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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

NOVEMBER 2019

MARKS: 150

TIME: 3 hours

This question paper consists of 17 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; a 2-mark question would therefore require TWO facts, etc.
8. Read the questions carefully and do NOT give more information 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', easier, etc. will ONLY be accepted, if they are motivated.
11. Do NOT use brand names in 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 The CPU can easily be changed on a ...
A sound card.
B hard drive.
C memory chip.
D motherboard. (1)
- 1.2 Which ONE of the following types of software allows you to try out a program before you buy it?
A Freeware
B Malware
C Shareware
D Adware (1)
- 1.3 Any document saved on a computer is referred to as a ... copy.
A hard
B soft
C backup
D cloud (1)
- 1.4 When a user presses a combination of keys on a keyboard to perform an action, it is called a ...
A hyperlink.
B shortcut.
C function.
D paragraph. (1)
- 1.5 A ... is required for viewing a simulated world in 3D.
A VR headset
B webcam
C 3D printer
D GPS device (1)

- 1.6 A file name ending with the ... file extension is a type of file that stores data in text-only format.
- A .exe
 - B .zip
 - C .pdf
 - D .csv
- (1)
- 1.7 A trend in technology that allows for household appliances to be connected to the internet:
- A https
 - B VoIP
 - C IoT
 - D IM
- (1)
- 1.8 Which ONE of the following options is NOT essential to allow for collaboration during M-Learning? Learners ...
- A can share and get feedback on their work in real time.
 - B must have the necessary computer skills.
 - C can access and connect to the internet at all times.
 - D must have the latest expensive portable technologies.
- (1)
- 1.9 A spreadsheet feature or a combination of features used to display values or data that meet certain criteria is known as ...
- A data validation.
 - B find and select.
 - C format and edit.
 - D sort and filter.
- (1)
- 1.10 Which ONE of the following options will display the symbol 'A' for a learner mark of 80 found in cell A1 of a spreadsheet?
- A = IF (A1=80, "A", "")
 - B = IF (A1=80, "", "A")
 - C = IF (A1<80, "A", "")
 - D = IF (A1>80, "A", "")
- (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 device that allows a computer to connect to a network	A	proprietary
2.2	The practice where an ISP gives preference to certain network services, e.g. e-mail	B	cyberbullying
2.3	Software where all the code is freely available	C	form
2.4	Using ICTs to work from home instead of travelling to work	D	VPN
2.5	A program that allows people to explore the World Wide Web	E	NIC
2.6	A public connection to the internet in restaurants and shops	F	interview
2.7	Tricking a user to follow a hidden link on a website	G	report
2.8	A one-on-one meeting where a person answers research questions	H	survey
2.9	A database object that displays one record at a time	I	throttling
2.10	The act of pretending to be someone else online	J	keylogging
		K	browser
		L	open-source
		M	keyboard
		N	teleconference
		O	shaping
		P	hotspot
		Q	HTML editor
		R	identity theft
		S	telecommuting
		T	click-jacking

(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 <u>ROM</u> .	True
<u>NFC</u> devices can connect to each other up to 10 metres apart.	False – Bluetooth

- 3.1 A LAN is a type of network that could connect offices in Durban and Cape Town. (1)
- 3.2 BYOD is a concept where employees are allowed to use their personal devices on a company network. (1)
- 3.3 A Trojan is a software program that allows the operating system to communicate with a hardware device. (1)
- 3.4 The defragment utility program can be used to delete temporary or unused files. (1)
- 3.5 Speech-to-text allows a user with hearing disabilities to access a voice note. (1)
- [5]**

TOTAL SECTION A: 25

SECTION B**QUESTION 4: SYSTEMS TECHNOLOGIES**

- 4.1 Name TWO input devices that can be found on a laptop computer, other than a touch screen. (2)
- 4.2 The user cannot see the full text while an e-mail is being typed on a touch screen device.
Give TWO reasons why this happens. (2)
- 4.3 Give TWO functions of a UPS. (2)
- 4.4 Discuss TWO reasons why a presenter would use a data projector instead of a monitor while presenting. (2)
- 4.5 State TWO advantages of HDMI cables over VGA cables for connecting a television to a computer. (2)
- 4.6 Give TWO reasons why 3D printers are not commonly used in a home office, other than the cost. (2)
- 4.7 The following system requirements are needed to install an office suite:
- 1 GHz or faster CPU
 - 2 GB or more RAM
 - 3 GB of available disk space
 - 1024x768 or higher
 - Windows 7 or later
- 4.7.1 Explain why it is INCORRECT to say that 1024x768 is the size of the monitor. (1)
- 4.7.2 Give the term used to describe the reason why this office suite will not run on an earlier version of the operating system specified above. (1)
- 4.8 Give TWO reasons why you would choose to buy an office suite instead of purchasing various applications by different software developers, other than the cost. (2)
- 4.9 Give TWO possible causes why an application stops responding. (2)
- 4.10 A picture was manipulated in a graphics editor and then saved.
Give TWO reasons why the saved picture now displays blurred or is unclear. (2)
- 4.11 Explain how convergence contributes to green computing. (2)

4.12 A television station is planning on replacing older analogue technology with technology for digital broadcasting.

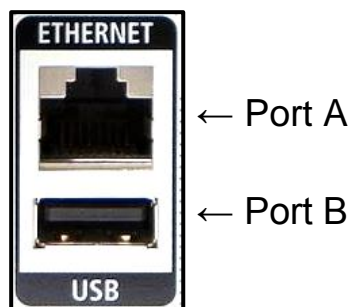
4.12.1 Write down the general term for the process where broadcasting services are changed from analogue to digital technology. (1)

4.12.2 State TWO advantages of digital broadcasting technology for the viewers. (2)
[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1 Give TWO advantages of connecting computers in a network rather than using stand-alone computers. (2)

5.2 Study the image below and answer the questions that follow.



5.2.1 Which port should a person use to connect a computer to a wired network? (1)

5.2.2 Explain how to connect a computer to a wireless network using one of the ports. (1)

5.3 Name the type of internet connection that uses light for data transmission. (1)

5.4 All users on a LAN have valid access rights, but when they attempt to log on with their correct passwords, they are unsuccessful.

Suggest ONE solution to this problem. (1)

5.5 Why does a video freeze (buffer) from time to time while streaming it from the internet? (1)

5.6 What is the purpose of the home page setting in a web browser? (1)

5.7 State TWO outcomes that can be achieved by clicking on a website hyperlink. (2)

5.8 Suggest TWO ways in which you can ensure better privacy on social media, such as Facebook or WhatsApp. (2)

5.9 Give TWO limitations of e-commerce. (2)

5.10 Name the technology used by banks and also the creators of ransomware to secure the exchange of information over the internet. (1)
[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1 Refer to a formal written report, such as your PAT, and explain the purpose of an:

6.1.1 Abstract (1)

6.1.2 Introduction (1)

6.2 When you did research for your PAT, you found information on the topic that appeared to be suitable.

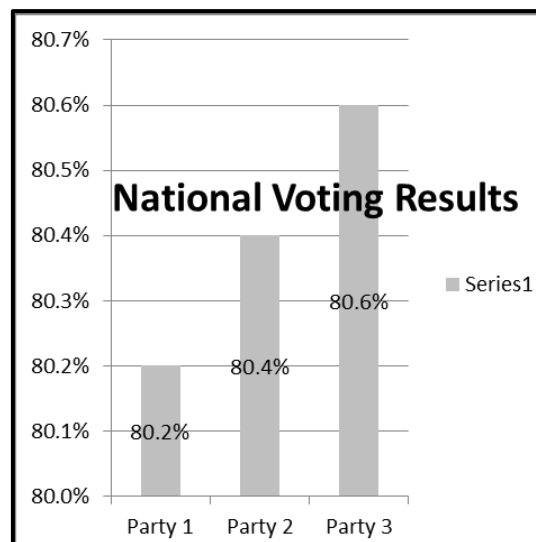
Give TWO reasons why you CANNOT use some of this information in your report. (2)

6.3 Closed questions have a set of answers to choose from.

6.3.1 Discuss ONE limitation of using closed questions in a questionnaire. (1)

6.3.2 Give TWO benefits for a researcher when closed questions are answered electronically. (2)

6.4 Study the graph below that shows the final outcome of a national election and answer the question that follows.



Give THREE reasons why it is difficult to interpret the graph.

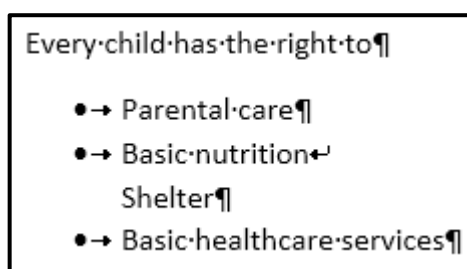
(3)
[10]

QUESTION 7: SOCIAL IMPLICATIONS

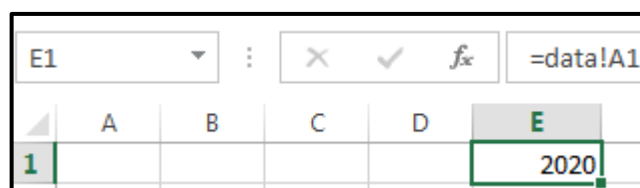
- 7.1 Many cases of internet addiction are reported.
- 7.1.1 Name TWO activities users engage in on the internet that could lead to addiction. (2)
- 7.1.2 Give TWO signs that may warn you that someone may have an internet or gaming addiction. (2)
- 7.2 State TWO potential ethical problems that arise when companies have access to big data. (2)
- 7.3 How can law enforcement authorities investigate suspected cyber criminals? (1)
- 7.4 Give ONE way in which social media is able to influence public opinion. (1)
- 7.5 State TWO negative effects of software piracy for software creators. (2)
- [10]**

QUESTION 8: SOLUTION DEVELOPMENT

- 8.1 Give ONE benefit of using styles for headings in a long word processing document. (1)
- 8.2 Suggest TWO reasons for using section breaks in a word processing document. (2)
- 8.3 Name TWO word processing features that a reviewer can use to indicate suggested changes to the author of a document. (2)
- 8.4 Study the screenshot of a word processing document below.



- 8.4.1 Why do the non-printing symbols display in the document? (1)
- 8.4.2 Why does the word 'Shelter' appear without a bullet? (1)
- 8.5 How would you use the Page Break Preview of a spreadsheet to manipulate the number of rows or columns printed per page? (1)
- 8.6 What does the exclamation mark (!) in the formula bar for cell E1 indicate in the screenshot below? (1)



- 8.7 Study the screenshot below. The formula used in cell D3 to obtain the time worked is correct, although it is not displaying the correct answer.

	A	B	C	D	E
1					
2		Time in	Time out	Time worked	
3		11:00	13:00	12:00:00 AM	
4					

What cell formatting must be applied to cell D3 to obtain the correct answer of 2 hours? (1)

- 8.8 The formula in cell B2 was copied down to calculate the VAT (cell E1) for all amounts in column A.

B2 ✕ ✓ fx =\$A\$2*\$E1						
	A	B	C	D	E	F
1				VAT	0.15	
2	R 45.00	R 6.75				
3	R 65.00	R 0.00				
4	R 78.00	R 0.00				
5	R 23.00	R 0.00				

Identify TWO mistakes in the formula that prevent the values in the cell range B3 to B5 from displaying correctly. (2)

- 8.9 Consider the formula =[Price]*[Markup], used in a calculation in a database query or report.

Why are square brackets used in this formula? (1)

- 8.10 What would happen if a =COUNT(*) function was moved from the group footer to the report footer in a database? (1)

- 8.11 What needs to be done for the text 'December holidays' to display on a web browser tab?

```
<html>
  <head> December holidays
    <title> </title>
  </head>
  <body> </body>
</html>
```

(1)
[15]



TOTAL SECTION B: 75

SECTION C**QUESTION 9: INTEGRATED SCENARIO**

Your school is hosting a cooking competition where learners will cook in teams and be judged by professional chefs. Mobile kitchens will be set up on the sports field.

- 9.1 Computing devices will be used to display the recipes and to capture the results.

Study the specifications of the following two devices:

DESKTOP COMPUTER	TABLET
 <ul style="list-style-type: none"> • 2.4 GHz CPU • 8 GB DDR4 • 256 GB Solid State • 4 GB Video Card • 21" Monitor • 4 x USB ports • Integrated 10/100/1000 Network Port • Integrated HDMI port • FHD Webcam, 1920x1080 • SD Card Slot • On-site warranty 	 <ul style="list-style-type: none"> • 1300 MHz CPU • 2 GB RAM • 16 GB internal storage • Touch screen • 25.6 cm (10.1") display • Rear camera 8 MP • 4G standard LTE, Wi-Fi • Bluetooth version BT 4.0 • 2G standard, GSM, 4G • SD Card Slot

- 9.1.1 What is the speed of the faster processor when comparing the two devices? (1)
- 9.1.2 Why is the tablet more suitable for outdoor use? (1)
- 9.1.3 State TWO ways in which to extend the storage space of the tablet. (2)
- 9.1.4 Explain why the desktop computer is better for graphics processing by referring to its specifications, other than the CPU. (1)
- 9.1.5 Explain what an on-site warranty is AND why a tablet does not usually have an on-site warranty. (2)

9.2 Competitors can contact expert cooks in real time for assistance.

9.2.1 What is the advantage for competitors of being able to communicate with expert cooks in real time? (1)

9.2.2 Name TWO types of internet connections that would be suitable to use during this competition. (2)

9.2.3 Name TWO hardware devices necessary for video/web conferencing with an expert, other than network devices. (2)

9.3 A video taken during the competition will be published online after the event.

9.3.1 Name TWO e-communication services (online platforms) where these videos can be published. You may use brand names. (2)

9.3.2 Explain how a person could use a search engine to find a video of this cooking competition. (2)

9.3.3 Name TWO camera specifications that influence the quality of the videos, other than the sensor. (2)

9.3.4 Give TWO reasons for using file compression to reduce the file size. (2)

9.4 The scores from several judges will be captured in a spreadsheet.

9.4.1 State TWO features of a spreadsheet that will assist the user to capture the scores accurately. (2)

9.4.2 The total score for each team can be calculated using the following formula:

$$=A1+A2+A3+A4$$

Which spreadsheet function can be used to achieve the same result? (1)

9.4.3 Which spreadsheet function or combination of functions can be used on the data below to extract the score given by a particular judge (e.g. Judge 2) to a particular team (e.g. Team 2)?

	A	B	C	D
1		Judge 1	Judge 2	Judge 3
2	Team 1	94	98	87
3	Team 2	87	90	74
4	Team 3	91	92	80
5	Team 4	90	94	81

9.4.4 How can a judge ensure that the formatting applied to the spreadsheet does not change even if it is viewed on another computer with a different operating system or without a spreadsheet program? (1)

[25]

QUESTION 10: INTEGRATED SCENARIO

You are working as an assistant at the weather bureau during the holidays.

- 10.1 The weather bureau must purchase a printer for office use.
- Name TWO specifications to consider when purchasing a printer, other than cost. (2)
- 10.2 The computers at the weather bureau should be protected from power surges.
- 10.2.1 What kind of damage can a power surge do to a computer? (1)
- 10.2.2 Suggest TWO environmentally friendly ways in which to dispose of a damaged computer. (2)
- 10.3 Strict security measures should be put in place by the network administrator so that not all employees have access to the server at the weather bureau.
- 10.3.1 Name the type of user that works with high-end hardware and software. (1)
- 10.3.2 The network administrator sets up access rights and a firewall.
- Give TWO reasons why physical access to the server room should be restricted as well. (2)
- 10.3.3 Give TWO reasons why the network administrator disabled the unused USB ports on the employees' computers. (2)
- 10.4 Discuss TWO benefits of grid computing for the weather bureau. (2)
- 10.5 The network administrator should always keep the software on the computers of the weather bureau updated.
- 10.5.1 A weather analysis application is returning incorrect results after a recent update.
- Give a term for the cause of the problem AND suggest a solution. (2)
- 10.5.2 Give TWO reasons why the network administrator may not want an operating system to automatically download and install updates on the networked computers. (2)

10.6 Backing up is important so that data is not lost.

10.6.1 Give TWO reasons why the weather bureau should make automatic backups. (2)

10.6.2 Suggest TWO guidelines to be included in the policy for making backups at the weather bureau, other than making regular backups or setting automatic backups. (2)

10.7 Each weather station must embed the location where photographs were taken into these photographs.

10.7.1 What technology allows for obtaining accurate location data? (1)

10.7.2 Give the term for the data embedded into a picture file that provides the location of where a photograph was taken. (1)

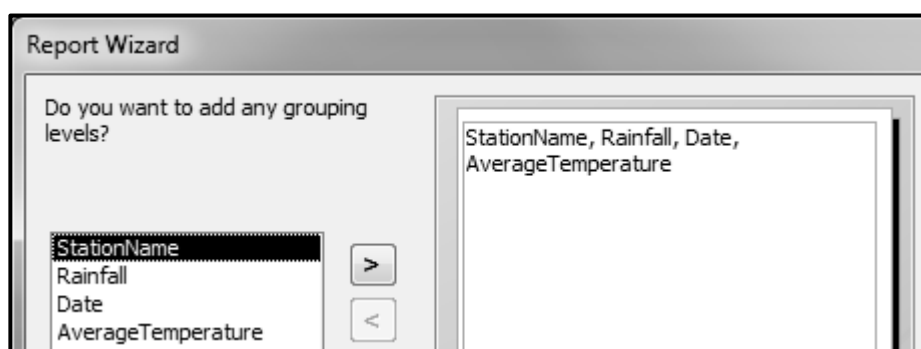
10.8 The following database table structure was created to capture daily temperatures:

StationID	Short Text
StationName	Short Text
Coordinates	Short Text
Date	Date/Time
AverageTemperature	Number
Rainfall	Number

10.8.1 Only numbers will appear in the **StationID** field, e.g. 3452, 0198, 187.

Why is the data type of this field Short Text and not Number? (1)

10.8.2 The following screen appeared during the creation of a report:



What steps should be followed to show a list of the rainfall values in ascending order for each station? (2)

[25]

TOTAL SECTION C: 50
GRAND TOTAL: 150