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Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE/ NATIONAL SENIOR CERTIFICATE

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY

NOVEMBER 2020

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 19 pages.

SUGGESTIONS AND RECOMMENDATIONS TO MARKERS

- Revisit the questions and the marking guideline frequently during the marking session.
- It is advisable to read the question frequently (and re-read) together with the candidate's response to check that it correlates, so that you are not misled by the candidate's statements/answers.
- Be careful not to focus on keywords or general statements, but rather read the entire answer. If in doubt, read the entire answer and then the question paper and the marking guideline.
 - Ask yourself or your senior marker if the response could 'fit' into the marking guideline before allocating the correct marks to the candidate.
 - Accept correct answers that are expressed differently, e.g. the marking guideline states 'slow' and the learner responds with 'not fast'.
- Beware of overlapping answers to a specific question. In general, ONE mark is awarded per fact.
- Do not choose answers on the candidate's behalf. Where a question requires a candidate to LIST, NAME or STATE: mark the first number of instances required, e.g. the first TWO facts if the candidate presents a list of FIVE facts and only TWO facts were required, even if presented in paragraph format.
- Questions requiring longer answers must be regarded as a single unit. Marks can be awarded if correct statements are found anywhere in the paragraph.

SECTION A

QUESTION 1: MULTIPLE-CHOICE

1.1	D	✓	1
1.2	A	✓	1
1.3	C	✓	1
1.4	D	✓	1
1.5	B	✓	1
1.6	A	✓	1
1.7	B	✓	1
1.8	C	✓	1
1.9	A	✓	1
1.10	B	✓	1
Total: [10]			

QUESTION 2: MATCHING ITEMS

2.1	P	✓	1
2.2	Q	✓	1
2.3	H	✓	1
2.4	A	✓	1
2.5	S	✓	1
2.6	R	✓	1
2.7	N	✓	1
2.8	T	✓	1
2.9	E	✓	1
2.10	F	✓	1
Total: [10]			

QUESTION 3: TRUE/FALSE ITEMS

(Note to marker: In Question 3.2, 3.4, and 3.5 candidates need to provide both the word 'False' and the correct term, e.g. motherboard, in order to get the mark.)

3.1	True ✓	1
3.2	False, Single user ✓	1
3.3	True □	1
3.4	False, Spreadsheet □/(Microsoft) Excel	1
3.5	False, (Digital) migration □	1
		[5]

TOTAL SECTION A: [25]

SECTION B**QUESTION 4: SYSTEMS TECHNOLOGIES**

4.1.1	Software category ● Application software □ (Accept Proprietary software)	1
4.1.2	TWO reasons for indicating screen resolution and screen size (1) Maximum image/video quality of the screen (2) Size of the screen does not necessarily indicate the clarity of the image/Large screens do not always have high resolutions (3) So that the purchaser can make informed decisions ✓✓ (Any two)	2
4.1.3	TWO reasons for not having an optical drive in a newer notebook computer (1) Optical drive is <u>older technology</u> and used less frequently for data storage (Backup) (2) Music, videos and software are available for <u>download</u> from the internet or <u>shared</u> via social media/flash drives (3) Computer can be made smaller/Not enough <u>space</u> to include an optical drive (4) To keep the selling <u>price</u> down – one less device (5) Can reduce the <u>weight</u> of the computer/Can be made lighter (6) Battery can last longer due to one less device/Reduce <u>power</u> requirements ✓✓ (Any two)	2
4.1.4	ONE reason why an SSD is specified for this computer (1) To improve the overall performance of the computer/Faster data access (2) Reduced noise levels (3) Reduced power requirements (4) Reduced weight improves portability (5) Less prone to physical damage/More durable ✓ (Any one)	1
4.1.5	TWO features of a USB port that make it popular (1) Wide variety of devices can be connected via USB (2) Compatible with older devices (3) Power source for devices (4) Enables plug and play technologies/devices (5) Supports data transfer (6) USB devices can be swapped while the computer is switched on/Hot swapping can be done (7) Small size facilitates mobility of devices ✓✓ (Any two)	2

4.1.6	<p>Why a VGA port is not expected for this computer</p> <ul style="list-style-type: none"> ● Does not support high-definition display □/Does not support sound/Older analogue technology - not digital <p>Other expected port</p> <ul style="list-style-type: none"> ● HDMI □/DisplayPort 	2	13
4.1.7	<p>TWO specifications to set up biometric security</p> <ol style="list-style-type: none"> (1) Webcam □ (2) Microphone □ 	2	
4.1.8	<p>Specification affecting performance not listed in the advert</p> <ul style="list-style-type: none"> ● RAM □ 	1	
4.2	<p>TWO benefits of using online banking</p> <ol style="list-style-type: none"> (1) Accessible from any location with internet/Open 24/7 (2) Save on transport/transaction costs (3) No queues/Saves time (4) Not exposed to physical crime (5) Most banking activities can be done without visiting a bank (6) Banking can be done in the privacy of your own environment (7) No need for human contact/COVID-19 compliant <p>✓✓ (Any two)</p>		2
4.3	<p>ONE way to ensure document compatibility with older software</p> <ul style="list-style-type: none"> ● Save in an older file format□/Use compatibility option 		1
4.4	<p>TWO reasons for buying a desktop rather than a notebook computer</p> <ol style="list-style-type: none"> (1) Design allows for easier upgrading/maintenance/adding more components (2) Better performance for graphics processing/gaming (3) More difficult to steal (4) Can accommodate a larger screen (5) No need for mobility (6) Cheaper than a similarly configured notebook <p>✓✓ (Any two)</p>		2

4.5	<p><i>TWO reasons for starting up an operating system in safe mode</i></p> <p>(1) A new driver/hardware/software/update that was installed is faulty (2) To diagnose/resolve/troubleshoot problems (3) Virus infection (4) After a power failure</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
4.6	<p><i>TWO ways to resolve a working printer that is not printing, but is properly connected</i></p> <p>(1) Restart the printer (2) Check that the correct printer was selected (3) Switch from offline to online mode (4) Delete jobs that may be stuck in the print queue (5) Clear printer memory (6) Add paper to the printer/Correct the paper size (7) Fix paper jam (8) Add ink/toner/Check printheads (9) Check for faulty printer cable/wireless connection (10) Re-install the printer driver</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
4.7	<p><i>Name of utility program that rearranges fragmented parts of files</i></p> <p>● Disk Defragmenter/Optimize Drive □ (Accept any reference to defragmenting or optimising)</p>		1
4.8	<p><i>TWO reasons for using the Task Scheduler utility</i></p> <p>(1) Schedule/Set time for important programs to get regular updates (2) Some resource intensive programs can be scheduled to run during off-peak times (3) Schedule housekeeping tasks, e.g. backups, etc.</p> <p style="text-align: right;">□□ (Any two)</p>		2
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1	Main purpose of an ISP ● To provide internet access □ (<i>Accept Internet Service Provider</i>)		1
5.2	TWO functions of a router in a home network (1) Connects a computer to the internet/Connects two networks to each other (<i>Accept reference to data</i>) (2) Create a network/Has the functionality of a switch (3) Offers certain services of a server for network connectivity/It acts as a server (4) Provides security to the network, e.g. a firewall ✓✓ (Any two)		2
5.3	TWO advantages of a fibre connection over ADSL (1) Higher speed/bandwidth (2) Less attenuation/Less signal loss over a long distance/Less prone to interference (3) Usually a more stable connection/Less prone to breakdown (4) Lower latency/Less delay/Lower ping (5) Newer technologies (6) Less prone to cable theft ✓✓ (Any two)		2
5.4	Reason for an unshaped connection instead of a shaped connection ● Line speed is usually not affected □ (ISP does not prioritise only certain services)		1
5.5	TWO advantages of editing documents online instead of using stand-alone applications (1) Changes are saved instantly/automatically/Documents are always updated (2) Online software is the latest version/updated (3) Documents can be accessed from any computer with internet access (4) No local storage is used/Saves hard drive space (5) Documents will not be lost if there is a power failure (6) Many users can work on a document simultaneously ✓✓ (Any two)		2
5.6	TWO disadvantages of using browser plug-ins and extensions (1) Could introduce security vulnerabilities/malware (2) Possible privacy issues (3) Could reduce system performance/Slow down the computer ✓✓ (Any two)		2

5.7	Reason why a 'Page Not Found' or 'Not Found' error message occurs on a website (1) The page was removed from the website/Page does not exist (2) The website is undergoing maintenance/Website/Server is down (3) Website could have been hacked (4) URL was typed incorrectly ✓ (Any one)		1
5.8.1	Internet access that is offered in public places ● Wi-Fi □ /Hotspot	1	2
5.8.2	ONE problem with free internet access at public places (excepting security) (1) Many people connected could slow down the line speed (2) Time/Data could be limited (3) Possible limitations on sites/services that are available ✓ (Any one)	1	
5.9	Main function of a firewall ● To restrict unauthorised access to a network/computer □		1
5.10	How to access a company network securely from a remote location ● Use a VPN □/Remote Desktop Connection/Team Viewer/AnyDesk (Accept a reference to using a password to log in to their profile)		1
			[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1	<p><i>TWO reasons for a task definition in the PAT</i></p> <ol style="list-style-type: none"> (1) Explain the problem/purpose of research (2) Gives guidance for the research (3) What information is required (4) To determine the scope of the project (5) How to go about collecting the information (6) How the various applications will be used in the research (7) To describe the target audience to present the information to <p>✓✓ (Any two)</p>		2
6.2	<p><i>ONE way to avoid getting many different or unrelated results when searching the internet</i></p> <ol style="list-style-type: none"> (1) Use specific words or phrases in the search (2) Refine the search string using the (+) or (-) operators to include or exclude specific words/phrases (3) Use advanced search options of the browser (4) Signing into a Google account may improve the search results tailored for you <p>✓ (Any one)</p>		1
6.3.1	<p><i>TWO types/formats of answers that would return values to be exported to a .csv file</i></p> <ol style="list-style-type: none"> (1) Countable results (2) Numeric values (3) Currencies/Financial values (4) Boolean/Yes or No values/Radio buttons/Check boxes (5) Multiple choice options (6) Statistical values (7) Single text values, e.g. names and surnames, etc. <p>✓✓ (Any two)</p> <p>(Accept any actual examples of types or formats, e.g. age, dates, etc.)</p>	2	3
6.3.2	<p><i>ONE way to present data visually in a spreadsheet</i></p> <ol style="list-style-type: none"> (1) Charts/Graphs/Spark Lines (2) Conditional formatting (3) Pivot tables/Tables (4) Add-ins such as Power Maps (3D visualisations) <p>✓ (Any one)</p>	1	
6.4	<p><i>Why biased information should NOT be used in research</i></p> <ol style="list-style-type: none"> (1) The results would not give a balanced point of view (2) It could lead to unreliable/incorrect/harmful/unwise/discriminatory decisions/conclusions (3) Findings/recommendations may wrongly promote the interests of a specific group <p>✓✓ (Any two)</p>		2
6.5	<p><i>TWO ways in which database queries are helpful in analysis</i></p> <ol style="list-style-type: none"> (1) Specific information can be extracted based on certain criteria □ (2) Calculations can be done □ 		2
			[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1	<p>Online harassment situation</p> <ol style="list-style-type: none"> (1) Somebody makes rude or insulting posts about you (2) The posting of sensitive pictures/videos about you (3) Making threats against you or your loved ones (4) Inciting third parties to threaten or insult you (5) Repeated unsolicited contact/asking questions/making suggestions <p style="text-align: right;">✓ (Any one)</p> <p><i>(Note to marker: Accept any reasonable response that refers to online bullying, ridiculing or intimidation.)</i></p>		1
7.2	<p>TWO ways to prevent RSI to hands and wrists</p> <ol style="list-style-type: none"> (1) Take regular breaks (2) Use 'Speech to Text' software/Use predictive text (3) Do appropriate exercises to relieve tension (4) Use ergonomically designed keyboards/devices (5) Wrist support equipment (6) Practice good typing habits/posture that does not strain your wrists <p style="text-align: right;">✓✓ (Any two)</p>		2
7.3	<p>TWO ways to avoid becoming a victim of e-mail phishing</p> <ol style="list-style-type: none"> (1) Do not respond to unknown e-mail (2) Do not give out your personal information via e-mail (3) Do not click on any links in unknown/suspicious e-mails (4) Use a spam filter/antivirus program (5) Do not do personal tasks on public computers, e.g. online banking <p style="text-align: right;">✓✓ (Any two)</p>		2
7.4	<p>TWO problems associated with driverless/self-driving cars</p> <ol style="list-style-type: none"> (1) Software bugs/corruptions could lead to the car not functioning safely (2) Cars can be hacked and remotely controlled (3) Weather conditions may impair the functioning of the sensors (4) No internet/GPS connection could result in inaccurate routes, poor traffic management, etc. <p style="text-align: right;">✓✓ (Any two)</p> <p><i>(Notes to marker:</i></p> <ul style="list-style-type: none"> ● <i>Accept any valid response related to problems associated with driverless/self-driving cars.</i> ● <i>Do not accept any responses relating to mechanical problems/failure.)</i> 		2

7.5	ONE disadvantage of crowd funding for the investor (1) Project that you contributed towards might never be completed (2) Product/Business may not return a profit (3) Investors could be scammed ✓ (Any one)		1
7.6	TWO disadvantages of <u>free</u> cloud storage services (1) Limited storage space/Service provider could decrease the storage space (2) Limited features/support/access to all services (3) Less privacy/Users' personal details may be shared with third parties ✓✓ (Any two)		2
			[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1	<p><i>How to rectify characters that appear as symbols</i></p> <p>(1) Change the font/Change symbols font to text (2) Use the Format Painter to replicate the font from where it is correct</p> <p style="text-align: right;">✓ (Any one)</p>		1
8.2	<p><i>ONE setting that can be adjusted by using the ruler option</i></p> <p>(1) Margin settings (<i>Accept page width/height</i>) (2) Tab settings/Tab stop positions (3) Paragraph indentation (4) Header/footer margins (5) Table/cell/column width</p> <p style="text-align: right;">✓ (Any one)</p>		1
8.3	<p><i>References: 'Manage sources'/'Insert citation'</i></p> <p>● Use the Manage Sources option to insert the reference source □/ Add a reference source via the Insert Citation option</p>		1
8.4	<p><i>A spreadsheet option to print only selected cell ranges</i></p> <p>(1) Use the Set Print Area option (2) Print selection in the print settings (3) Select print area in the Page Break Preview</p> <p style="text-align: right;">□ (Any one)</p>		1
8.5	<p><i>How a pasted graph in a word processor is updated</i></p> <p>● Use the (Paste) link □ option when pasting the graph/It has a connection/link to the original data/Use the second option on the Paste Special dialogue</p>		1
8.6	<p><i>Reason for spreadsheet columns not displaying</i></p> <p>● Column C and D has been set/dragged to a narrow width ● Column C and D are hidden/Column width set to zero</p> <p style="text-align: right;">□ (Any one)</p>		1
8.7	<p><i>Circular reference in a spreadsheet</i></p> <p>● When a formula references/indexes the cell that it is in □/When a formula points to itself</p>		1
8.8	<p><i>ONE way to make the LOOKUP function work</i></p> <p>(1) Change the VLOOKUP to an HLOOKUP (2) Transpose the data in the Lookup Table (3) Use the XLOOKUP function with the correct parameters</p> <p style="text-align: right;">✓ (Any one)</p>		1

8.9	<p><i>TWO reasons to use a <u>text box</u> in a database form</i></p> <p>(1) To capture/edit data (<i>Accept specific examples</i>) (2) To enter a formula/To display the result of a formula (3) To display the contents of a field (4) To restrict/limit/control what can be entered</p> <p>□□ (Any two)</p>		2
8.10	<p><i>TWO reasons for 'Enter Parameter Value' error message in a query</i></p> <p>(1) The Age field does not exist (2) Incorrect spelling of the field name, i.e. Age (3) Criteria in the query requires a parameter value</p> <p>✓✓ (Any two)</p>		2
8.11	<p><i>How to display the HTML code of a web page</i></p> <p>(1) Use the View Source feature of the web browser/Ctrl+U (2) Download the web page from the internet and then open in a text editor/web development tool (3) Use the Inspect option/F12</p> <p>✓ (Any one)</p>		1
8.12	<p><i>TWO hints to prevent errors when coding in HTML</i></p> <p>(1) Use the text editor (Notepad++) feature that highlights the opening and closing tags to ensure tags are closed where necessary (2) Use indentation for different segments (3) Use descriptive comments where necessary (4) Use the Auto-Completion feature of the HTML editor for tags (5) Use colour coding options for reserved words (6) Regularly run code in the browser to troubleshoot (7) Use the HTML tag sheet (8) Ask an expert or 'google' the problem</p> <p>✓✓ (Any two)</p>		2
			[15]

TOTAL SECTION B: [75]

SECTION C: INTEGRATED SCENARIO**QUESTION 9**

9.1.1	<p><i>TWO data projector features, other than resolution</i></p> <ul style="list-style-type: none"> (1) Lumens/Brightness (2) Lamp type (3) Lamp life (4) Picture quality, e.g. Contrast ratio/Colour depth, etc. (5) Aspect ratio (6) Remote control (7) Connection options/Compatibility with existing devices (8) Image inversion/rotation/keystone (9) Refresh rates/Response time (10) Zooming options/Lens adjustment (11) Short or long throw (12) Portability/Physical size (13) Built-in speaker/microphone, etc. <p style="text-align: right;">✓✓ (Any two)</p>	2	
9.1.2	<p><i>Reason why a dedicated graphics card is NOT required</i></p> <ul style="list-style-type: none"> ● Showing movies is not graphics intensive □/Built-in graphics is sufficient for playing video 	1	3
9.2	<p><i>ONE reason for NOT using a mouse with a notebook computer</i></p> <ul style="list-style-type: none"> (1) Notebook already has a trackpad/touch pad/pointing stick/trackpoint (<i>Accept descriptions</i>) (2) Notebook has a touch screen (3) External mouse may drain the battery faster <p style="text-align: right;">□ (Any one)</p>		1

9.3.1	Software used to watch movies <ul style="list-style-type: none">● Movie/Media/Video player □/Browser <p>(Note to marker: Accept any valid example of media players, e.g. VLC media player, iTunes, WinAmp, MediaMonkey, foobar2000, AIMP, etc.)</p>	1											
9.3.2	How bandwidth influences the streaming of movies <ul style="list-style-type: none">● The higher the bandwidth the more data can be transferred faster □● No interruptions/buffering □ <p>OR</p> <ul style="list-style-type: none">● Movie will be streamed in variable quality● Dependent on bandwidth <p>OR</p> <ul style="list-style-type: none">● The lower the bandwidth the slower the data will be transferred,● The movie may not stream continuously/may experience buffering	2											
9.3.3	TWO limitations of a 4G cellular connection for streaming a movie <p>(1) Expensive because of high data usage □/Data limit (Cap) may be depleted very quickly which will increase the data cost</p> <p>(2) Weak signal strength could cause buffering of the audio/video □</p>	2	5										
9.4	TWO risks of the internet and preventions <table border="1"><thead><tr><th>INTERNET RISK</th><th>PREVENTION</th></tr></thead><tbody><tr><td>(1) Malware</td><td>(1) Install antivirus software, keep antivirus software updated</td></tr><tr><td>(2) Unauthorised access/Hacking</td><td>(2) Use a firewall/Activate the firewall/Use a strong password</td></tr><tr><td>(3) Cyber attacks/Vulnerabilities</td><td>(3) Verify sender, check safety of websites, change passwords regularly, keep system updated</td></tr><tr><td>(4) Phishing/Social Engineering</td><td>(4) Do not give out personal details, do not click on suspicious links</td></tr></tbody></table> <p>✓✓ (Any two internet risks)</p> <p>✓✓ (Any two ways of preventing attacks)</p> <p>(Notes to marker:</p> <ul style="list-style-type: none">● Accept only one example of each risk.● Preventative measure must be related to the risk● Accept any valid prevention that is well explained)	INTERNET RISK	PREVENTION	(1) Malware	(1) Install antivirus software, keep antivirus software updated	(2) Unauthorised access/Hacking	(2) Use a firewall/Activate the firewall/Use a strong password	(3) Cyber attacks/Vulnerabilities	(3) Verify sender, check safety of websites, change passwords regularly, keep system updated	(4) Phishing/Social Engineering	(4) Do not give out personal details, do not click on suspicious links		4
INTERNET RISK	PREVENTION												
(1) Malware	(1) Install antivirus software, keep antivirus software updated												
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(4) Phishing/Social Engineering	(4) Do not give out personal details, do not click on suspicious links												

9.5.1	Steps to take before creating a Table of Contents ● Apply appropriate styles □ to (different levels of) headings □	2	6
9.5.2	TWO locations that a hyperlink can point to (1) Hyperlink can point to another place on the same page□/bookmark (2) Hyperlink can point to another page/website/e-mail address/local document□ (Accept any two locations inside/outside the report)	2	
9.5.3	TWO advantages of mail merge (1) Reports can be automatically customised for many individuals (2) You do not have to retype the report to every recipient/Saves time (3) Edit recipient list (4) No need to type in the addresses of individuals as it will be automatically extracted from a spreadsheet/database (5) Format/Design of the merged document can be done at once ✓✓ (Any two)	2	
9.6.1	TWO benefits of publishing an online form on the school's blog (1) Efficient way to reach a target audience (2) No link needs to be sent (3) Feedback can be received quickly/within a short time frame (4) Feedback can be summarised electronically (5) Supports green computing, e.g. saves paper/ink □□ (Any two)	2	6
9.6.2	TWO web-based spreadsheet programs (1) (Google) Sheets (2) (Microsoft) Excel in Office 365 (3) Numbers, etc. (Accept any other valid web-based spreadsheet program) □□ (Any two)	2	
9.6.3	TWO reasons why the COUNTIF function is incorrect (1) Missing separator/comma/semi-colon/delimiter (2) COUNTIF cannot check if all three ratings in each row are greater than 7/Incorrect function/COUNTIFS not used (3) The condition should be greater than 7 only (4) Range/s should be a single row at a time ✓✓ (Any two)	2	6
			[25]

QUESTION 10

10.1.1	<i>The concept of GPS</i> <ul style="list-style-type: none"> ● GPS is a system that receives information from satellites □ to calculate/triangulate an exact geographical location □/provide directions 	2	
10.1.2	<i>E-mail feature to send numerous invitations simultaneously</i> <ul style="list-style-type: none"> ● Distribution/Address/Mailing list □/Contact/Hangouts/Google/Yahoo group 	1	
10.1.3	<i>Type of application to shorten a link address</i> <ul style="list-style-type: none"> ● URL shortener □ 	1	
10.1.4	<i>Database object to print a summary</i> <ul style="list-style-type: none"> ● Report □ (<i>Accept Pivot/Totals query</i>) 	1	
10.1.5	<i>TWO methods to ensure confidentiality of the guests in the database</i> <ol style="list-style-type: none"> (1) Use encryption/password on the file/computer (2) Use a firewall on the computer (3) Keep the computer offline (4) Prevent access to the computer room <p style="text-align: right;">□□ (Any two)</p>	2	
			7

10.2.1	<p><i>TWO reasons for NOT having social media accounts</i></p> <ol style="list-style-type: none"> (1) Social media can be a distraction/can waste time (2) People may become addicted to social media (3) People may be afraid of the risks, e.g. being hacked (4) People may feel vulnerable because of cyberbullying/cyberstalking/Not being sure of identity of others that are online (5) People may not be familiar/do not know how to use social media (6) Social media may promote inappropriate relationships (7) May cause emotional distress (8) People want to maintain their privacy (9) Employers/Family/Friends may view certain past pictures or messages negatively <p style="text-align: right;">□□ (Any two)</p>	2	
10.2.2	<p><i>TWO guidelines in a school's social media policy</i></p> <ol style="list-style-type: none"> (1) Post only appropriate school-related information/Do not post unauthorised school related information (2) Do not post information that would bring the school into disrepute/Do not post rude comments on social media (3) Do not post private information that could harm/hurt others (4) Do not use SMS or incorrect language (slang) (5) Obtain permission before posting/tagging pictures of people (6) No social media during school hours/No cyberslacking (7) Punishment/Repercussions if guidelines are ignored <p style="text-align: right;">□□ (Any two)</p>	2	
10.2.3	<p><i>TWO ways to locate people on social media</i></p> <ol style="list-style-type: none"> (1) Use a search engine to search for names of people (2) Search/Check their user profiles on social media (3) Contact with friends of people you are searching for/Post on social media for anyone who may know the people (4) Check for tags/likes/location information on photos/postings <p style="text-align: right;">✓✓ (Any two)</p>	2	6
10.3.1	<p><i>TWO technologies (not biometric) used to identify people</i></p> <ol style="list-style-type: none"> (1) QR/Bar codes (2) RFID tags (3) Enter PIN on keypad (4) NFC on smartphones <p style="text-align: right;">□□ (Any two)</p>	2	4
10.3.2	<p><i>TWO reasons why a tablet is more suitable to manage meal choices</i></p> <ol style="list-style-type: none"> (1) Orders and feedback are sent immediately to/from a central system (2) Fewer wrong orders/Fewer errors/No illegible handwriting (3) Tablet view can be adjusted for people with low vision (4) When food items are no longer available, they can automatically be removed from the electronic menu/No reprinting needed <p style="text-align: right;">□□ (Any two)</p>	2	

10.4	<p><i>TWO differences between augmented reality and virtual reality</i></p> <table><tr><th>Augmented reality (AR)</th><th>Virtual reality (VR)</th></tr><tr><td>(1) AR is the real world in real time □</td><td>VR is a simulated world</td></tr><tr><td>(2) Layers added to real world□/ Enhanced reality using technology/Does not require head gear</td><td>Extra layers not required/Tech- nology used to create simulation/Requires head gear</td></tr></table> <p>(Note: <i>Marks cannot be allocated for two answers in the same row)</i></p>	Augmented reality (AR)	Virtual reality (VR)	(1) AR is the real world in real time □	VR is a simulated world	(2) Layers added to real world□/ Enhanced reality using technology/Does not require head gear	Extra layers not required/Tech- nology used to create simulation/Requires head gear		2
Augmented reality (AR)	Virtual reality (VR)								
(1) AR is the real world in real time □	VR is a simulated world								
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10.5	<p><i>Internet of Things (IoT)</i></p> <p>● All sorts of appliances/devices/objects □ connected to one another via the internet □</p>		2						
10.6.1	<p><i>TWO advantages of transferring data to a computer via bluetooth</i></p> <p>(1) No clutter of cables/Easier to manage (2) You do not have to be very close to the computer (3) Less time consuming as multiple guests will be able to transfer data at the same time</p> <p>✓✓ (Any two)</p>	2	4						
10.6.2	<p><i>ONE way to reduce the size of the PowerPoint presentation</i></p> <p>(1) Reduce resolution of the photographs (2) Crop/Snip the pictures (3) Change the picture format/Compress picture</p> <p>□ (Any one)</p>	1							
10.6.3	<p><i>Alternative to cloud storage (No internet access)</i></p> <p>● Flash drive □/CD or DVD/External hard drive/SD Card/Handout</p>	1							
			[25]						

TOTAL SECTION C: [50]

GRAND TOTAL: [150]