



# basic education

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

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**COMPUTER APPLICATIONS TECHNOLOGY P2**

**NOVEMBER 2015**

**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. Generally, one mark is allocated per action; therefore, a 2-mark question would usually require TWO actions, et cetera.
8. Write neatly and legibly.

**SECTION A****QUESTION 1: 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 number (1.1–1.10) in the ANSWER BOOK, for example 1.11 T.

COLUMN A		COLUMN B	
1.1	A dedicated device that can be used to withdraw cash from a bank account	A	fibre-optic cable
		B	switch
1.2	The process of trying to resolve hardware or software problems	C	RSS feed
		D	COUNTIF
1.3	A medium used for sending and receiving data at a very high speed	E	proofing
		F	SUMIF
1.4	A device that is used to connect computer devices in a LAN	G	Intranet
1.5	The act of passing off someone else's work as your own	H	facial recognition
		I	troubleshooting
1.6	A website used by a company to share information with its employees only	J	cloud computing
		K	twisted pair cable
1.7	The process of interacting online with people who share similar interests and activities	L	formatting
		M	copyright
1.8	The process of checking documents for spelling and grammar errors	N	ATM
		O	plagiarism
1.9	A biometric security measure that could control access to a user's computer or device	P	router
		Q	WAN
1.10	A spreadsheet function used to determine the number of cells where the content meets specific criteria	R	social networking
		S	cellphone banking

(10 x 1)

**[10]**

**QUESTION 2: 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 number (2.1–2.10) in the ANSWER BOOK, for example 2.11 D.

- 2.1 Which ONE of the following would usually be viewed in a browser?
- A WWW
  - B PAN
  - C USB
  - D UPS
- (1)
- 2.2 ... is a shortcut commonly used in many programs to save a file.
- A Alt + S
  - B Shift + S
  - C Ctrl + S
  - D Alt + Shift + S
- (1)
- 2.3 Which ONE of the following search phrases would typically exclude or ignore the word 'Android' when using a search engine to search for the word 'tablets'?
- A tablet AND Android
  - B tablet -Android
  - C tablet OR Android
  - D tablet without Android
- (1)
- 2.4 Which ONE of the following is directly associated with e-mail?
- A URL
  - B html
  - C SSD
  - D Bcc
- (1)
- 2.5 A(n) ... is NOT an example of optical storage.
- A CD
  - B DVD
  - C HDD
  - D BD
- (1)
- 2.6 Which ONE of the following is a potential threat to the environment, caused by the widespread use of technology?
- A Increased power consumption
  - B A paperless office
  - C Refilling ink cartridges
  - D Repetitive strain injuries
- (1)

- 2.7 Which ONE of the following database objects allows a user to enter or view data one record at a time?
- A Table
  - B Query
  - C Form
  - D Report
- (1)
- 2.8 Which ONE of the following is the abbreviation for the largest unit used to measure storage?
- A MB
  - B GB
  - C TB
  - D KB
- (1)
- 2.9 The ... is a hardware component that allows a computer to connect to and communicate via a network.
- A BIOS
  - B GPU
  - C ROM
  - D NIC
- (1)
- 2.10 Which ONE of the following is the most likely reason why all files frequently disappear from the same USB flash drive?
- A The flash drive was connected to a USB 3.0 port.
  - B The files are backed up automatically.
  - C The flash drive is 'Read Only'.
  - D The files were hidden by a virus.
- (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 statements TRUE. (You may not simply use the word 'NOT' to change the statement.)

**EXAMPLES:**

QUESTION	ANSWER
Computer program instructions are executed by the <u>CPU</u> .	True
Dot matrix, inkjet and laser are types of <u>keyboards</u> .	False – printers

- 3.1 The www is the multimedia section or service of the Internet. (1)
- 3.2 The hyperlink is the most suitable database field type for physically storing images in a field. (1)
- 3.3 Hacking refers to the use of techniques like phishing and e-mail spoofing to trick a user into giving out confidential details, such as passwords and account numbers. (1)
- 3.4 The spreadsheet feature which formats cells according to the values they contain is called number formatting. (1)
- 3.5 An e-mail message that warns the reader about a problem such as a virus that does not actually exist is called a hoax. (1)

**[5]****TOTAL SECTION A: 25**

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

Study the specifications of the two computers below and answer the questions that follow:

COMPUTER A	COMPUTER B
i3 1.7 GHz CPU	i7 3.0 GHz CPU
4 GB DDR3, 1 333 MHz RAM	8 GB DDR3, 1600 MHz RAM
500 GB hard drive	1 TB hard drive
2 GB integrated HD graphics card	4 GB dedicated graphics card
Multi-DVD writer	Multi-DVD writer
USB 3.0	USB 3.0
802.11 a/b/g	802.11 a/b/g/n
2 MP webcam	8 MP webcam
19" LCD monitor	23" touch screen
Windows 7	Windows 8.1 Professional
USB keyboard	Wireless keyboard

- 4.1 State TWO hardware specifications for Computer B, besides the graphics card, that indicate that it should be more 'powerful' or provide better performance than Computer A. (2)
- 4.2 Explain the difference between *RAM* and a *hard drive* in terms of each one's function. (2)
- 4.3 Name TWO examples of power users who would benefit from installing a separate graphics card such as the one listed for Computer B. (2)
- 4.4 The term 'convergence' refers to a common trend in the development of computer hardware and devices.
- 4.4.1 Explain the term *convergence*. (1)
- 4.4.2 Give ONE example of convergence. (1)
- 4.5 Which item in the list of specifications would you use to connect a printer to Computer A? (1)
- 4.6 Which type of system software is specifically designed to allow a computer to control and communicate with a device such as a printer? (1)
- 4.7 Name the type of software required to change a scanned image of text into editable text. (1)
- 4.8 Explain why the webcam specification for Computer B could possibly cause it to use more bandwidth than the webcam specification for Computer A. (2)

- 4.9 Give TWO advantages of SSDs (solid-state drives) over traditional hard drives. (2)
- 4.10 Name a hardware device that is needed to connect a computer to the Internet. (1)
- 4.11 Voice recognition software could be used on the computers.
- 4.11.1 Name a hardware device that is NOT specified for either Computer A or B, but which would be necessary for voice input. (1)
- 4.11.2 State TWO potential disadvantages of using voice recognition software. (2)
- 4.12 State TWO possible software-related issues, excluding malware, that could cause a sudden decrease in the performance of a computer. (2)
- 4.13 Name TWO advantages of having a POS ('point of sale') system installed in a shop. (2)
- 4.14 State TWO basic functions of an operating system, excluding tasks performed by utilities such as the disk defragmenter. (2)
- [25]**



**QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES**

- 5.1 State TWO benefits of using VoIP. (2)
- 5.2 What is the main difference between a *server* and a *client* on a network in terms of their role or function? (1)
- 5.3 What is the general name for the type of network that extends over a large area such as a province? (1)
- 5.4 What is *grid computing*? (2)
- 5.5 Name ONE thing that you will see in your web browser to show that you are connected to a secure site when using online banking. (1)
- 5.6 A video on a web page won't play in your browser, even after you have refreshed the page.  
Suggest ONE way to solve this problem other than using another browser or trying to view the video on another computer or website. (1)
- 5.7 Users commonly upload and download data using the Internet.
- 5.7.1 Explain the difference between the terms *uploading* and *downloading*. (2)
- 5.7.2 How does the speed of data transmission of an ADSL line differ in terms of downloading and uploading? (1)
- 5.8 State TWO alternative ways of sending large files via the Internet, other than sending it as an e-mail attachment. (2)
- 5.9 Briefly explain what *web caching* is AND also the main advantage it provides. (2)

**[15]**

**QUESTION 6: INFORMATION MANAGEMENT**

- 6.1 Motivate why you would use a questionnaire or survey to obtain information, even if you have access to so much information on the Internet. (1)
- 6.2 Give TWO reasons for using closed questions in a questionnaire or survey. (2)
- 6.3 State TWO general features of spreadsheets that make them suitable for data analysis. (2)
- 6.4 What would you need to add to a word processing document to create an automatically generated bibliography? (1)
- 6.5 Name the word processing feature that can be used to automatically indicate the different changes made to a document by various editors or users. (1)
- 6.6 State TWO indications that information found on a website may not be accurate. (2)
- 6.7 Why should you include the date when information was retrieved from the websites in a bibliography? (1)
- [10]**

**QUESTION 7: SOCIAL IMPLICATIONS**

- 7.1 State TWO operating system settings that can be changed to improve battery life by saving power on a portable computer. (2)
- 7.2 State TWO different actions that would make someone guilty of piracy in an ICT context. (2)
- 7.3 Give advice to someone who cannot afford a fully licensed copy of the Windows 8.1 operating system by giving TWO possible legal solutions to this problem. (2)
- 7.4 Suggest TWO ways to make it easier for people with poor eyesight to use a website. (2)
- 7.5 Briefly explain what *information overload* is AND how it affects productivity specifically. (2)
- [10]**

**QUESTION 8: SOLUTION DEVELOPMENT**

8.1 A word processing application allows a user to create a mail merge.

8.1.1 State TWO possible data sources that can be used for a mail merge. (2)

8.1.2 Why do you need to insert merge fields into a mail merge document? (1)

8.2 Study the following screenshot from a spreadsheet:

	A	B	C	D	E
1	<b>Name</b>	<b>Surname</b>	<b>Age</b>	<b>Working</b>	<b>Pension</b>
2	Ben	Franklyn	50	Yes	=IF(AND(C2>=60,D2="No"),"Pension", "")
3	George	Washington	67	No	
4	Barak	Obama	52	No	
5	Ronald	Reagan	61	No	

8.2.1 Examine the function in cell E2.

Explain, in your own words, the TWO criteria for a person to qualify for a pension according to this function.

Do NOT quote from or refer directly to the function in your answer. (2)

8.2.2 What would the function display in cell E2? (1)

8.3 Give ONE example of where or why you would use the 'paste special' feature of a spreadsheet program instead of the normal paste function. (1)

8.4 The HTML code of a web page contains the following line:

```
<!-- School information here -->
```

8.4.1 What is the purpose of this type of HTML code (tag)? (1)

8.4.2 What is displayed by this HTML code when the web page is displayed in a browser? (1)

8.5 What is the purpose of adding the 'Alt' section in the HTML code below?

```
 (1)
```

8.6 Study the screenshot below of the structure of a table that was created to keep track of items that a computer shop has in stock.

Field Name	Data Type	
StockID	Number	Unique number assigned to each item
Category	Text	The item category, e.g. CPU, motherboard, RAM, etc.
Description	Text	The specific model, e.g. Intel i5 2.5 GHz
Number in Stock	Number	The number of items currently in stock
Price per unit	Currency	The price each unit will be sold for

8.6.1 Why would it NOT be necessary to set the properties of the *StockID* field to be a required field? (1)

8.6.2 Which feature or property could be used in the *Number in stock* field to ensure that no number larger than 100 can be entered? (1)

8.7 Processors are listed in the *Category* field as CPU.

The query below (based on the **Stock** table described in QUESTION 8.6) was created to find all the CPUs of which there are fewer than 10 in stock.

Field:	[StockID]	[Category]	[Description]	[Number in Stock]
Table:	Stock	Stock	Stock	Stock
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		"CPU"		
or:				<10

8.7.1 Briefly explain why this query will NOT return the correct data AND how it can be corrected. (2)

8.7.2 Which field in this query will NOT be displayed when the query is run? (1)  
[15]

**TOTAL SECTION B: 75**

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

A school wishes to set up a computer network in their library for learners to do research for their projects. Ms Mabona, the CAT teacher, has agreed to help the librarian, Mr Joseph, with any questions concerning computers.

9.1 State ONE ergonomic consideration that should be taken into account when purchasing chairs for the learners to work on the computers. (1)

9.2 One of the programs Mr Joseph wants to buy for the library has the following minimum system requirements:

Dual core 1.8 GHz 2 GB RAM 5 GB hard drive space Windows 8 or 8.1 1024 x 768
--

9.2.1 What does the term *minimum system requirements* mean in this context? (2)

9.2.2 Ms Mabona recommends that the school buy computers with higher specifications than the requirements above.

Give TWO reasons why this is good advice. (2)

9.2.3 To which device does the '1024 x 768' specification refer? (1)

9.2.4 Name TWO potential disadvantages of using a proprietary operating system such as Windows instead of an OSS (open source software) version. (2)

9.2.5 Mr Joseph wants to install the new program, but the hard drive on the computer currently does not have enough free space.

Name TWO possible ways in which he can free up disk space on the existing hard drive. (2)

9.2.6 Mr Joseph also has the option of using web-based applications.

Outline TWO possible reasons why web-based applications would NOT be a good solution for the school. (2)

9.3 Mr Joseph was advised to install a service pack for his office suite.

Give TWO advantages or benefits of installing a service pack. (2)

- 9.4 Mr Joseph would like to order a printer for the library for the learners to print their projects.
- 9.4.1 Give TWO advantages of having a card reader or spare USB port on a printer.  
**NOTE:** This excludes connecting the printer to the USB port. (2)
- 9.4.2 Mr Joseph has received a spreadsheet with the details and prices of all printers that would work in his situation.  
What spreadsheet feature could he use to list only a specific type of printer? (1)
- 9.4.3 State TWO ways in which Mr Joseph can reduce the amount of paper used by learners. (2)
- 9.4.4 State TWO environmentally-friendly ways of managing empty ink cartridges. (2)
- 9.5 Mr Joseph has bought a scanner for the library.
- 9.5.1 After opening the box and unpacking the contents, he noted that this type of scanner does not have a CD with drivers.  
Where could the drivers for the scanner be found or obtained from, other than a shop? (1)
- 9.5.2 Explain what each of the following terms indicate regarding the scanner:  
(a) Colour depth  
(b) dpi (2)
- 9.6 The computers in the library will be connected to the Internet.
- 9.6.1 Give TWO advantages of using the Internet for doing research instead of the books in the library. (2)
- 9.6.2 Name the class or type of software that should be used to prevent unauthorised access to the computers on the network from the Internet or from the computers to the Internet. (1)
- 9.6.3 Learners have used Wikipedia for their research.  
What is a *wiki*? (2)

- 9.7 Learners and staff members are encouraged to use cloud storage to save their work.
- 9.7.1 Name TWO potential advantages of using cloud storage instead of a flash drive to save data and information. (2)
- 9.7.2 Name ONE way in which staff members can ensure that their work is backed up to the cloud on a regular basis. (1)
- 9.8 A weekly art class will be streamed live over the Internet. Learners will be able to participate via a video conference.
- 9.8.1 Name ONE input device that should be installed on the computers for the video conference to take place. (1)
- 9.8.2 State TWO advantages in terms of teaching and learning of using video conferencing as outlined in this scenario. (2)
- 9.8.3 State the main advantage of streaming a video. (1)
- 9.8.4 Mr Joseph has to choose between using a large computer screen and a data projector for the video conference.
- Give TWO reasons why using a large computer screen might be preferable in this context. (2)
- 9.9 Ms Mabona has recommended that the server be placed in a room with biometric access control.
- 9.9.1 Why should the server be kept in such a room? (1)
- 9.9.2 Give TWO limitations that Mr Joseph should be aware of regarding biometric fingerprint security, besides any cost-related issues. (2)
- 9.10 Give TWO reasons for using a database instead of a spreadsheet to record information about all the books in the library. (2)
- 9.11 Mr Joseph created a database to enter the information of all the books.
- Recommend the most suitable data type for each of the following fields:
- 9.11.1 The *Cost* field, which will store and display the replacement cost of each book in 'Rand' format (1)
- 9.11.2 The *ISBN* field, which will contain the ISBN number of each book, for example 918-6-619-42299-5 (1)
- 9.11.3 The *Overview* field, which will contain a summary of 500 to 1 000 words describing each book's contents (1)
- 9.11.4 The *Cover* field, which will store a picture of the outside cover of each book within the field itself (1)

- 9.12 Mr Joseph has a database with records of all the people who have contributed to the project. He would like to create a report of the top 10 donors in terms of the total amounts they have donated to the project.

Broadly describe the steps he should follow to create this report in the database.

(3)

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