NATIONAL SENIOR CERTIFICATE EXAMINATION
MAY 2021

COMPUTER APPLICATIONS TECHNOLOGY: PAPER I

MARKING GUIDELINES

Time: 3 hours 150 marks

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SECTION A

QUESTION 1

1.1 1.1.1 D

1.1.2 G

1.1.3 A

1.1.4 B

1.1.5 C

1.2 1.2.1 C

1.2.2 B

1.2.3 D

1.2.4 C

1.2.5 D

1.2.6 A

1.2.7 C

1.2.8 A

1.2.9 B

1.2.10 D

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QUESTION 2

2.1 2.1.1 hardware

2.1.2 VPN

2.1.3 bandwidth

2.1.4 PPM

2.1.5 GIGO

2.1.6 product key

2.2 Expanding the following acronyms.

2.2.1 **DIMM:** dual in-line memory module

2.2.2 **DPI:** dots per inch

2.2.3 **OCR:** optical character recognition

2.2.4 **ICT:** information communication technology

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SECTION B

QUESTION 3 SYSTEM TECHNOLOGIES

3.1

Question Number	Name of Device	Main Function
3.1.1	system software/ operating system	Manages the operations of computer hardware, helps us operate the computer system easily, controls and facilitates the execution of the application software
3.1.2	CPU	The central processing unit (CPU) of a computer is a piece of hardware that carries out the instructions of a computer program. It performs the basic arithmetic, logic, and input/output operations of a computer system. **OR** Controls the hardware and software
3.1.3	VGA port	Transfers images to a display/monitor/projector using an analogue signal
3.1.4	fan	A computer fan is any fan inside, or attached to, a computer case used for active cooling and may refer to fans that draw cooler air into the case from the outside, expel warm air from inside, or move air across a heat sink to cool a particular component to prevent a computer from overheating.

3.2 3.2.1 inches

3.2.2 aspect ratio

3.2.3 Better image quality BECAUSE the signals are digital (i.e. not analogue) HDMI cable carries video AND audio *(must supply reason)*.

3.2.4
- An older BIOS cannot recognise very large hard drives.
- Connector on the motherboard is not compatible with this drive.
- There might be defects on the drive.
- The operating system does not recognise the drive.
- The host adapter drivers are not installed.
- Hard drive not correctly plugged in/installed.
- Power supply not strong enough/insufficient for another device.

(Any **TWO** of the above)

3.3 3.3.1 Setting the read-only attribute would mean that the file cannot be changed or replaced by a file with the same name. This would be particularly useful in the case of a BACKUP file that by definition should NOT be changed independently of the original file. (*Mark the understanding of the concept, not the wording!)*

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3.3.2 Takes up less space on storage device, OR allowing more and/or larger files to be stored on the same device. OR saving CAP/DATA when file is transmitted.

3.3.3 In case of theft/fire/other disaster, the backup files would be lost together with the original files, making a 'restore' of the original files impossible.

3.4 3.4.1 A program used to let certain programs run at specific times.

3.4.2 Any ONE of (Do not accept file name):
- type of file, i.e. file extension
- text within file
- file size
- date created
- author

(These are the most common. You can search on any property that appears in the file list headings in Windows Explorer (Details view)

3.4.3
- Ctrl+Alt+Del and click on Task Manager
- Windows key + X and select Task Manager
- Ctrl+Shift+Esc

(Accept any ONE of the above)

- end a program that is not responding
- change password
- sign out
- shut down

(Accept any ONE of the above)

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QUESTION 4 INTERNET AND NETWORK TECHNOLOGIES

4.1 4.1.1 Firewall

4.1.2 Worm (accept virus/malware)

4.1.3 Switch **OR** switching hub **OR** intelligent hub **OR** router **OR** bridge.

4.2 4.2.1
- A WLAN saves costs, requires less effort and presents fewer difficulties than laying cables.
- It is easy to add additional equipment to the network.
- It allows for mobility – you can connect wherever you can access the signal in the office.
- There is no clutter that is associated with using cables.

*(Any **TWO** possible advantages)*

4.2.2
- There might be interference with the wireless signal, which would cause the devices to lose their connection to the network.
- A WLAN requires a greater level of expertise to set up.
- People might illegally access the network by "intercepting" the wireless signal.

*(Any **TWO** possible disadvantages)*

4.3 4.3.1
- Ensure that you have up-to-date anti-spyware software installed.
- Many sites requiring secure information are now created so that browsers will warn you if you are re-directed to another site. Always pay attention to these warnings.
- Ensure that the site you are accessing is secure.
- Check that the URL is correct.

*(Any **TWO** possible answers)*

4.3.2
- Keep your operating system up to date.
- Keep your antivirus software's definitions up to date.
- Be careful when installing software from the internet.
- Do not click on links in pop-ups.
- Don't open attachments or programs unless you are sure of what they are and/or where they come from.
- Have a good password policy.
- Don't give out personal information.
- Stay informed.
- Don't be gullible.
- Anything that is too good to be true, probably is.

(*Any **ONE** possible answer)*

4.3.3
- Be aware that the person with whom you are communicating may not be who they say they are.
- Never be tempted to give out any personal details.
- Do not make arrangements to meet someone you meet online.
- If someone makes you feel uncomfortable immediately tell someone.
- Think before you post photos or text anywhere on the internet.

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- Be aware that no page you create on social networking sites is private.
- It is acceptable to ignore friend requests from strangers on social networking sites.
- Be suspicious of someone who is just too "perfect".

(*Any **ONE** possible answer)*

4.4 4.4.1
- product description
- price
- goods on sale
- hyperlinks to information sites about the products
- security for payment methods
- shopping basket feature
- search the website for a particular product
- help facility
- ability to select products from drop-down boxes
- convert prices to local currency
- make suggestions for purchases based on past orders
- email of invoices/statements/delivery notices/information
- track the delivery of orders
- returns policy
- design
- easy/user-friendly navigation
- speed of loading

*(Any **TWO** possible answers)*

4.4.2
- no time spent travelling to store
- benefits the disabled who can't move about easily
- no travelling expenses such as petrol
- there is a larger selection of goods to choose from
- you can compare shops/prices
- you can shop 24/7/365
- there are no security issues with carrying cash
- can have items delivered to any address
- no sales pressure
- privacy for discrete purchases

*(Any **TWO** possible answers)*

4.4.3
- much more information available
- can download text/diagrams/photos
- can set up multimedia presentations
- can interact directly with the company
- up-to-date information

(*Any **ONE** possible answer*)

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4.5
- email with file attachments
- fax to email
- upload information to website
- FTP
- use VPN
- cloud storage

(*Any **ONE** possible answer)*

QUESTION 5 INFORMATION MANAGEMENT

5.1 Data is raw knowledge that is collected. Once the data is manipulated and/or processed it becomes information.

Example:
So Google Maps will collect data about roads, road conditions, etc. and when it is processed can, for example, give information about potholes on the road.
(Accept any legitimate example)

5.2
- real-time traffic news
- re-routing options available
- suggestions about which lane to be in
- add stops to your trip
- check current and future traffic
- orientate yourself
- navigate through buildings
- see inside places
- catch the last train
- what your favourite locations are
- save parking location
- track friends

(Any **THREE** of the above)

5.3 GPS connection and your phone's location needs to be activated

5.4
- Google Maps can inform a country of where the most traffic jams occur.
- Google Maps can use the information to inform the road safety department where roads are not up to standard as they can zoom into the areas of concern.
- Google Maps can be used to track and possibly find a vehicle if there is a form of tracking device.
- Google Maps is not confined to one country and therefore can give information to people about roads in another country.

*(Any **TWO** answers that reflect how a country, its citizens and the road safety department can benefit by the information received from Google Maps)*

5.5
- Most people can access data captured from Google Maps so criminals could use this to see the view of a house, company, etc. and plan a robbery.
- If the location setting is used as part of social media you could have a stalker that knows where you are.
- We do not know what is recorded in the background when using the Google Maps app and therefore you leave an electronic footprint that could be used at some stage to track your daily routine.

*(Any **ONE** of the above as long as there is a negative reason)*

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QUESTION 6 SOCIAL IMPLICATIONS

6.1
- They can save money on postage and on travel and communication cost by doing video conferencing.
- Their marketing and advertising costs can be lower as they can reach wider audiences with the same content using websites and social media.
- Use of mobile apps such as WhatsApp, Telegram, etc. enables a company to send data in various formats that were not previously available.
- They are cheaper than older forms of communication such as phone calls.

*(Any **TWO** suitable answers must still relate to the company. Do not simply accept cheaper without a qualifier)*

6.2 Blogs are websites that are updated often with news and events in chronological or sequential order. A blog reads like a journal with the most recent entry at the top. **OR** it is a personal log stored on a website.

6.3 A wiki is a website that allows for the collaborative creating and editing of the content of web pages. Anyone can contribute to it and the final published articles do not belong to any one individual. The quality or accuracy of the information is therefore not guaranteed.

6.4 Spyware refers to any technique or software that tries to monitor and track the way you use your computer, and then to report this information to a third party.

A keylogger is a type of spyware that records your keystrokes as you type and attempts to discover your usernames and passwords.

Banks issue warnings because there are no guarantees that they do NOT contain spyware or because your personal login information could be at risk.

6.5 Information overload

- Implies that people are inundated with too much information from whichever source and are unable to process the information to reach a decision.

OR

- The internet can lead to information overload if people spend too much time in front of their computers being bombarded with information about what is happening around the world.

EFFECT:

- This could lead to less productivity at work and fewer interactions with family.

OR

- Stress/anxiety
  (*Any reasonable answers about the negative impact information overload could have)*

QUESTION 7 SOLUTION DEVELOPMENT

7.1 7.1.1 =E3 – D3
=E3 – (B3 + C3)
=E3 – B3 – C3
(Accept any of the answers: One mark for E3, one mark for the correct subtractions)

7.1.2 =IF✓(F3<0, ”Loss”, ”Profit”)
(Accept correct variations)

7.1.3 Columns A , D and E.

7.1.4 merge and centre

7.2 <head> <body> </table> </html> </p> (Accept any **FOUR**)

SECTION C

QUESTION 8 INTEGRATED SCENARIO

8.1 A URL is an alpha-numerical address used to identify resources such as web pages, documents and files stored on web servers on the internet.

8.2
- The user has clicked the Back button (perhaps several times) to return to the first page viewed (usually the Home page), after which there are no further pages to 'go back' to.
- The browser has just been opened (i.e. is on the Home page) and no other sites or pages have been viewed.

8.3 8.3.1
- Skype is a software package that allows people to communicate using the internet or using VoIP.
- Skype allows you to make video calls and speak to a person whom you can see and hear as if you were in the same room.

8.3.2
- Check local times before calling someone in another country as they might not be in the same time zone as you are.
- Only use video when necessary – or turn video off if call quality deteriorates.
- Quality can be significantly improved by using a decent headset and microphone.
- Pay attention to your contact's status – don't call them if they are away or busy.
- Make sure that when you call you are prepared and have all relevant questions ready.
- Make sure that the room you are in when making a VoIP call is free from too many outside noises.

(Accept any **THREE** reasonable answers that focus on the recommendations to be considered as good practice when using VoIP)

8.3.3
- Computer's sound settings may be low (or on mute): check these settings.
- Computer might be set to use wrong sound output device: check these settings.
- There may be a (temporary) software or driver conflict: reboot computer.
- Speakers might be faulty: swop with speakers that are known to work.

*(Accept any **TWO** reasonable answers)*

8.4 Patch: update to fix a specific 'bug' / security issue in software
Service pack: (Scheduled) update to fix ALL 'bugs' / security issues (often including new / improved features since initial release of software, and larger than patches)

8.5 Username: To give you access to the website.
Password: To give you access to your data on the website.

8.6 8.6.1 A device midway in size between/a combination of a smartphone and a tablet and combining the best features of both.

8.6.2 The gap/separation between those that have access to/can use technology, and those that do not/cannot.

8.7 8.7.1 Social networking sites.

8.7.2
- So you can stay in touch and communicate with the management of Arden University.
- See what new courses they may have on offer.
- Start to network with people who may have similar interests.
- Be part of the frequently asked questions that may pop up.

*(Accept any **TWO** reasonable answers that refers to connecting and staying informed)*

8.8 8.8.1 MS Office 365 can use/read files created in MS Office 2016.

8.8.2 Save the file(s), e.g. using Save As, in the older/previous version.

QUESTION 9 INTEGRATED SCENARIO (continued)

9.1 9.1.1 The internet is a worldwide computer network that consists of computers and networks that are linked using telephone lines, fibre, undersea cables and satellite or microwave connections for the purpose of communication and sharing resources.
(Accept any reasonable answers that show evidence that the learner understands that it is computers, connected, sharing resources. Mark carefully to ensure consistent marking.)

9.1.2
- Pages using flash graphics may either not load or load very slowly and can cause your device to freeze or crash.
- Pages using large graphics or tables may not display correctly.
- Pages that depend on cookies, pop-up windows for data entry and JavaScript may not work correctly.

(Accept any reasonable answers that show evidence that the learner understands that with a laptop the screen size, graphics as well as the size of memory could have an impact on the quality and speed of loading websites, etc.)

9.2 9.2.1 CPU
RAM
dedicated graphics card
(Accept any TWO of the three)

9.2.2 Laptops have the advantage of allowing you to work anywhere, at any time and to always have your data with you. They also allow you to run on battery power for a few hours.

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9.2.3 Remove temporary files **OR** Delete files and folders from the Recycle Bin **OR** Remove temporary files created by Windows **OR** Remove components of Windows that are not being used **OR** Remove programs no longer being used
*(Accept any reasonable **ONE** answer)*

9.3 9.3.1 Multimedia is content that combines text, sound, images, drawings, animations and movies to communicate ideas and concepts to a user.

9.3.2 Adobe Flash, Fireworks, DreamWorks, etc.

9.3.3 application software

9.4 To protect your hardware and data against power dips or/and surges as well as power outages.

9.5 9.5.1 Google Drive, Dropbox, DROPitTOme, filegooi, OneDrive, SkyDrive
(Accept any reasonable answer)

9.5.2 Synchronising or 'syncing' means that the changes you make to a file will be updated on all of the computers or devices that are linked to that system (e.g. Dropbox). In this way, you can be sure that you always work with the latest version of a file.

9.6 9.6.1 Green computing is a term used to describe using computers in a way that is sensitive to the environment.

9.6.2
- Switch off computer and devices not being used.
- Avoid wasting paper by rather proofreading on the screen.
- Rather than throwing away hardware, see if someone else can make use of it or try to repair or upgrade it.
- Don't just throw away ink and toner cartridges. Rather send your cartridges back to the manufacturer when you have finished with them. Investigate the possibility of refilling and reusing ink and toner cartridges.

*(Accept any **THREE** reasonable answers)*

9.6.3
- Sit correctly.
- Take regular breaks.
- Buy ergonomic keyboard and mouse.
- Look away from screen at times.
- Make sure that there is enough lighting and ventilation in the room you are working in.
- Adjust the height of your seat so you can sit with your hands level to the keyboard, etc.

*(Accept any **TWO** reasonable answers)*

Total: 150 marks

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