



# basic education

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

## **SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS**

**COMPUTER APPLICATIONS TECHNOLOGY P2**

**2019**

**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. A 2-mark question would therefore require TWO facts, etc.
8. All answers MUST be related to Computer Applications Technology.
9. Answers such as 'cheaper', 'slower'/'faster' and 'easier' will ONLY be accepted if it is used together with a reason or an explanation.
10. 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 Which ONE of the following is an example of a data cap?
- A 10 GB
  - B 100 Mbps
  - C 512 kB
  - D 2 GHz
- (1)
- 1.2 Which ONE of the following is NOT a feature of a database program?
- A Filter
  - B Sort
  - C Citation
  - D Grouping
- (1)
- 1.3 Which ONE of the following file types can NOT be opened by a spreadsheet program?
- A .xls
  - B .zip
  - C .csv
  - D .txt
- (1)
- 1.4 A higher resolution image means that the image ...
- A is made up of more pixels.
  - B requires less storage space.
  - C contains less pixel information.
  - D is made up of larger pixels.
- (1)
- 1.5 The use of virtual reality (VR) technology may benefit the user as it ...
- A requires specialised and expensive equipment.
  - B may possibly protect the user against cybercrime.
  - C gives more information on a place being visited.
  - D could be used for safer training in risky situations.
- (1)

- 1.6 The main purpose of OCR is to produce a document so that it can be ...
- A saved in PDF format.
  - B edited and formatted.
  - C saved as a picture.
  - D sent via e-mail or IM. (1)
- 1.7 The spreadsheet function NOW will always display the ...
- A date on which the spreadsheet is opened.
  - B Excel code for *hh mm ss* formatted as time.
  - C current date-time formatted as date and time.
  - D date and time on which the function was entered. (1)
- 1.8 Fake news is when ...
- A you are redirected to a false website without knowing about it.
  - B false and often sensational information is spread on social media.
  - C the source of a message is falsified to make it appear legitimate.
  - D someone tries to obtain your personal and financial information. (1)
- 1.9 Faulty software contains bugs that ...
- A damage programs by affecting the way in which a computer works.
  - B use resources by copying the code repeatedly across the programs.
  - C hide within a legitimate program and contain destructive instructions.
  - D are errors in the code that cause problems and make it unworkable. (1)
- 1.10 A database query to extract the details of teachers and learners who owe more than R10.00 is shown below.

Field:	Name	Category	TimeSpent	Charges	AmountOwed
Table:	ComputerUse	ComputerUse	ComputerUse	ComputerUse	ComputerUse
Sort:					
Show:	<input checked="" type="checkbox"/>				
Criteria:		"Teacher" And "Learner"			>10

The query will not return the desired outcome because the ...

- A criterion of the *AmountOwed* field should be '<10'.
  - B 'And' in the *Category* field should be in uppercase.
  - C 'Or' operator should be used in the *Category* field.
  - D criterion of the *AmountOwed* field should be '>=10'.
- (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–S) next to the question numbers (2.1 to 2.10) in the ANSWER BOOK, e.g. 2.11 T.

COLUMN A		COLUMN B	
2.1	Data sets that may be analysed computationally to reveal trends and patterns	A	RAM
		B	compression
2.2	A device that demonstrates the concept of convergence	C	geotagging
		D	ROM
2.3	A specific file property that can be used to search for certain files	E	information processing cycle
2.4	Type of internet connection	F	MP3 player
2.5	A method used to reduce the size of files	G	task definition
		H	GPS
2.6	The process of adding location information to a video file	I	VoIP
2.7	A type of memory needed to store permanent data and instructions	J	satellite
		K	big data
2.8	Software that provides additional functionality to a web browser	L	date
2.9	Input, output, processing, storage and communication of data	M	phablet
		N	metadata
2.10	Explains how the investigation will be carried out in a research project	O	information overload
		P	WLAN
		Q	unzip
		R	plug-in
		S	focus question

(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
<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 JPG is a commonly used file extension for picture files. (1)
- 3.2 VGA cables can deliver both audio and video data over the same cable. (1)
- 3.3 A video conference is an electronic meeting of people who can see and talk to one another even though they are at different locations. (1)
- 3.4 RSS feeds are websites that contain posts in the form of a diary. (1)
- 3.5 A form is a database object used to present a summary of data in a printable format. (1)
- [5]**

**TOTAL SECTION A: 25**

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

- 4.1 Name TWO types of users who would find the performance of a standard entry-level computer suitable to their needs. (2)
- 4.2 How does an open-source operating system, such as Linux, differ from an enterprise operating system, such as Windows? (2)
- 4.3 State TWO advantages for a student using web-based applications over installed applications. (2)
- 4.4 Give TWO practical examples of where RFID tags are used. (2)
- 4.5 Give TWO reasons why touch screens are commonly used in portable devices. (2)
- 4.6 State TWO advantages of using a micro USB port instead of the standard USB port on a smartphone. (2)
- 4.7 External hard drives and rewritable DVDs are often used for backup purposes.
- 4.7.1 Give TWO reasons why it may be better to use an external hard drive instead of a DVD to backup data. (Do NOT refer to cost in your answer.) (2)
- 4.7.2 Suggest TWO ways in which more space can be created on an external hard drive that is almost full. (2)
- 4.7.3 Give TWO reasons why files on an external hard drive could become corrupted when making backups. (2)
- 4.8 When switching on your computer, you find that there is no display on the screen.
- Other than a faulty screen, discuss TWO reasons why there is no display. (2)
- 4.9 The latest version of a program was downloaded from the internet, however, when the user runs the installer, the program does not install.
- Give TWO reasons why a program fails to install. (2)
- 4.10 Other than the cost factor, state ONE limitation of using a 3D printer. (1)
- 4.11 A correctly formatted word processing document was printed, but some text was 'cut off' at the edge of the page.
- Discuss TWO possible reasons for this. (2)

**[25]**

**QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES**

- 5.1 Many schools or businesses connect computers in a LAN.
- 5.1.1 Name the device that connects multiple computers in a LAN. (1)
- 5.1.2 Name the component in each computer that makes it possible to connect to a network. (1)
- 5.1.3 State TWO limitations of a wired LAN when compared to a wireless LAN. (2)
- 5.2 Grid computing provides flexible online computing power to institutions.
- 5.2.1 Define *grid computing*. (2)
- 5.2.2 Give ONE example of a real-life situation where grid computing could be used. (1)
- 5.3 Discuss TWO ways to automatically block unwanted content in the web browser. (2)
- 5.4 How do clients benefit when their internet connection is shaped by an ISP? (Do NOT refer to cost in your answer.) (2)
- 5.5 Live streaming and sharing of videos over the internet have become very popular.
- 5.5.1 Explain the concept of *streaming*. (2)
- 5.5.2 Discuss TWO ways in which a user can prevent/reduce interruptions (buffering) while streaming a video. (2)
- [15]**

**QUESTION 6: INFORMATION MANAGEMENT**

- 6.1 State TWO ways in which to find information if you do not have access to the internet. (2)
- 6.2 Give TWO reasons why a drop-down form field is used instead of a text form field on an electronic form. (2)

6.3 A student downloaded information from the following web page:

[https://en.wikipedia.org/wiki/Information\\_management](https://en.wikipedia.org/wiki/Information_management)

Explain why the information may not be reliable. (2)

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

	A	B	C	D	E	F	G
1	ID	Item/Venue	Field1	Date	ID	Item	Date
2	671	Keyboard, Room 60	Lower Campus	20180222	261	Graphics Card	2018/01/17
3		Room 187, Mouse	Upper Campus	4/23/2018	139	Touchpad	7/11/2018
4	873	Monitor, Room 60	Lower Campus	6/1/2018	810	Printer	31102018
5	254	Graphics Card		3/11/2018	466	Keypad	4/10/2018
6	187	USB-cable, Room 187	Upper Campus	2/15/2018	689	HDMI-port	9/21/2018
7	981	PSU, Room 35	Lower Campus	5/5/2018	834	Mouse	6/5/2018

- 6.4.1 Identify THREE problems in this spreadsheet that will affect the quality of data when it is imported into a database. (3)
- 6.4.2 Other than the problems identified in QUESTION 6.4.1, why would it NOT be possible to create a meaningful graph using the data above? (1)

**[10]**

**QUESTION 7: SOCIAL IMPLICATIONS**

- 7.1 Employers should implement a policy to buy only ergonomically designed computers to prevent RSI/CTS among their workers.
- 7.1.1 Describe ONE ergonomically designed device that would prevent CTS (carpal tunnel syndrome). (1)
- 7.1.2 Discuss TWO reasons why implementing such a policy would be a good course of action for an employer. (2)
- 7.2 State TWO security measures to prevent computer theft at a school, other than fitting burglar bars and safety gates to the computer centre. (2)
- 7.3 The public has access to software that is published under various terms and conditions.
- 7.3.1 What laws protect the rights of people who create original content? (1)
- 7.3.2 What is an *EULA*? (Do NOT simply write out the acronym.) (1)
- 7.3.3 Give TWO reasons why people should NOT use pirated software. (2)
- 7.4 Why is it potentially risky to use Bitcoin to buy and sell items? (1)
- [10]**

**QUESTION 8: SOLUTION DEVELOPMENT**

- 8.1 Which feature of a word processor can be used to mark specific places in a document so that a user can go to these places quickly? (1)
- 8.2 How could a word processing document be saved so that the text can be edited on another computer that does not have a word processor installed? (1)
- 8.3 Why are section breaks inserted in a word processing document? (1)
- 8.4 A database contains the surnames and names of learners.

The following criterion appears in the *Surname* field as a database query:

"Like Smi\*"

- 8.4.1 Give the term used to describe the asterisk (\*) when used in the criterion. (1)
- 8.4.2 Give the purpose of using the asterisk in the query. (2)
- 8.5 The details of client orders appear in the *Orders* worksheet, and the stock codes and descriptions appear in a table in the *Codes* worksheet, in the same spreadsheet, as shown below.

ORDERS FOR JUNE 2019			
CLIENT	QUANTITY	CODE	DESCRIPTION
Basson, T	2	121	
Mashaba, B	5	123	
Mushwana, M	4	123	
Naicker, C	6	129	
Smith, G	8	131	
April, A	3	121	
...	...	...	...

1: Details of client orders

STOCK	
CODE	DESCRIPTION
129	Mouse
127	Notebook
123	Printer
125	Scanner
131	Tablet

2: Stock codes and descriptions

- 8.5.1 Which spreadsheet function would you use in the *Orders* worksheet to display a product description for every code? (1)
- 8.5.2 How can you ensure that the function will work correctly when you copy it down for all the clients in the *Orders* worksheet? (1)
- 8.5.3 What change needs to be made to the *Stock* table in the *Codes* worksheet to ensure that the function will not return an error message? (1)
- 8.6 The function =MAX(D2:D5) was entered into a cell.  
Why would the text '=MAX(D2:D5)' display in the cell instead of the required result of the function, e.g. 25? (1)

8.7 Study the screenshot below and answer the question that follows.

	A	B	C
1	<b>Name</b>	<b>Grade</b>	<b>Percentage</b>
2	Mark	3	80
3	Zweli	4	75
4	John	5	82
5	Thulani	3	85
6	Julian	3	72
7			
8		=COUNTIFS(B2:B6;"=2";C2:C6;">70")	

The function in cell B8 should determine the number of Grade 3 learners who obtained 80% or above.

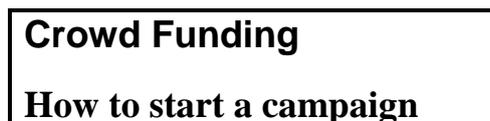
Give TWO reasons why the function in cell B8 would not return the correct result.

(2)

8.8 A website was designed using the following code:

```
<html>
  <head>
    <title>Fund-raising</title>
  </head>
  <body>
    <h1>< font style="Arial">Crowd Funding</font>
    <p> How to start a campaign</p>
  </body>
</html>
```

There are errors in the code, and the web page actually displays as follows:



The designer wanted the code to display as follows:



8.8.1 Suggest a change to the code so that all the text in the body section will display in Arial font.

(1)

8.8.2 Suggest a change to the code so that the text 'How to start a campaign' will NOT appear formatted as a heading.

(1)

8.8.3 Where will the text 'Fund-raising' appear when the page is displayed in a browser?

(1)

[15]

**TOTAL SECTION B: 75**

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

Your school would like to start a learner academic support programme that uses ICTs. The school needs your assistance to make decisions regarding equipment and software for the learning centre.

- 9.1 Computers are required for the learning centre.
- 9.1.1 Give a reason why hard disk drives would be a better choice than solid-state drives for these computers. (1)
- 9.1.2 All the computers in the learning centre have 4 GB RAM.  
Suggest TWO reasons why more RAM should be installed. (2)
- 9.1.3 Give TWO reasons why user profiles would be necessary. (2)
- 9.2 The centre administrator uses office suite software to manage learner attendance and learner performance.
- 9.2.1 State TWO benefits of using a database form to allow learners to enter their personal details into the database, rather than entering the data directly into the database table. (2)
- 9.2.2 Name the word processing feature that could be used to generate individual notices to parents using the data in a spreadsheet. (1)
- 9.3 Learners will be doing self-study at home using a tutoring app on their smartphones.
- 9.3.1 Name TWO internet services that teachers could use to share educational content with their learners. (2)
- 9.3.2 Suggest TWO ways in which a learner could ensure that the battery of his/her smartphone will not drain quickly. (2)
- 9.3.3 State TWO ways in which to evaluate a tutoring app before it is downloaded, to see if it will suit your requirements. (Do NOT refer to cost in your answer.) (2)
- 9.3.4 Why could study group participants often use the same tutoring app, even though they may not all have the same operating system on their devices? (1)

- 9.4 An online study group was created using social media to communicate subject-related content.  
Give TWO reasons why learners should not post irrelevant content on this study group. (2)
- 9.5 State TWO ways in which the school could ensure that the computing devices in the learning centre use less electricity. (2)
- 9.6 One of the governing body members suggests that they buy a UPS.
- 9.6.1 What is the function of a UPS? (1)
- 9.6.2 Why would a UPS not help to save electricity? (1)
- 9.7 The centre administrator is responsible for the maintenance of the software in the learning centre.
- 9.7.1 What is the purpose of a patch? (1)
- 9.7.2 Which system software utility program can help the administrator to improve the overall system performance of each computer? (1)
- 9.8 Shareware programs are used at the learning centre.  
State TWO ways in which shareware programs will respond at the end of the trial period. (2)
- [25]**

**QUESTION 10: INTEGRATED SCENARIO**

A school club called TADA (Teenagers Against Drug Abuse) wants to use ICTs in their campaign to raise awareness of the consequences of drug abuse.

- 10.1 Smartphones will be purchased for club members.
- 10.1.1 Other than a micro USB or USB port, which hardware component on the smartphone would allow more storage to be added to it? (1)
  - 10.1.2 Why do many smartphones have a front-facing camera in addition to a rear camera? (1)
  - 10.1.3 Explain TWO requirements for using NFC to share pictures. (2)
  - 10.1.4 Bluetooth and Wi-Fi are technologies often found on mobile devices.  
Explain what these two technologies have in common. (1)
- 10.2 The club created and published a website containing information related to drug abuse.
- 10.2.1 Give TWO reasons why the club published a website. (2)
  - 10.2.2 State TWO ways to ensure that the website does not offend sensitive viewers. (2)
  - 10.2.3 State TWO ways to make the website user-friendly. (2)
  - 10.2.4 How would viewers know that the website is a secure site? (1)
  - 10.2.5 Give TWO reasons why some website elements may not display when the HTML code is run in the web browser. (2)
- 10.3 The club would like members to use their e-mail addresses to register on the website.
- 10.3.1 State TWO measures the club can implement to keep their members' data secure. (2)
  - 10.3.2 Members complain that they receive unwanted e-mails after registering on the website.  
Give the term for these e-mails AND suggest a solution to this problem. (2)
- 10.4 Suggest TWO reasons why it would not be a good idea to set up a Bluetooth network to share the internet connectivity across the school. (2)

- 10.5 The secretary of the club created a database report grouped by the type of addiction. He used the incorrect function **=sum([Name])** to display the number of learners affected by each type of problem.
- 10.5.1 What database function should the secretary use to calculate the number of learners affected? (1)
- 10.5.2 In which part of the report should the secretary place a function to calculate the number of learners affected by each problem? (1)
- 10.6 The school club has identified the need to set up a drug rehabilitation centre in the community. They have decided to investigate the possibility of using crowd funding to raise funds to establish this centre.
- 10.6.1 Briefly explain the concept of *crowd funding*. (2)
- 10.6.2 Give ONE reason why crowd funding is NOT a good idea to raise the needed funds for this project. (1)
- [25]**
- TOTAL SECTION C: 50**  
**GRAND TOTAL: 150**