

PRELIMINARY EXAMINATION

September 2020

COMPUTER APPLICATIONS TECHNOLOGY

Grade 12

PAPER 2 THEORY MEMORANDUM

TIME: 3 Hours

Marks : 150

This memorandum consists of 13 pages

QUESTION 1

1.1	C✓
1.2	A✓
1.3	D✓
1.4	C✓
1.5.	D✓
1.6	B✓
1.7	B✓
1.8	A✓
1.9	C✓
1.10	D✓ Total: [10]

QUESTION 2

2.1	I✓	AUP
2.2	O✓	Target audience
2.3	C✓	HDMI
2.4	K✓	Primary key
2.5	A✓	NFC
2.6	J✓	Bot
2.7	F✓	Style
2.8	H✓	Click-jacking
2.9	E✓	LTE
2.10	G✓	Big data Total: [10]

3.1	False – Compression ✓
3.2.	False – Contrast ratio✓
3.3	False – Broadband✓
3.4	True✓
3.5	True✓
	Total: [5]

QUESTION 4: SYSTEM TECHNOLOGIES			
4.1	4.1.1	3D printers deposits LAYERS of plastic or other material on top of each other to build an object ✓	(1)
	4.1.2	<ul style="list-style-type: none"> • Cost of the printer and the operation (only one mark for cost). • Not multifunction, cannot print on paper, scan copy etc. • Home offices generally do not need to print 3D objects. • Possible toxic emmisions. <p style="text-align: right;">(Any 3) ✓✓✓</p>	(3)
4.2		<ul style="list-style-type: none"> • Change the default application that opens a HTML file / Use "Open With" • Reinstall the browser <p style="text-align: right;">(Any 1) ✓</p>	(1)
4.3	4.3.1	<ul style="list-style-type: none"> • Linux (any version) • Android (any version) <p style="text-align: right;">(Any 1) ✓</p>	(1)
	4.3.2	<ul style="list-style-type: none"> • Lower hardware costs as it uses a lot less resources like power, hard drive space and memory. • High-quality well designed software. • Open source software can be customised. • Simple license management as you can load it on as many devices as you need without any tracking and counting of licenses. • Abundant support – the open source online community is big • Support mostly free of charge. <p style="text-align: right;">(Any 2) ✓✓</p>	(2)
	4.3.3	Freeware does not always allow the source code to be accessed and modified. ✓	(1)
4.4		<ul style="list-style-type: none"> • Run an antivirus scan • Toolkit program • Delete the infected file • Format the drive <p style="text-align: right;">(Any 2) ✓✓</p>	(2)
4.5		<ul style="list-style-type: none"> • Higher quality: HDMI enables loss-less transmission and better quality video at low brightness scenes at higher resolutions. • Single cable: Offers a cable solution as there is only a single cable that carries audio, video and controls information • Can be connected directly to TV's/Data projectors <p style="text-align: right;">(Any 2) ✓✓</p>	(2)
4.6		<ul style="list-style-type: none"> • SSD is less likely to get damaged because there are no moving parts • Quieter than a HDD • Not affected by magnetic interference. • SSD has lower power consumption • SSD generates less heat • SSD does not become fragmented <p style="text-align: right;">(Any 2) ✓✓</p>	(2)
4.7	4.7.1	3.6 GHz ✓	(1)
	4.7.2	8 GB ✓	(1)

	4.7.3	<ul style="list-style-type: none"> • Graphics card (video accelerator) • HDD/SSD <p style="text-align: right;">(Any 1) ✓</p>	(1)
4.8	4.8.1	It is a software programme that allows the operating system to communicate ✓ with hardware or peripheral devices ✓	(2)
	4.8.2	The driver program for many devices is pre-loaded as part of the operating system ✓ and is automatically installed when the device is plugged into the computer ✓	(2)
4.9		<ul style="list-style-type: none"> • BYOD refers to a concept where people are allowed to bring and use their own portable devices, ✓ • to access the network. ✓ 	(2)
4.10		OCR/Optical Character Recognition software ✓	(1)
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1	5.1.1	Fibre✓	(1)
	5.1.2	There is no limit on the amount of data that is available for use per month✓	(1)
	5.1.3	<p>TWO benefits/advantages of using cloud computing</p> <ul style="list-style-type: none"> • As long as you have Internet you can access whatever you want anywhere and anytime. (Ubiquity) • Enables collaboration – because data is not limited to a single machine, multiple people can access it at once and work together/sharing documents • The software is always up to date/user does not have to download/install software/applications to access the resources • The server has the ability to run powerful software that requires extensive hardware resources/the ability to increase or decrease in size and power quickly and effectively. • Maintenance and upgrades of the user's hardware – no cost for buying hardware, or repairing computers. <p style="text-align: right;">✓ ✓ (Any 2)</p>	(2)
	5.1.4	<ul style="list-style-type: none"> • Many people are still unaware of digital currencies and bitcoin. • People need to be educated about bitcoin to be able to apply this concept in their lives. • Criminals could use this system for illegal activities • People could get scammed or their accounts could get hacked <p style="text-align: right;">✓ ✓ (Any 2)</p>	(2)
5.2		<ul style="list-style-type: none"> • Create a portable wifi hotspot from the users phone ✓ • Connect the other users to this hotspot ✓ 	(2)
5.3		<ul style="list-style-type: none"> • E-mail/fax-to-email • Web page hosting • Spam filtering <p style="text-align: right;">✓ ✓ (Any 2)</p>	(2)
5.4		<ul style="list-style-type: none"> • Automatically loads a favourite webpage every time the browser is started ✓ 	(1)
5.5	5.5.1	Pop-ups are windows usually of advertisements that appear automatically without your permission when you are on Internet ✓	(1)
	5.5.2	<ul style="list-style-type: none"> • Pose security threats • Irritation/interfere with concentration/interrupts/productivity decreases • Using extra data <p style="text-align: right;">✓ Any 1</p>	(1)
5.6		<ul style="list-style-type: none"> • Some items (clothing) cannot be tried on before purchase – may not be the same as per the advertised item • Cannot transact in cash / needs a bank account • Returns may be difficult • Some products cant be purchased online (haircuts meical visits etc) • Often requires a credit card • Delivery costs. <p style="text-align: right;">✓ ✓ (Any 2)</p>	(2)

[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1	6.1.1	<ul style="list-style-type: none"> • Add an introduction to thank the respondent briefly for completing the questionnaire and tell them what to do with it when it has been completed. • Separate 'fields' should be used for the name and surname of the respondent, as it is sometimes difficult to decide which name is a person's surname and which is their name (e.g. Dean James or James Dean). • No instructions are given for the required format of the date of birth. • A list of courses that the respondent can choose from should rather be given to get more 'accurate' and precise results. • A given set of 'closed' options should be provided to rate the respondent's computer knowledge. This will prevent 'vague' answers that might be difficult to place in a limited set of categories, etc <p style="text-align: right;">✓ ✓ (Any 2)</p>	(2)
	6.1.2	<ul style="list-style-type: none"> • It would save time as the data would be captured immediately. • It would provide potentially more accurate data if the system is suitably designed (e.g. if the system has no fields or pieces of information missing). • The system can be quickly adapted if there is additional data that needs to be captured <p style="text-align: right;">✓ ✓ (Any 2)</p>	(2)
	6.1.3.1	<ul style="list-style-type: none"> • To be able to find or recognise the file more easily • To facilitate file management <p style="text-align: right;">✓ (Any 1)</p>	(1)
	6.1.3.2	So that the contents of the file can be imported into a spreadsheet or database table ✓	(1)
6.2		<ul style="list-style-type: none"> • There's lot of information on internet • Not enough quality control • Information gets outdated • Information is often subjective and one sided/bias • Anyone can post information online even though not a specialist <p style="text-align: right;">✓ ✓ (Any 2)</p>	(2)
6.3		<ul style="list-style-type: none"> • Citation – reference information of a source used ✓ • Footnote – additional information placed at the bottom of the page regarding a specific fact/word/phrase within a document ✓ 	(2)
			[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1	7.1.1	<ul style="list-style-type: none"> • Less printing – cut down on paper, ink. • Less travelling (i.e. more telecommuting) – cut down on vehicle emissions, etc. • Lower (physical) storage and other infrastructure requirements that can have a negative impact on environment, etc. <p style="text-align: right;">(Any 1) ✓</p>	(1)
	7.1.2	<ul style="list-style-type: none"> • Switch off (monitors, devices, chargers, etc.) when not in use. • Use power-saving features ('sleep' and 'hibernation' modes, etc.). • [Accept specific examples for e.g. smartphones:] • Dim screen brightness • Keep screen timeout short • Disable Bluetooth, WiFi, GPS, 3G/4G (when not in use) • Don't leave apps running in the background – close unnecessary ones • Don't use vibrate • Turn off non-essential notifications • Turn off 'push' e-mail – i.e. change setting to 'fetch' e-mail instead • Don't leave phone in sunlight / warm environments (battery runs out sooner) <p style="text-align: right;">(Any 1) ✓</p>	(1)
7.2	7.2.1	<ul style="list-style-type: none"> • Telecommunicating is when people work from their home's and make use of computer technology to communicate with clients and run their business smoothly <p style="text-align: center;">✓</p>	(1)
	7.2.2	<ul style="list-style-type: none"> • Save travelling costs • Save travelling time • Increase in worker productivity • Easier for people who need to be mobile (e.g. sales reps) to keep in touch • Reduces traffic congestion and pollution <p style="text-align: right;">(Any 1) ✓</p>	(1)
7.3	7.3.1	<ul style="list-style-type: none"> • Social engineering in which an individual lies by presenting oneself as someone else in order to obtain privileged data. ✓ 	(1)
	7.3.2	<ul style="list-style-type: none"> • Filtering employees' emails • Providing Awareness programmes to employees • Formulate policy on handling suspected pretexters • Get an Insider Threat Management Solution <p style="text-align: right;">(Any 1) ✓</p>	(1)
7.4	7.4.1	<ul style="list-style-type: none"> • Use a mixture of letters, numbers, and characters. • Use a mixture of uppercase and lowercase characters. • The 'longer' the password the better/Have a minimum of e.g. 8 characters. • Not an easily identifiable item such as a cell phone number. • Do not use personal information such as a birth date, name or surname <p style="text-align: right;">(Any 2) ✓ ✓</p>	(2)

7.5	<p>Clickjacking</p> <ul style="list-style-type: none"> • Clickjacking occurs when a user might go to a website and click on a link to a video, but a malicious link is hidden underneath. • Hackers are able to gather confidential information, get users to take an action online that they normally would not do, or compromise their privacy. <p>Examples:</p> <ul style="list-style-type: none"> • It could trick them into purchasing a product, • enabling a webcam, or • making their private online information public <p><i>(Accept: Installation of malware can occur when a user is clickjacked)</i></p> <p style="text-align: right;">✓ ✓ (Explanation = 1 mark + Example = 1 mark)</p>	(2)
		[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1		When this option is used, the specified paragraph will always appear at the top of a new page ✓ – irrespective of whether the previous page was filled or not ✓	(2)
8.2		=Upper✓ (Left✓ (C2;3))&Left(B2;1)&Right✓ (B2;1)&Right(D2;1) Concatenate may be also used	(3)
8.3	8.3.1	Only dates after✓ the 2 February 2020 will be accepted. ✓	(2)
8.4		Face after the word font is missing. ✓	(1)
8.5		<ul style="list-style-type: none">• Mark watched more movies in the Comedy genre.• Sarah watch more Horror movies.• Sarah watch the most amount of movies.• Any other valid observation. <p>(Any 2) ✓✓</p>	(2)
8.6		If it not done, then it will show only one person’s details ✓on all the labels. ✓	(2)
8.7		<ul style="list-style-type: none">• <u>Td</u>: indicates table data – information in one cell. ✓• <u>Th</u>: text within “th” is indicative of the table heading ✓	(2)
8.8		<ul style="list-style-type: none">• Styles not used for the headings.• Table that contain empty rows.• Alternative text not used for diagrams or tables.• Any other issue regarding formatting of the document <p>(Any 1) ✓</p>	(1)

[15]**TOTAL SECTION B: 75**

SECTION C

QUESTION 9: INTEGRATED SCENARIO			
9.1	9.1.1	Web based application refers to any program that is accessed over a network using HTTP (Hyper Text Transfer Protocol). ✓	(1)
	9.1.2	Gmail Hotmail Yahoo mail AOL mail Fast mail Gawab GMX Webmail Inbox.com Lavabit Mail.com Any other web based mail server (Any 2) ✓✓	(2)
	9.1.3	The gap between those who have ready access to computers and the Internet (ICT), and those who do not. ✓ Learners that do not have access will be disadvantaged ✓	(2)
	9.1.4	Advantages of Web based Applications: Reduce business costs - less time spent talking to customers over the phone (?). The latest version of the program is always available Eliminate printed materials Allow users to update their own details. Centralised data is secure and easy to backup. (Any 1) ✓ Disadvantages of Web-based Applications: - Internet access is required. - The software has the inclination to run slower than software that is stored on an actual local hard drive. – speed is dependent on the internet connectivity. - Server goes down it will prevent all its users from accessing the application. (Any 1) ✓	(2)
9.2	9.2.1	Technology convergence is when different forms of technologies cohabit in a single device. ✓	(1)
	9.2.2	Technology Crashes, then all the information and applications are lost. Loss of Memory due to too many applications on one device. Safety, hacking through applications become easier, etc.	(1)

		(Any 1) ✓	
9.3	9.3.1	Can speed up Internet access/Caches web pages Can be used to mask your IP address/Can 'surf' anonymously Can be used to monitor/restrict/control access to websites ✓✓(Any two)	(2)
	9.3.2	Use the word 'video' in the search string. ✓ Set the search tab of the search engine to video✓	(2)
9.4	9.4.1	Malware is the collective name for a number of malicious software variants, including viruses, ransomware and spyware. ✓	(1)
9.5	9.5.1	Phishing is a fraudulent attempt, usually made through email, to steal your personal information. - Examples: Phishing email / Phishing website Generic greeting. Phishing emails are usually sent in large batches. ... Forged link. ... Requests personal information. ... Sense of urgency. Explanation✓ + (Any 1 example) ✓	(2)
	9.5.2	Pharming is a cyberattack intended to redirect a website's traffic to another, fake site. Pharming can be conducted either by changing the hosts file on a victim's computer or by exploitation of a vulnerability in DNS server software. ✓ For example, a user may create a web page that appears to be for a specific bank, requesting a username and password for login. ✓	(2)
9.6	9.6.1	Key logger is a function which records keystrokes on a computer. ✓ Key loggers can be installed through webpage script. This is done by exploiting a vulnerable browser and the key logger is launched when the user visits the malicious website. A Key logger can exploit an infected system and is sometimes capable to download and install other malware to the system. It can be installed via hacked/pirated software (✓ for definition + ✓ for any explanation of installation)	(2)

9.7	9.7.1	<p>Online Learning Accommodates Everyone's Needs. Lectures Can Be Taken Any Number of Times. Offers Access to Updated Content. Quick Delivery of Lessons. Scalability. Consistency. Reduced Costs. Effectiveness. Learner can work at his/her own pace</p> <p style="text-align: right;">(Any 2) ✓✓</p>	(2)
9.8	9.8.1	<p>Downloading vs streaming a video</p> <p>Downloading a file or media means that it is downloaded from the Internet and saved on your device ✓ whereas streaming a file is viewed in real-time on your device. ✓</p>	(2)
	9.8.2	<p>QR code✓</p>	(1)
		[25]	

QUESTION 10: INTEGRATED SCENARIO			
10.1		<ul style="list-style-type: none"> • Wireless connectivity to internet • Portability • Can work on battery life. <p style="text-align: right;">(Any 2)✓✓</p>	(2)
10.2	10.2.1	<ul style="list-style-type: none"> • More intuitive to use • No extra input devices needed • The on-screen keyboard can be changed as needed, etc. <p style="text-align: right;">(Any 2)✓✓</p>	(2)
	10.2.2	<ul style="list-style-type: none"> • Pinch/Pinch in✓ 	(1)
10.3		<ul style="list-style-type: none"> • Facial recognition • Fingerprint • Iris/retinal scan • Voice recognition • Card with biometric data used in the card reader <p style="text-align: right;">(Any 2)✓✓</p>	(2)
10.4		<ul style="list-style-type: none"> • Lock his office when he is not there • Lock the computer in a safe when not being used • Using a cable lock • Activate alarm/motion sensors when he is not in the office • Security guards, etc. <p style="text-align: right;">(Any 2)✓✓</p>	(2)
10.5		<ul style="list-style-type: none"> • Performance of the laptop may be affected • System restore cannot backup desktop files • May be difficult to locate the file • May run out of desktop space <p style="text-align: right;">(Any 2)✓✓</p>	(2)
10.6	10.6.1	<ul style="list-style-type: none"> • Hotspot. -a public area✓ where there is Wifi connectivity✓ 	(2)
	10.6.2	<ul style="list-style-type: none"> • There may be software compatibility issues • Problems with hardware compatibility • Need for more expertise to support different devices • Greater concern for theft/loss of confidential information • Potential misuse of bandwidth • Potential spread of viruses • Slowing down the network <p style="text-align: right;">(Any 2)✓✓</p>	(2)

10.7	10.7.1	<ul style="list-style-type: none"> • LAN✓ 	(1)
	10.7.2	<ul style="list-style-type: none"> • Communicate using emails • Use recycled paper • Print multiple pages on a single sheet of paper • Reduce font size • Read news online rather than print media <p style="text-align: right;">(Any 2)✓✓</p>	(2)
10.8		<ul style="list-style-type: none"> • Interact with reader comments • Use catchy titles • Update content regularly • Make sure content is relevant • Provide RSS feed • Use relevant pictures and videos <p style="text-align: right;">(Any 2)✓✓</p>	(2)
10.9		<ul style="list-style-type: none"> • The file/folder permissions have been set to read-only • The file has been opened from a read-only media/location/File has been copied from a CD • Another user might already have opened the same file on a network <p style="text-align: right;">(Any 2)✓✓</p>	(2)
10.10		<ul style="list-style-type: none"> • Do not subscribe to too many websites for e-mail updates/Unsubscribe to mailing lists, websites • Use e-mail rules to organise/restrict e-mails • Decide on what type of information is important and what can be ignored • Store information in a logical structure, etc. <p style="text-align: right;">(Any 2)✓✓</p>	(2)
10.11		<ul style="list-style-type: none"> • Lock/protect specific cell • Protect the document <p style="text-align: right;">(Any 1) ✓</p>	(1)
			[25]
	TOTAL:50 MARKS		

TOTAL SECTION C: 50

GRAND TOTAL : 150