATED SCENARIO

8.1 8.1.1 Primary memory

8.1.2 Retina display is a brand name used by Apple for its series of IPS LCD and OLED displays that have a higher pixel density than traditional Apple displays

OR

Retina display is a term coined by Apple that just means that the pixel density on a screen is so high that the naked human eye cannot distinguish individual pixels at a normal viewing distance

OR

Retina displays produce very crisp images at normal viewing distances

8.1.3 A touch screen with multiple points of contact

8.1.4 IPS is a screen technology used for LCD which eliminates "tailing" when touched .

8.1.5
- Controls the hardware
- Controls the software/apps
- Controls the network/data access
- Memory Management
- Controls the security
- Provides an interface between the user and the device

(Any **THREE** of the above)

8.1.6 System software

8.1.7 Closed-source software refers to computer software that is closed, which means that the public is not given access to the source code.

8.1.8
- GNU/Linux.
- Mozilla Firefox.
- VLC media player.
- SugarCRM.
- GIMP.
- VNC.
- Apache web server.
- LibreOffice. Or any other suitable example

(Any **ONE** of the above)

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8.2 8.2.1
- Students have a built-in calculator on the tablet
- Students can digitally take notes in class and save these.
- Students can access the Internet as a research resource.

(Any **ONE** of the above)

8.2.2
- Create full documents (OR spreadsheets OR databases OR presentations) from scratch
- Not ideal to run multiple programs simultaneously
- Accessing some webpages, movies, etc.
- Downloading a number of files

(Any **TWO** of the above)

8.3
- E-books can easily be updated/distributed
- Contribute to environment/green computing
- Fonts in e-books can be resized
- Easy to transport/store large number of books
- Potentially quicker to access/source books/delivered almost instantly
- Can have additional features other than text, i.e., video clips, etc.
- Many e-books are sold with bonuses, which you usually do not get with a printed book. This adds value to your purchase.
- E-books take up less space

(Do not accept answers relating to cost) (Any **TWO** of the above)

8.4 8.4.1
- She could become a victim of identity theft
- She could be a victim of Cyberstalking/Harassment
- She could be a victim of Social Engineering (or example of Social Engineering)
- Paedophiles can obtain her information

(Any **TWO** of the above)

8.4.2
- The instant nature of communication/quick messages/IM
- Closed groups are convenient and have enhanced security/privacy
- WhatsApp is a very popular/ubiquitous app installed on almost anybody's device
- Can handle a range of multimedia well, e.g., for taking videos
- Can be used for chat as well as video call
- One group could be created and she could instantly communicate with all of them

(Any **TWO** of the above)

8.5 8.5.1
- RSI (Repetitive Strain Injury) OR CTS (Carpel Tunnel Syndrome)
- Eye strain OR Headaches
- Back strain OR Neck strain

(Any **TWO** of the above)

8.5.2
- Regularly stretch your fingers and wrists OR buy an ergonomic keyboard
- Regularly look up from screen and focus on a distant object for a few moments
- Regularly get up and stretch back and body OR buy an ergonomic chair OR ensure that when seated, you look slightly down onto your screen

(Any **TWO** of the above) *(Must match those chosen in 8.5.1)*

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QUESTION 9 INTEGRATED SCENARIO (continued)

9.1 9.1.1 Information Overload

9.1.2
- Don't subscribe to too many sites for updates/Unsubscribe from lists/groups
- Define/Use e-mail message rules
- Limit interactions/friendships/postings on social media
- Do not contribute to the problem by continually posting/sending (unnecessary) information
- Use ICT tools (accept examples such as RSS feeds) to help process/organise data/information
- Create to-do lists of critical tasks
- Actively take breaks from interacting with people/systems that contribute to information overload etc.

(Any **TWO** of the above)

9.2 9.2.1
- People tend to forget
- Misplaced trust in hardware
- Backup mediums can be expensive for large amounts of data
- Backups can be time consuming
- Users lack the knowledge of how to perform backups, etc.

(Any **TWO** of the above)

9.2.2
- Backups cannot be lost due to local backup devices failing
- Backups can be accessed from any computer with Internet access
- Backups can be synced automatically
- No need to connect or remove backup devices
- Cloud storage could potentially be a cheaper solution than multiple storage devices, etc.

(Any **TWO** of the above)

9.3 9.3.1 A software bug is created by mistake/programming error
Report the error to the programmer.

9.3.2 A patch is a software solution to fix one specific problem

A service pack is a collection of all the patches/updates up to a specific time (including new features) and is then distributed as one package

9.3.3
- Can use lots of data/cap
- May not want to accept/install all the updates
- Programs that are not used can update, wasting storage space on the device and bandwidth.

(Any **TWO** of the above)

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9.4 9.4.1 A – Router/Gateway/Switch

9.4.2 B – Switch/Gateway/Router/Repeater/Hub

9.4.3
- Install a firewall
- Every user should have their own profile/login details
- Secure/Lock the room

(Any **TWO** of the above)

9.5 9.5.1
- Add a title
- Add vertical axis labels
- Add data labels/show numbers on bars
- Add minor gridlines
- Add data table
- Add axes titles

(Any **THREE** of the above)

9.5.2 A pie graph will not be able to correctly display BOTH data ranges/A pie chart is used to display parts of a whole

9.5.3 Copy data from the spreadsheet and paste it as a linked object

9.5.4
- Lock/protect specific cells
- Protect the document

9.5.5
- SUM function added
- Cell range for SUM function is incorrect

Total: 150 marks

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