



# basic education

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Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## **SENIOR CERTIFICATE EXAMINATIONS**

**COMPUTER APPLICATIONS TECHNOLOGY P2**

**2018**

**MARKS: 150**

**TIME: 3 hours**

**This question paper consists of 16 pages.**

## **INSTRUCTIONS AND INFORMATION**

1. This question paper consists of:  
  
SECTION A: 25 marks  
SECTION B: 75 marks  
SECTION C: 50 marks
2. Answer ALL the questions.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. Do NOT write in the right-hand margin of the ANSWER BOOK.
6. Leave a line after EACH subquestion.
7. In general, a mark is allocated per fact. A 2-mark question would therefore require TWO facts, etc.
8. Write neatly and legibly.

**SECTION A****QUESTION 1: MULTIPLE-CHOICE QUESTIONS**

Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (1.1–1.10) in the ANSWER BOOK, for example 1.11 D.

- 1.1 An HDD is used in a ...  
A phablet.  
B desktop computer.  
C mobile phone.  
D tablet. (1)
- 1.2 A spreadsheet error where the function is spelt incorrectly is called a ...  
A value error (#VALUE!).  
B reference error (#REF!).  
C division by zero error (#DIV/0!).  
D name error (#NAME?). (1)
- 1.3 Which ONE of the following terms does NOT logically belong with the other terms?  
A Spyware  
B Shareware  
C Worm  
D Trojan (1)
- 1.4 The relational operator <> is used to ... a value.  
A exclude  
B include  
C decrease  
D increase (1)
- 1.5 A wireless keyboard can NOT be connected to a computer using a/an ...  
A infrared adapter.  
B Bluetooth adapter.  
C 3G adapter.  
D Wi-Fi adapter. (1)
- 1.6 Message rules in e-mails are used to ...  
A group related messages.  
B respond to messages.  
C create folders for messages.  
D save attachments in a folder. (1)

1.7 'Read-only' and 'Hidden' are examples of file ...

- A extensions.
- B sizes.
- C attributes.
- D names.

(1)

1.8 A comment in HTML code will appear ... when the web page is displayed in the browser.

- A as a title
- B in brackets
- C after all the tags
- D nowhere

(1)

1.9 The letters a/b/g/n refer to data transmission over a/an ... connection.

- A ADSL
- B Wi-Fi
- C 3G
- D Fibre

(1)

1.10 What would the result be if the formula =ROUNDDOWN(B2-A2,0) was used in cell C2 below?

	A	B	C
1	Distance travelled	Total distance	Remaining distance
2	4.50	20.00	

- A 15.5
- B 16
- C 15
- D 14.5

(1)

**[10]**

**QUESTION 2: MATCHING ITEMS**

Choose a term/concept from COLUMN B that matches the description in COLUMN A. Write only the letter (A–T) next to the question number (2.1–2.10) in the ANSWER BOOK, for example 2.11 U.

COLUMN A		COLUMN B	
2.1	An aspect of web design that refers to moving between pages in a website	A	hoax
		B	AUP
2.2	A legal agreement between a software author and a user	C	style
		D	RSI
2.3	An optical storage medium with a capacity larger than that of a DVD	E	layout
		F	green computing
2.4	An audio output device	G	microphone
		H	intellectual property
2.5	A type of wireless data transfer technology that can be used to stream high definition video content	I	NFC
		J	fake news
2.6	Combined settings that control the layout, fonts and colours of an entire document	K	LTE
		L	navigation
2.7	A study field concerning the design of equipment	M	speaker
		N	copyright infringement
2.8	Environmentally responsible use of ICT devices	O	EULA
		P	CD
2.9	A term used to describe the ownership rights of a software developer	Q	paperless office
		R	theme
2.10	An e-mail message warning one of a virus that does not exist	S	Blu-ray
		T	ergonomics

(10 x 1)

**[10]**

**QUESTION 3: TRUE/FALSE ITEMS**

Indicate whether the following statements are TRUE or FALSE. Choose the answer and write 'true' or 'false' next to the question number (3.1–3.5) in the ANSWER BOOK. Correct the statement if it is FALSE. Change the underlined word(s) to make the statement TRUE. (Do NOT simply use the word 'NOT' to change the statement. NO mark will be awarded if only FALSE is written down.)

EXAMPLES:

QUESTION	ANSWER
<u>Google</u> is the world's most popular search engine.	True
An <u>NIC</u> has slots for hardware components, such as the CPU.	False – motherboard

- 3.1 Patches are unintended flaws in software. (1)
- 3.2 OCR enables a user to unlock a protected smartphone without having to type in a password. (1)
- 3.3 =VLOOKUP(E10,A1:B10,2,FALSE)  
The FALSE parameter will cause the VLOOKUP function above to return an exact match. (1)
- 3.4 A computer that has been taken over by a hacker is called a pirate. (1)
- 3.5 Cell formatting will display the result as a rounded number AFTER changing the value. (1)

**[5]**

**TOTAL SECTION A: 25**

**SECTION B****QUESTION 4: SYSTEMS TECHNOLOGIES**

- 4.1 Name ONE computer application that can be used to edit text files. (1)
- 4.2 Give TWO GUI elements on an electronic form that can be used to present a list of options to a user. (2)
- 4.3 Suggest TWO methods that could be used to repair a flash drive that has been infected with a virus. (2)
- 4.4 Assume that you have downloaded software from the internet, but you cannot run it because there is not enough space on the hard drive.  
Suggest TWO ways in which you can run the software. (2)
- 4.5 Why would one have to use the System Restore utility? (2)
- 4.6 Give TWO advantages of using an interactive whiteboard. (2)
- 4.7 A folder contains documents that were created over a number of years.  
State TWO ways in which to display ONLY the documents that were created LAST WEEK. (2)
- 4.8 State TWO ways in which to improve the following password:  
Y5Y5Y (2)
- 4.9 Explain TWO ways in which RAM differs from SSD storage. (2)
- 4.10 Briefly explain the function of a client and a server in a network. (2)
- 4.11 The vertical and horizontal scrolling feature of a touchpad has stopped working. Suggest a reason why this could have happened.  
**NOTE:** Assume that the hardware is working properly. (1)
- 4.12 State TWO advantages of 3D printing. (2)
- 4.13 Explain the concept of VR (*virtual reality*). (2)
- [24]**

**QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES**

- 5.1 Voice calling is used in many IM apps.  
What network communications protocol makes this feature possible? (1)
- 5.2 NFC is a communication medium available on many mobile devices.
- 5.2.1 How would one transfer files using NFC between two devices that have the NFC setting switched on? (1)
- 5.2.2 State TWO uses of NFC. (2)
- 5.3 Give TWO possible reasons why an e-mail is not delivered to some recipients on a distribution list. (2)
- 5.4 With reference to online shopping, what is the purpose of a shopping cart? (2)
- 5.5 A smartphone can be used as a Wi-Fi hotspot.  
State TWO disadvantages of using a smartphone as a Wi-Fi hotspot. (2)
- 5.6 How can you make your own website available to the public on the internet? (1)
- 5.7 Wi-Fi hotspots are used by shops and businesses to attract customers.  
Give TWO reasons why a shop would ask customers to log on using a password. (2)
- 5.8 Give TWO reasons why it is necessary to limit the access rights of users on a LAN. (2)
- [15]**

**QUESTION 6: INFORMATION MANAGEMENT**

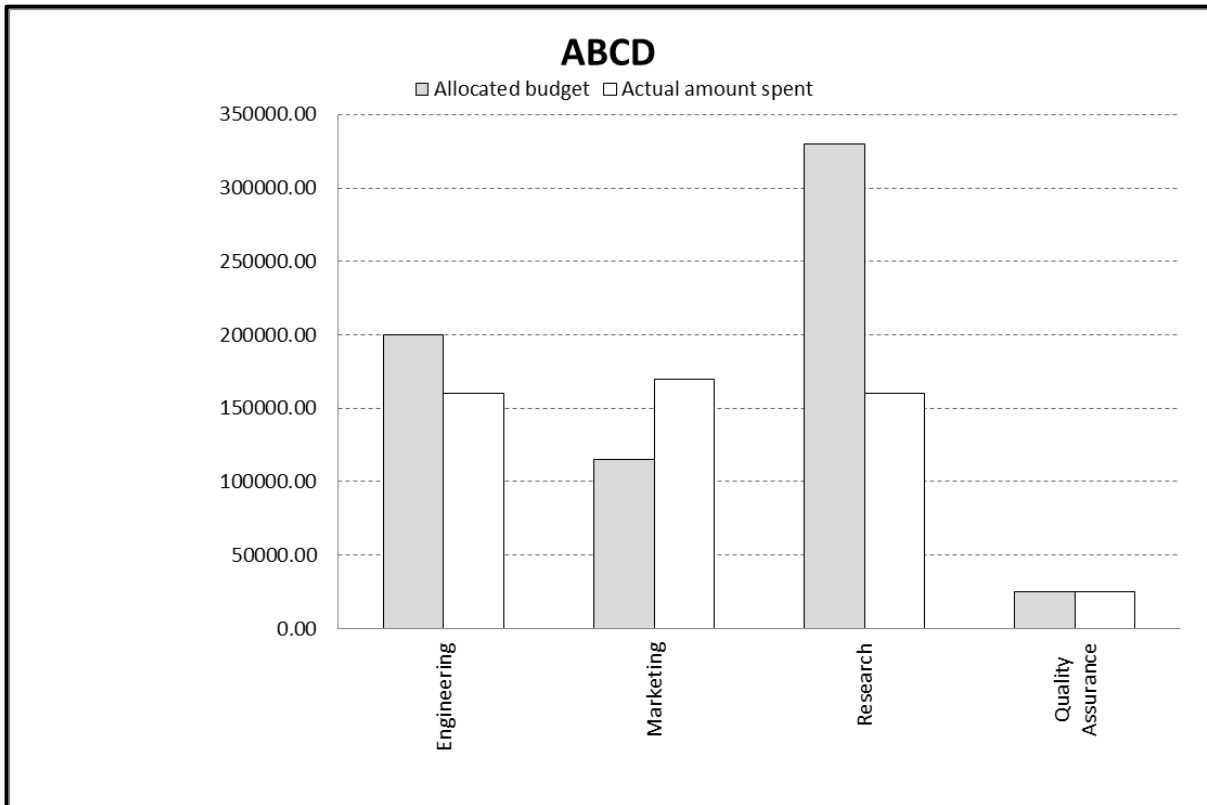
6.1 Give TWO tips for setting high quality questions to be used in a survey. (2)

6.2 How would one transfer data collected electronically to another application without re-typing the data? (2)

6.3 Assume that you have one spreadsheet that uses data from another spreadsheet.

Give ONE reason why it would be better to insert a cell reference instead of using the copy and paste method to return the required data. (1)

6.4 Study the graph below and answer the questions that follow.



6.4.1 How many categories (series of data) are shown in this graph/chart? (1)

6.4.2 Explain the problem that exists in the Marketing department according to the graph/chart. (1)

6.4.3 Which department underspent by the largest percentage on their allocated budget? (1)

6.4.4 Suggest THREE improvements that could be made to this graph/chart to make it easier to interpret. (3)

**[11]**

**QUESTION 7: SOCIAL IMPLICATIONS**

- 7.1 State TWO uses of AR (augmented reality). (2)
- 7.2 Give TWO examples of how social engineering is done. (2)
- 7.3 Discuss TWO benefits of using Bitcoin. (2)
- 7.4 A virtual private network (VPN) allows a user to remain anonymous while on the internet.
- Give TWO reasons why some governments are blocking VPN access for their citizens. (2)
- 7.5 Give TWO tips for the responsible use of social media in order to prevent offending other people. (2)

**[10]**

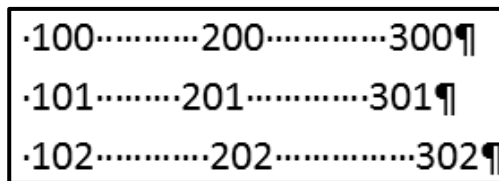
**QUESTION 8: SOLUTION DEVELOPMENT**

8.1 What does the key symbol to the left of the database field show in the screenshot below?



(1)

8.2 After the Show/Hide feature was activated, the following is displayed in a word processing document:



8.2.1 How did the user try to align the numbers in the screenshot above? (1)

8.2.2 Give TWO other word processing features that can be used to align the data above. (2)

8.3 Explain the purpose of a hyperlink in a document or web page. (1)

8.4 The numbers in the spreadsheet below need to be arranged from the smallest to the largest.

	A	B	C	D	E	F	G	H	I	J
1	4	22	61	58	10	101	97	82	38	48

Describe how this can be done without re-typing each number. (2)

8.5 Consider the screenshot below.

Name the combination of spreadsheet functions that were used in the cells in column B to extract the first word from the data in the cells in column A.

**NOTE:** The formula in cell B1 was copied down to the rest of the cells in column B.

	A	B
1	For that will be a milestone	For
2	towards realising the vision	towards
3	which inspired the historic events of 1994.	which

(2)

8.6 Draw the table represented by the HTML code below.

```
<table border=10>
  <tr>
    <td> A </td>
    <td> B </td>
  </tr>
  <tr>
    <td colspan=2> C </td>
  </tr>
</table>
```

(6)  
[15]

**TOTAL SECTION B: 75**

**SECTION C: INTEGRATED SCENARIO****QUESTION 9**

You are a computer specialist. The local traffic department has requested you to assist with the online administration of traffic offences.

- 9.1 The traffic officers have to record traffic offences at the roadside and communicate them to the traffic department.
- 9.1.1 What communications technology is most likely to be used to connect to the internet in this case? Motivate your answer. (2)
- 9.1.2 Barcodes are used on car licence disks.  
State TWO advantages of scanning barcodes as opposed to manually writing information down. (2)
- 9.1.3 Suggest a device that can be used to scan barcodes, other than barcode scanners. (1)
- 9.1.4 Give the term used to describe data that can be collected from offenders to uniquely identify them based on their physical features. (1)
- 9.2 The traffic officers would like to prevent traffic offenders from sharing information about speed traps and road blocks on social media.
- 9.2.1 State TWO ways in which traffic offenders can determine and share the location of a mobile speed camera after passing it. (2)
- 9.2.2 State TWO ways in which people try to hide social media posts from the authorities. (2)
- 9.2.3 While driving, your friend uses his smartphone to photograph people committing traffic offences with the aim of assisting the authorities.  
Why could his good intentions get him into trouble? (1)

- 9.3 The traffic department wants to implement an electronic filing system to establish a paperless office.
- There will be no need for a dedicated flatbed scanner to scan documents.
- 9.3.1 Explain the term *dedicated device*. (1)
- 9.3.2 Why is it possible to use certain printers for scanning? (1)
- 9.3.3 State TWO benefits of a paperless office. (2)
- 9.3.4 Suggest TWO ways in which the traffic department can make off-site backups of their data. (2)
- 9.3.5 The information from the documents will be captured in a database.
- State TWO advantages of storing data in a database. (2)
- 9.4 The traffic department would like to send letters to remind traffic offenders to pay their traffic fines.
- 9.4.1 What word processing feature can be used to create multiple personalised letters to all traffic offenders? (1)
- 9.4.2 State TWO ways to send electronic payment reminders using ICTs, other than using social media. (2)
- 9.5 Special cameras are used to monitor all traffic.
- 9.5.1 Name TWO types of internal storage media that can be used in the camera to store pictures and videos. (2)
- 9.5.2 Which camera setting affects the quality of the pictures and videos? (1)
- [25]**

**QUESTION 10**

You decide to set up an employment centre to assist the unemployed people in your area to find jobs.

- 10.1 You want to promote the employment centre using a YouTube video.
- 10.1.1 Why is it not a good idea for a user to repeatedly stream a YouTube video? (1)
- 10.1.2 How could a user watch the video without streaming it? (1)
- 10.1.3 People who upload videos to YouTube always track the number of views of the videos.  
Give TWO reasons why one would track the number of views, other than finding out whether the video is popular or not. (2)
- 10.1.4 YouTube has different video resolution options to select from.  
Give TWO reasons for using a low resolution option when watching videos on YouTube. (2)
- 10.1.5 Which device would enable you to take a smartphone video of yourself without holding the smartphone in your hand? (1)
- 10.1.6 A computer used to edit videos has 16 GB RAM, which is the maximum amount of RAM that this computer can have. The computer is extremely slow.  
Give TWO reasons with regard to hardware why this could happen. (2)
- 10.2 The employment centre wishes to invite companies to advertise vacancies on their website.
- 10.2.1 Give TWO e-mail netiquette guidelines when communicating with these companies. (2)
- 10.2.2 Give TWO reasons why some jobseekers cannot view certain content on the employment website. (2)
- 10.2.3 How can jobseekers get regular updates about vacancies without having to visit the website? (1)
- 10.2.4 State TWO ways in which the employment centre can stop unwanted advertisements from appearing while browsing. (2)
- 10.2.5 Suggest TWO ways in which jobseekers can refer to vacancies at a later stage without having to go online again. (2)
- 10.2.6 When viewing a website on a small screen, even maximising the browser window does not allow a user to see the full web page.  
Suggest TWO ways in which this problem could be addressed. (2)

- 10.3 An image such as the one below will be generated for every vacancy on the website.



- 10.3.1 What is this image called? (1)
- 10.3.2 State the function of this image. (1)
- 10.3.3 You have used your smartphone to download a brochure with this type of image.
- State how you could wirelessly connect your smartphone to a printer in order to print the brochure. (1)
- 10.4 Name TWO input or output devices that could make computers accessible to visually impaired users at the centre. (2)

[25]

**TOTAL SECTION C: 50**  
**GRAND TOTAL: 150**



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## SENIOR CERTIFICATE EXAMINATIONS

**COMPUTER APPLICATIONS TECHNOLOGY P2**

**2018**

**MARKING GUIDELINES**

**MARKS: 150**

**These marking guidelines consist of 14 pages.**

**SUGGESTIONS AND RECOMMENDATIONS TO MARKERS**

- Revisit the questions and the marking guidelines 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 marking guidelines. Ask yourself or your senior marker if the response could 'fit' into the marking guidelines before allocating the correct marks to the candidate. For example, the marking guidelines state 'cheap' and the learner responds with 'less expensive'.
- Beware of overlapping answers to a specific question. In general, one mark is awarded per fact.

**SECTION A****QUESTION 1: MULTIPLE-CHOICE**

1.1	B	✓	(1)
1.2	D	✓	(1)
1.3	B	✓	(1)
1.4	A	✓	(1)
1.5	C	✓	(1)
1.6	A/B	✓	(1)
1.7	C	✓	(1)
1.8	D	✓	(1)
1.9	B	✓	(1)
1.10	C	✓	(1)
<b>Total: [10]</b>			

**QUESTION 2: MATCHING ITEMS**

2.1	L	✓	(1)
2.2	O	✓	(1)
2.3	S	✓	(1)
2.4	M	✓	(1)
2.5	K	✓	(1)
2.6	R	✓	(1)
2.7	T	✓	(1)
2.8	F	✓	(1)
2.9	H	✓	(1)
2.10	A	✓	(1)
<b>Total: [10]</b>			

**QUESTION 3: TRUE OR FALSE ITEMS**

(Note to marker: In Question 3.1, 3.2, 3.4 and 3.5, accept the correct term even if false is not stated. Do not award a mark if only 'FALSE' is written down.)

3.1	FALSE, Bugs	(1)
3.2	FALSE, Fingerprint/Voice /Iris/Face recognition/Pattern Lock/Trusted places	(1)
3.3	TRUE	(1)
3.4	FALSE, zombie/bot	(1)
3.5	FALSE, The ROUND/ROUNDUP/ROUNDDOWN function	(1)
		<b>[5]</b>

**TOTAL SECTION A: [25]**

**SECTION B****QUESTION 4: SYSTEMS TECHNOLOGIES**

4.1	<ul style="list-style-type: none"> <li>• Text editors such as WordPad, Notepad, etc.</li> <li>• Word processing programs such as MS Word, etc.</li> </ul> <p style="text-align: right;">✓(Any one)</p>		(1)
4.2	<ul style="list-style-type: none"> <li>• Dropdown/Combo box</li> <li>• Check box</li> <li>• Radio buttons</li> <li>• List box</li> </ul> <p style="text-align: right;">✓✓(Any two)</p> <p><i>(Note to marker: Accept slider and date picker.)</i></p>		(2)
4.3	<ul style="list-style-type: none"> <li>• Run an antivirus scan</li> <li>• Toolkit</li> <li>• Delete the infected file</li> </ul> <p style="text-align: right;">✓✓(Any two)</p> <p><i>(Note to marker: Accept format.)</i></p>		(2)
4.4	<ul style="list-style-type: none"> <li>• Free-up some space on the drive, e.g. Delete unwanted data/Move/Disk Cleanup/Archive unused data to another drive/Compress data</li> <li>• Increase storage space e.g. Connect to an external HDD or storage media/Add an additional HDD or SSD</li> <li>• Do a custom install with fewer features</li> </ul> <p style="text-align: right;">✓✓(Any two)</p> <p><i>(Note to marker: Accept more than one option per bullet.)</i></p>		(2)
4.5	<ul style="list-style-type: none"> <li>• Certain devices/components are not working anymore</li> <li>• Problems after installing new hardware/software</li> <li>• Used as a precautionary measure before installing new software/hardware</li> <li>• The system does not start up after the update</li> <li>• Prefer previous system settings</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)

4.6	<ul style="list-style-type: none"> <li>• Changes made on the interactive whiteboard are automatically effected on the computer</li> <li>• It is large enough for many people to view</li> <li>• Can be used for visually impaired people</li> <li>• Allows for collaboration</li> <li>• Drawing sketches</li> <li>• Conversion of natural handwriting to text-based characters</li> <li>• Lesson can be stored for later playback</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
4.7	<ul style="list-style-type: none"> <li>• Filtered in Explorer✓</li> <li>• Search results by time range/Date modified✓</li> </ul> <p><i>(Note to marker: Accept hide the older files)</i></p>		(2)
4.8	<ul style="list-style-type: none"> <li>• Change some uppercase letters to lowercase letters/A mix of uppercase and lowercase letters</li> <li>• Use special characters</li> <li>• Increase the length of the password</li> <li>• Do not repeat letters and/or digits/Do not use patterns</li> <li>• Use a variety of letters, characters and objects</li> </ul> <p style="text-align: right;">✓✓(Any two)</p> <p><i>(Note to marker: Accept examples of passwords that display two of the above criteria.)</i></p>		(2)
4.9	<ul style="list-style-type: none"> <li>• RAM is more expensive per GB/SSD is cheaper per GB</li> <li>• RAM is temporary(volatile)/SSD is permanent</li> <li>• CPU communicates with RAM directly/CPU does not communicate with SSD directly/RAM is faster than SSD</li> <li>• RAM is primary storage/SSD is secondary storage</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
4.10	<ul style="list-style-type: none"> <li>• Clients request a service</li> <li>• Server provides a service</li> </ul> <p style="text-align: right;">✓✓(Any two)</p> <p><i>(Note to marker: Accept actual services provided by the server, e.g. security, software updates, etc.)</i></p>		(2)
4.11	<ul style="list-style-type: none"> <li>• The driver is not working properly</li> <li>• New software was loaded (incompatible with driver)</li> <li>• Settings/Scrolling features may have been changed</li> </ul> <p style="text-align: right;">✓(Any one)</p> <p><i>(Note to marker: Do not accept hardware failure.)</i></p>		(1)

4.12	<ul style="list-style-type: none"> <li>• Print a model of a product that does not yet exist</li> <li>• Customers can inspect a physical model before it is manufactured</li> <li>• Ordinary users can easily create 3D objects</li> <li>• Can be used in the manufacture process</li> <li>• Companies may find it cost effective</li> </ul> <p style="text-align: right;">✓✓(Any two)</p> <p><i>(Note to marker: Accept suitable examples, e.g. reference to medical applications.)</i></p>		(2)
4.13	A computer-generated (3D)/simulated world✓ that can be interacted✓ with using special devices.		(2)
			<b>[24]</b>

**QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES**

5.1	VOIP✓		(1)
5.2.1	Place the devices very close to each other/Let the devices touch each other✓	(1)	
5.2.2	<ul style="list-style-type: none"> <li>• Transfer files/media</li> <li>• Making payments</li> <li>• Identification/Security</li> <li>• Initiate an action/Launch an app</li> </ul> <p style="text-align: right;">✓✓ (Any two)</p>	(2)	(3)
5.3	<ul style="list-style-type: none"> <li>• The recipient’s mailbox is full</li> <li>• The e-mail address is incorrect/does not exist</li> <li>• Problems with the e-mail server</li> <li>• Attachment is too large/Service provider restrictions</li> <li>• Too many recipients on the distribution list</li> <li>• Data CAP is depleted/No internet access</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
5.4	Allows the user to store/add/remove products/items✓ before a transaction is completed✓		(2)
5.5	<ul style="list-style-type: none"> <li>• Battery life is depleted quicker</li> <li>• Overall internet experience is slower</li> <li>• Data CAP may deplete quicker/Data costs may increase</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
5.6	<ul style="list-style-type: none"> <li>• Use a suitable online web development/hosting service, e.g. Wordpress</li> <li>• Use an ISP to put it on a server</li> <li>• Obtain a fixed IP address for your local server</li> </ul> <p style="text-align: right;">✓(Any one)</p>		(1)

5.7	<ul style="list-style-type: none"><li>• Access to network can be limited to only their customers</li><li>• Reduce the possibility of network bottleneck/Users do not congest the network/All users get a fair share of use</li><li>• To limit internet access costs for the business</li></ul> <p style="text-align: right;">✓✓ (Any two)</p>		(2)
5.8	<ul style="list-style-type: none"><li>• Preventing access to certain files/folders</li><li>• Preventing access to certain programs</li><li>• Blocking access to certain websites</li><li>• Prevent users from changing system settings</li></ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
			<b>[15]</b>

**QUESTION 6: INFORMATION MANAGEMENT**

6.1	<ul style="list-style-type: none"> <li>• Question should give options/Closed question</li> <li>• Not too many/few options for closed questions</li> <li>• Question should be concise and unambiguous</li> <li>• Question must deal with the topic of the survey</li> <li>• Question should not require irrelevant personal information</li> <li>• You should not be able to get the answer from any other resource</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
6.2	Export/Copy to csv/text file/another application✓ Import/Paste into new application✓		(2)
6.3	Changes to original data will be updated automatically wherever it is referenced✓		(1)
6.4.1	2✓	(1)	
6.4.2	They spent too much of their budget/They overspent✓	(1)	
6.4.3	Research✓	(1)	
6.4.4	<ul style="list-style-type: none"> <li>• Add currency symbols to the numbers/amounts</li> <li>• Add data labels</li> <li>• Add axis titles</li> <li>• Move the legend to the left/right/bottom</li> <li>• Use a more meaningful chart title</li> <li>• Use gradient/textured/colours fill for the bars/columns</li> <li>• Remove the decimal portion of the numbers</li> <li>• Decrease the units of the y-axis</li> </ul> <p style="text-align: right;">✓✓✓(Any three)</p>	(3)	
			<b>[11]</b>

**QUESTION 7: SOCIAL IMPLICATIONS**

7.1	<ul style="list-style-type: none"> <li>• Used to explain abstract/difficult concepts/Connects reality with digital content, e.g. flight training, medical training, etc.</li> <li>• Supports learning materials/less expensive learning materials, i.e. educational purposes</li> <li>• Entertainment purposes, e.g. gaming</li> <li>• Provides additional information, e.g. to promote tourism, marketing purposes, construction industry, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any two)</p>		(2)
7.2	<ul style="list-style-type: none"> <li>• Phishing/fake e-mails to obtain personal information</li> <li>• Use of social media to obtain personal information</li> <li>• Pharming/fake websites that pretend to be real</li> <li>• Making telephone calls/Send SMS pretending to be real companies</li> <li>• Sifting through company dumpsters looking for private information</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
7.3	<ul style="list-style-type: none"> <li>• No banking charges/Low transaction fees</li> <li>• No taxation/government regulation</li> <li>• Money available/accepted anywhere in the world</li> <li>• Many retailers are starting to accept Bitcoin</li> <li>• Can be viewed as an investment</li> <li>• Transactions cannot be easily traced</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
7.4	<ul style="list-style-type: none"> <li>• VPN can be used to pirate software/torrenting</li> <li>• Cybercriminals hide behind VPN/To perform (anonymous) crimes</li> <li>• Difficult for governments to regulate VPN service providers</li> <li>• Control/Security</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
7.5	<ul style="list-style-type: none"> <li>• Do not share personal information/photographs of others without permission</li> <li>• Do not harass others e.g. cyber-bullying, cyber-stalking</li> <li>• Do not post offensive content</li> <li>• Be aware of cultural and religious differences</li> <li>• Do not share the location details of other people without their permission</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>		(2)
			<b>[10]</b>

**QUESTION 8: SOLUTION DEVELOPMENT**

8.1	The field is a primary key✓		(1)				
8.2.1	Used the spacebar/Spaces were used✓	(1)					
8.2.2	<ul style="list-style-type: none"> <li>• Tabs</li> <li>• Tables</li> <li>• Columns</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>	(2)		(3)			
8.3	<ul style="list-style-type: none"> <li>• To move to another point in a document</li> <li>• To open a new document</li> <li>• To navigate between web pages</li> </ul> <p style="text-align: right;">✓(Any one)</p>		(1)				
8.4	Sort✓ using the left to right setting/horizontally✓  OR  Transpose the list to a vertical list✓ Sort✓ transposed list (and transpose back)		(2)				
8.5	Combine the LEFT/MID✓ functions with the FIND/SEARCH✓ functions to find the space		(2)				
8.6	<ul style="list-style-type: none"> <li>• Thick✓ table border/grid present</li> <li>• 2 rows✓</li> <li>• 2 columns✓</li> <li>• Row 2 merged horizontally✓ by 2 cells✓</li> <li>• Correct letters in each cell✓</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">A</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">B</td> </tr> <tr> <td colspan="2" style="border: 1px solid black; padding: 5px; text-align: center;">C</td> </tr> </table> </div>	A	B	C			(6)
A	B						
C							
			<b>[15]</b>				

**TOTAL SECTION B: 75**

**SECTION C**

**QUESTION 9: INTEGRATED SCENARIO**

9.1.1	3G/LTE/4G/Cellular/Satellite✓  AND  Motivation: Traffic officers will be at different points and therefore will need mobile internet communications✓	(2)	
9.1.2	<ul style="list-style-type: none"> <li>• Easier/Quicker to capture information</li> <li>• Additional information from a database may be available</li> <li>• There will be a record of barcodes scanned for later reference</li> <li>• Information/Data will be more accurate</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>	(2)	
9.1.3	Smart device e.g. smartphone, tablet, phablet✓	(1)	
9.1.4	Biometric data✓	(1)	(6)
9.2.1	<ul style="list-style-type: none"> <li>• Geo-tagging</li> <li>• Drop a pin on a map</li> <li>• Record/Share GPS coordinates, e.g. WhatsApp and Waze</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>	(2)	
9.2.2	<ul style="list-style-type: none"> <li>• Use an application that automatically restricts who can view posts</li> <li>• Use features/privacy controls in the relevant app</li> <li>• Post information under a nickname/pseudonym</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>	(2)	
9.2.3	<ul style="list-style-type: none"> <li>• Offender could intimidate or assault your friend</li> <li>• Should not be handling phone/camera while driving</li> <li>• Friend could cause an accident by driving and taking pictures at the same time</li> </ul> <p style="text-align: right;">✓(Any one)</p>	(1)	(5)
9.3.1	A dedicated device has only one function✓	(1)	
9.3.2	Some printers have multi-function features/Convergence of features in one device/Printer may be a multi-function device✓	(1)	

9.3.3	<ul style="list-style-type: none"> <li>• Save on paper/printer consumables</li> <li>• Protects the environment/Encourage green computing</li> <li>• Easier to search for electronic documents</li> <li>• Backups can easily be done</li> <li>• Save on physical storage space</li> </ul>	✓✓(Any two)	(2)	
9.3.4	Use cloud storage✓ Use external storage media e.g. hard drives/DVD's/flash drives, etc.✓		(2)	
9.3.5	<ul style="list-style-type: none"> <li>• Various types of data can be stored in a database</li> <li>• Data is easily processed into information</li> <li>• Queries make it easy to extract data</li> <li>• Results of queries can be presented in reports</li> <li>• Capturing of data is relatively easy/Easy management of data</li> </ul>	✓✓(Any two)	(2)	(8)
9.4.1	Mail merge✓		(1)	
9.4.2	<ul style="list-style-type: none"> <li>• SMS</li> <li>• E-mail</li> <li>• Traffic apps</li> <li>• Fax</li> </ul>	✓✓(Any two)	(2)	(3)
9.5.1	<ul style="list-style-type: none"> <li>• Memory card</li> <li>• Hard drive</li> <li>• SSD</li> </ul>	✓✓(Any two)	(2)	
9.5.2	<ul style="list-style-type: none"> <li>• Resolution/Megapixel</li> <li>• ISO</li> <li>• Shutter speed</li> <li>• Aperture size</li> </ul>	✓(Any one)	(1)	(3)
				<b>[25]</b>

**QUESTION 10: INTEGRATED SCENARIO**

10.1.1	<ul style="list-style-type: none"> <li>Excessive use of data/High data costs</li> <li>Constant streaming may bottleneck the network for other users/slow down the network</li> </ul> <p style="text-align: right;">✓ (Any one)</p>	(1)	
10.1.2	Download/Save the video✓	(1)	
10.1.3	<ul style="list-style-type: none"> <li>Marketing/Possible remuneration</li> <li>Determining the unemployment rate</li> <li>Low viewership may mean that the video title does not attract views</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>	(2)	
10.1.4	Less data will be used✓ Line speed may not be fast enough/Less chance of buffering✓	(2)	
10.1.5	<ul style="list-style-type: none"> <li>Selfie stick</li> <li>Tripod</li> </ul> <p style="text-align: right;">✓ (Any one)</p>	(1)	
10.1.6	<ul style="list-style-type: none"> <li>Slow GPU/CPU</li> <li>No dedicated graphics card/adapter</li> <li>Insufficient/Inefficient (graphics) memory</li> <li>Hard drive is full</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>	(2)	(9)
10.2.1	<ul style="list-style-type: none"> <li>Do not use capital letters</li> <li>Attachments should not be too large/Compress large files</li> <li>Do not make spelling mistakes or grammatical errors</li> <li>Ensure that your e-mails are free of viruses</li> <li>Add a meaningful subject line</li> <li>Only send work related e-mails/No spam</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>	(2)	
10.2.2	<ul style="list-style-type: none"> <li>A plug-in is required</li> <li>Pop-up blocker is enabled</li> <li>Version of browser is too old/Browser not supported</li> <li>Anti-malware may have blocked content</li> <li>User may need to login first</li> <li>Restrictions on content set by system administrator</li> </ul> <p style="text-align: right;">✓✓(Any two)</p>	(2)	

10.2.3	Subscribe to the website/RSS-feeds✓	(1)	
10.2.4	<ul style="list-style-type: none"> <li>• Pop-up blocker</li> <li>• Ad-blocker/Anti-spyware</li> <li>• Only visit recommended sites</li> <li>• Register and pay a subscription</li> </ul>	✓✓(Any two) (2)	
10.2.5	<ul style="list-style-type: none"> <li>• Using the snipping tool</li> <li>• Inserting a screen clipping</li> <li>• Press Print Screen on the keyboard/Shift + Print Screen and paste it into a document/Print to PDF</li> <li>• Save the web page</li> <li>• Take a picture with a smartphone</li> <li>• Print a hardcopy</li> </ul>	✓✓(Any two) (2)	
10.2.6	<ul style="list-style-type: none"> <li>• Zooming tool in the web browser</li> <li>• Switch to mobile view</li> <li>• Rotate device to landscape view</li> <li>• Change the resolution of the screen</li> </ul>	✓✓(Any two) (2)	(11)
10.3.1	QR code✓	(1)	
10.3.2	QR codes are used as a link to a URL/webpage/text/file✓	(1)	
10.3.3	<ul style="list-style-type: none"> <li>• Wi-Fi</li> <li>• E-mail to printer/Cloud print</li> <li>• Bluetooth</li> <li>• NFC</li> </ul>	✓ (Any one) (1)	(3)
10.4	<ul style="list-style-type: none"> <li>• Microphone</li> <li>• Braille keyboard</li> <li>• Braille printer</li> <li>• Speakers</li> <li>• Larger screen</li> </ul>	✓✓(Any two)	(2)
			[25]

TOTAL SECTION C: 50

GRAND TOTAL: 150