basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

**SENIOR CERTIFICATE/
NATIONAL SENIOR CERTIFICATE**

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

NOVEMBER 2020

MARKS: 150

TIME: 3 hours

This question paper consists of 16 pages.

INSTRUCTIONS AND INFORMATION

1.   This question paper consists of:

        SECTION A (25)
        SECTION B (75)
        SECTION C (50)

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.   Generally, one mark is allocated per fact; therefore, a 2-mark question would require TWO facts, etc.

8.   Read the questions carefully. DO NOT give more than the question requires as this will NOT be marked.

9.   All answers MUST be related to Computer Applications Technology.

10.   Answers such as 'cheaper', 'slower'/'faster' and 'easier' will ONLY be accepted if it is used together with a reason or an explanation.

11.   Do NOT use brand names in your answers, unless specifically required.

12.   Write neatly and legibly.

SECTION A

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1 to 1.10) in the ANSWER BOOK, e.g. 1.11 D.

1.1   A blinking vertical bar that shows the position of the text being typed in a text editor is called a …

      A   highlight.
      B   border.
      C   symbol.
      D   cursor.   (1)

1.2   The communication medium commonly used for an ADSL internet connection is …

      A   copper cable.
      B   radio waves.
      C   fibre-optic cable.
      D   sound waves.   (1)

1.3   Which ONE of the following is closely related to biometric security?

      A   Firewall
      B   Password
      C   Fingerprint reader
      D   Encryption key   (1)

1.4   A … is a possible reason why a program will not install.

      A   slow download speed
      B   slow start-up process
      C   change of regional settings
      D   restricted user account   (1)

1.5   Study the following incomplete nested IF statement:

      =IF(A1=1, IF(B1=4, "Yes", "No"

      Which ONE of the following options would complete the statement to display either 'Yes' or 'No' depending on the conditions below?

      • Yes – if the value in cell A1=1 **AND** the value in cell B1=4, **OR**
      • No – if either one of these conditions are not met

      A   ))
      B   ), "No")
      C   ), "No"))
      D   , "")]   (1)

1.6 Which ONE of the following would you use to solve the problem when your computer randomly hangs after a driver update?

    A   System Restore
    B   Disk Cleanup
    C   System Backup
    D   Task Scheduler   (1)

1.7 One of the possible constraints (limitations) of big data is …

    A   a loss of revenue.
    B   a loss of user privacy.
    C   a malware infection.
    D   available bandwidth.   (1)

1.8 A wireless router could be damaged if it was placed or used next to a microwave oven because of …

    A   the heat.
    B   vibration.
    C   interference.
    D   a fire hazard.   (1)

1.9 A bookmark is a feature of a word processor that uses …

    A   hyperlinks.
    B   styles.
    C   tables.
    D   sections.   (1)

1.10 Study the following HTML code carefully:

```
<font face="Arial" colour="green"> First website </font>
```

Assume that all the code prior to the line above is correct. Which ONE of the following font colours will be used when displaying the text 'First website' in a browser?

    A   Red
    B   Black
    C   Green
    D   Orange   (1)

[10]

QUESTION 2: MATCHING ITEMS

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

COLUMN A		COLUMN B	
2.1	A field property that automatically inserts a value in a field for each new record in a database table	A	VoIP
		B	#NULL
2.2	Malware that is often associated with Bitcoin	C	zombie
		D	spyware
2.3	A technology that is used to produce an editable soft copy from a scanned document	E	botnet
		F	survey
2.4	A protocol that is used to enable telephone calls using the internet	G	ppm
2.5	A spreadsheet error message that appears when the value in a cell is longer than the cell width	H	OCR
		I	attribute
2.6	A cellular technology that provides high data transmission speeds	J	interview
		K	validation rule
2.7	A set of characters added to the end of a file name that identifies the type of file	L	FTP
		M	Edge
2.8	A unit of measurement for printing resolution	N	extension
2.9	A group of infected computers that can be controlled remotely to attack other computers/networks	O	HCI
		P	default value
2.10	A set of questions for research purposes that will be answered electronically by a large group of people	Q	ransomware
		R	LTE
		S	#####
		T	DPI

(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 numbers (3.1 to 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.

EXAMPLES:

QUESTION	ANSWER
The initial start-up instructions for a computer are stored in the <u>ROM</u>.	True
<u>NFC</u> devices can connect to each other up to a distance of 10 metres.	False – Bluetooth

3.1   <u>Grid computing</u> is a system where resources of many computers in different locations are used at the same time to complete a single task. (1)

3.2   A <u>site</u> license allows a company to install only one copy of the software. (1)

3.3   An <u>attachment</u> is a file that can be sent together with an e-mail message. (1)

3.4   The AVERAGE function will give the average of a set of values in a <u>database</u>. (1)

3.5   <u>Information overload</u> is the process of replacing analogue technologies used for broadcasting services with digital technologies. (1)

[5]

TOTAL SECTION A: 25

SECTION B

QUESTION 4: SYSTEMS TECHNOLOGIES

4.1 Study the notebook computer (laptop) specifications in the advertisement below and answer the questions that follow.

```
Intel Core i5
15.6" screen (1920 x 1080)
128 GB SSD
3 x USB ports
VGA port
Webcam with microphone
802.11 b/g/n
SD card reader
6-cell battery
Office 365 (1-year licence)
```

4.1.1 Which broad software category does Office 365 belong to? (1)

4.1.2 Give TWO possible reasons why screen resolution is indicated in addition to screen size in the specifications above. (2)

4.1.3 Give TWO reasons why newer models of notebook computers do not have optical drives. (2)

4.1.4 Give ONE possible reason why an SSD is specified for this computer instead of a hard drive. (1)

4.1.5 Give TWO features of a USB port that make it such a popular choice for connecting peripherals. (2)

4.1.6 Discuss why you would not expect to find a VGA port included in the specifications of this notebook computer AND state which other port you would rather expect to find. (2)

4.1.7 Name TWO specifications in the advertisement that would make it possible to set up biometric security on this notebook computer. (2)

4.1.8 Name an essential specification affecting performance that is NOT listed in this advertisement. (1)

4.2 State TWO benefits of using online banking as opposed to physically visiting a bank. (2)

4.3 Suggest ONE way in which to ensure that documents created in new software versions are compatible with older software versions. (1)

4.4   Give TWO reasons why you may decide to buy a desktop computer rather
        than a notebook computer.   (2)

4.5   Give TWO reasons why a computer may prompt a user to start up the
        operating system, e.g. Windows, in safe mode.   (2)

4.6   A printer does not print the document sent to it, even though it is working,
        switched on and properly connected.

        Discuss TWO ways in which to resolve this problem.   (2)

4.7   Name the utility program that rearranges parts of files scattered all over the
        hard drive, so that they are stored next to each other.   (1)

4.8   Give TWO reasons for using the Task Scheduler utility.   (2)

                                                                                    [25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1   What is the main purpose of an ISP?   (1)

5.2   State TWO functions of a router as used in a home network.   (2)

5.3   State TWO advantages of a fibre connection over a wired ADSL connection. (2)

5.4   Why would a user prefer to have an unshaped connection instead of a shaped connection to the internet?   (1)

5.5   State TWO advantages of using a browser-based online application for editing documents rather than a stand-alone application installed on a desktop computer.   (2)

5.6   State TWO disadvantages of using browser plug-ins and extensions.   (2)

5.7   Why would you get a 'Page Not Found' or 'Not Found' error message while trying to access a web page?   (1)

5.8   Many public places often offer free internet access.

        5.8.1   What is this type of connection called?   (1)

        5.8.2   State ONE problem with this kind of free internet connection, other than security risks.   (1)

5.9   What is the main function of a firewall?   (1)

5.10   How would an employee securely access his/her company network from a remote location?   (1)

[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1   Give TWO reasons why a task definition is necessary when planning the research for your practical assessment task (PAT).   (2)

6.2   Explain how you can avoid getting many different or unrelated results from a web browser when you are searching for a particular topic on the internet.   (1)

6.3   When setting a questionnaire, it is important to consider the expected format of the answers to closed questions as this would assist you in processing and analysing the data.

      6.3.1   Give TWO types/formats of answers that would return values that could be exported to a .csv file.   (2)

      6.3.2   How could this data be presented visually in a spreadsheet?   (1)

6.4   Explain why it is important that researchers do NOT include biased sources in their research or reports.   (2)

6.5   Give TWO ways in which database queries are helpful when analysing data.   (2)
         [10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1   Describe a situation that would qualify as online harassment.   (1)

7.2   Suggest TWO ways in which computer users can prevent RSI to their hands and wrists.   (2)

7.3   State TWO ways in which to avoid becoming a victim of e-mail phishing.   (2)

7.4   Driverless cars/Self-driving cars may become more common in the future.

      Use your knowledge of computers to discuss TWO potential problems that could be associated with driverless cars/self-driving cars.   (2)

7.5   State ONE disadvantage of crowd funding for a person who invests in a new business.   (1)

7.6   State TWO disadvantages of using free cloud storage services.   (2)
         [10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1   You typed the word 'text', but ♦ɱ⊠♦ appeared.

How do you ensure that the word 'text' is displayed instead of the symbols? (1)

8.2   Name ONE setting that can be adjusted by using the ruler of a word processor. (1)

8.3   What must you do before you can insert an automated citation in a word processing document? (1)

8.4   Data appears in cells A1:W100 in a spreadsheet.

Which spreadsheet option would you use to print only the cell range A1:D10? (1)

8.5   You wish to paste a graph from a spreadsheet into a word processing document.

Which Paste Special option would you use to enable the graph in the word processing document to update when the data in the spreadsheet changes? (1)

8.6   Why do the letters C and D not appear in the spreadsheet, as shown in the screenshot below?

	A	B	E	F
1				
2				

(1)

8.7   Explain the concept of a *circular reference* in a spreadsheet. (1)

8.8   The LOOKUP function used in cell C5 attempts to display the mark for specific learners from the lookup table (cells E4:I5), as shown in the screenshot below, but the function returns an error message.
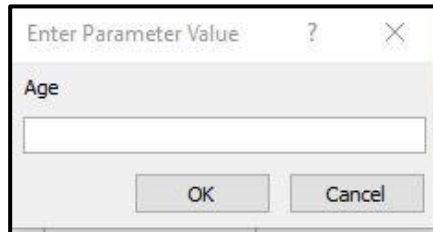
C5		▼			f_x	=VLOOKUP(B5, $E$4:$I$5, 2, FALSE)			
	A	B	C	D	E	F	G	H	I
1									
2		DATA			LOOKUP TABLE				
4		Name	Mark		Ravi	Harry	Millicent	Betty	Sipho
5		Harry	#N/A		67	65	76	59	66
6		Betty	#N/A						
7		Sipho	#N/A						

Suggest ONE way to ensure that the correct marks appear for all listed learners. (1)

8.9   Microsoft Access allows you to insert a text box when you design a database form.

Give TWO reasons for using a text box in a database form.   (2)

8.10   The following message appeared when you ran a database query:

Enter Parameter Value   ?   ✕

Age

OK   Cancel

Give TWO reasons why the database requires you to enter a parameter value.   (2)

8.11   While viewing a web page in the browser, you decide that you would like to examine the HTML code.

What would you do to display the HTML code of that web page?   (1)

8.12   Give TWO tips or hints that will help you to prevent errors or that will assist you with troubleshooting when coding in HTML.   (2)
    [15]

TOTAL SECTION B: 75

SECTION C: INTEGRATED SCENARIO

QUESTION 9

Your Grade 12 class is arranging a movie night as a fundraiser for your school. You need to assist with the arrangements.

9.1   You will require a notebook computer and a data projector to show the movies in the school hall.

      9.1.1   Name TWO features, other than the resolution, that you will consider when buying a data projector. (2)

      9.1.2   Explain why it will NOT be necessary for the notebook computer to have a dedicated graphics card for showing movies. (1)

9.2   Give ONE reason why you do NOT have to use a mouse with a notebook computer. (1)

9.3   Instead of downloading all the movies you want to show during the movie night, one of your friends suggested streaming the movies from services like Netflix or YouTube.

      9.3.1   Name the type of software needed to play movies. (1)

      9.3.2   Explain how bandwidth influences the streaming of movies. (2)

      9.3.3   Discuss TWO limitations of using a 4G cellular connection to stream a movie. (2)

9.4   Identify TWO risks that your notebook computer could be exposed to by being connected to the internet AND suggest a way to prevent harm from EACH risk that you identify. (4)

9.5   After the movie night, the principal requires you to create a report with main and subheadings.

      9.5.1   What steps must you take before an automatic Table of Contents can be added to a word processing document? (2)

      9.5.2   The report will be published on a web page.

            Name TWO possible locations that hyperlinks in the report can point to. (2)

      9.5.3   You will use the mail merge feature of the word processor to send the report to other teachers.

            State TWO advantages of using the mail merge feature to create personalised e-mail messages. (2)

9.6   To evaluate the success of the movie night, the organisers require the parents to fill in an electronic form that will be published on the school's blog.

    9.6.1   Give TWO benefits for the organisers of publishing the online form on the school's blog.   (2)

    9.6.2   Name TWO web-based spreadsheet programs as opposed to a default spreadsheet program installed on the notebook computer.   (2)

    9.6.3   The data from the electronic form was exported to a spreadsheet. The organisers wish to determine how many parents gave a rating of more than 7 for all three criteria, i.e. Movie rating, Venue rating and Catering rating.

           Study the screenshot below and explain why the COUNTIF function shown in the address bar of cell E2 does not give the correct answer.

E2			*fx*	=COUNTIF(B2:D8 ">=7")
	A	B	C	D	E
	ParentID	Movie rating	Venue rating	Catering rating	Number of people satisfied
2	G11FC601	8	5	10	12
3	G9AS409	10	10	5	
4	G9GL758	6	9	9	
5	G11GW985	2	3	7	
6	G8KT591	9	10	9	
7	G12DA376	8	1	2	
8	G11DC934	8	6	3	

                                                                  (2)

                                                                  [25]

QUESTION 10

Your school is organising a reunion. Learners that attended the school during the past 50 years will be invited.

10.1   A link to the invitation will be sent to each former learner. The responses will be captured in a database.

    10.1.1   The GPS coordinates of the venue are included on the invitation.

        Explain the concept *GPS*. (Do NOT merely write the acronym in words.)   (2)

    10.1.2   Which e-mail feature can be used to send the link to all the former learners simultaneously?   (1)

    10.1.3   Which <u>type</u> of application can be used to solve the problem of a link address that is very long?   (1)

    10.1.4   Name the database object that could be used to give a printed summary of the number of men and women expected.   (1)

    10.1.5   Give TWO security measures to ensure confidentiality of the data of the guests listed in the database.   (2)

10.2   Former learners can be located on social media and a social media page will be used to share information regarding the reunion.

    10.2.1   Give TWO reasons why people do NOT want to have social media accounts.   (2)

    10.2.2   State TWO guidelines that could be included in a school policy on the use of social media.   (2)

    10.2.3   Discuss TWO ways in which to locate former learners using social media.   (2)

10.3   A dinner, followed by a dance, will be held for the former learners.

    10.3.1   Name TWO technologies that can be used to identify and allow the guests to enter the dance, other than biometric technology.   (2)

    10.3.2   The guests will be able to choose food from a menu app that is installed on a tablet.

        Give TWO reasons why managing the meal choices from a menu app is easier than managing it from a printed menu.   (2)

10.4   The guests will use augmented reality (AR) apps for entertainment.

State TWO ways in which augmented reality (AR) differs from virtual reality (VR). (2)

10.5   There will be a presentation on the use of the Internet of Things (IoT) at the school.

Explain the concept *Internet of Things (IoT)*. (2)

10.6   The guests will take photographs with their smartphones.

10.6.1   Photographs will be transferred from the guests' smartphones to a notebook computer using Bluetooth.

State TWO advantages of transferring the photographs wirelessly from the smartphones to a notebook computer instead of using a USB cable to transfer the photographs. (2)

10.6.2   All the photographs of the reunion will be included in a PowerPoint presentation.

What can you do to reduce the file size of the PowerPoint presentation without compressing it? (1)

10.6.3   The PowerPoint presentation will be uploaded to the cloud.

How can this presentation be made available to former learners who do not have access to the internet? (1)

[25]

TOTAL SECTION C: 50
GRAND TOTAL: 150