



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

FEBRUARY/MARCH 2016

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 fact; therefore, a 2-mark question would usually require TWO facts, 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 handheld computing device which can also be used to make and receive calls	A	ROM
		B	report
1.2	A small program that allows the operating system to communicate with the hardware and to control it	C	blog
		D	GPS device
1.3	A type of memory that permanently stores instructions used while booting a computer	E	LAN
		F	RSS
1.4	Concepts of hardware design that considers the health and comfort of users	G	utilities
		H	questionnaire
1.5	A network that covers a limited area	I	query
		J	RSI
1.6	A general term used to describe a class of software that negatively affects your computer	K	phablet
		L	WAN
1.7	A service that automatically delivers new content or notifications of new content from websites	M	driver
		N	import
1.8	An object in a database that uses criteria to retrieve specific records or information	O	RAM
		P	malware
1.9	An instrument used to gather information from people	Q	ergonomics
		R	podcast
1.10	To transfer data from a spreadsheet for use in a database	S	formatting

(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 is a technology commonly used to connect a variety of different devices to a computer?
- A UPS
 - B GUI
 - C USB
 - D SSD
- (1)
- 2.2 The/An ... retains the data stored on it even if the power goes off.
- A RAM
 - B HDD
 - C LED
 - D CPU
- (1)
- 2.3 A/An ... is a device that provides power to a computer system.
- A PSU
 - B ROM
 - C ATM
 - D GPS
- (1)
- 2.4 Which ONE of the following is NOT an example of a system utility?
- A Task Manager
 - B Disk Cleanup
 - C Disk Defragmenter
 - D Word Processor
- (1)
- 2.5 Which ONE of the following is NOT considered a part of the general information processing cycle used on all computers?
- A Input
 - B Analysis
 - C Output
 - D Storage
- (1)
- 2.6 Which ONE of the following refers to a private internal network which can be accessed only by employees from outside the company building?
- A VPN
 - B RSS
 - C MySpace
 - D Extranet
- (1)

- 2.7 Which ONE of the following is a company that provides services such as Internet access?
- A HTTP
 - B IP
 - C ISP
 - D URL
- (1)
- 2.8 ... is an example of an e-commerce website.
- A YouTube
 - B eBay
 - C Spotify
 - D iCloud
- (1)
- 2.9 Which ONE of the following is an e-mail field used to add another e-mail address in order to send a copy of the same message to a different recipient?
- A CD
 - B HD
 - C OS
 - D CC
- (1)
- 2.10 ... refers to an injury that can occur from the continuous use of an input device such as a keyboard.
- A RSI
 - B OMR
 - C RFID
 - D CPU
- (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. (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 input mask feature of a database ensures that no two records can be identical in a table. (1)
- 3.2 HTML is a markup language used to create websites. (1)
- 3.3 '*Africa' can be used as a criterion for a field in a database query to return all the records starting with the word 'Africa' in that specific field. (1)
- 3.4 Posing as someone else online is considered to be bandwidth theft. (1)
- 3.5 Freeware is a general term for e-mails sent to you that you did not request and that often contain advertising. (1)

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

SECTION B**QUESTION 4: SYSTEMS TECHNOLOGIES**

- 4.1 Give TWO reasons for converting a document to PDF format. (2)
- 4.2 What is the difference between *system software* and *application software*? (2)
- 4.3 State the TWO steps you would need to follow to close an application that has stopped working, without restarting the computer or switching it off. (2)
- 4.4 An operating system includes a number of different utility programs.
- 4.4.1 What kind of utility program is used to reduce the size of files? (1)
- 4.4.2 Describe what *printer queuing* is in terms of how it is used. (2)
- 4.5 Data needs to be kept safe due to security threats.
- 4.5.1 What type of software secretly collects private information about a user? (1)
- 4.5.2 Explain what a *firewall* is AND what its general function is. (2)
- 4.6 Explain what *adware* is AND state TWO problems related to adware. (3)
- 4.7 Explain how adding more RAM to a computer can improve the overall system performance of the computer. (2)
- 4.8 State TWO potential disadvantages of using a wireless keyboard or mouse. (2)
- 4.9 What does it mean when you say that RAM is *volatile*? (1)
- 4.10 State TWO potential disadvantages of using online applications. (2)
- 4.11 State ONE situation in which it might be necessary to restart your computer other than when it freezes or hangs. (1)
- 4.12 State TWO advantages of using HDMI technology instead of VGA technology. (2)
- [25]**

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

- 5.1 Briefly explain the term *broadband*. (1)
- 5.2 Explain why it is not possible to connect to a Wi-Fi network using a 3G dongle. (1)
- 5.3 State TWO potential advantages of ADSL compared to 3G for Internet access at home. (2)
- 5.4 State TWO aspects or properties of an Internet connection that are required, or need to be considered, for frequent streaming of videos in high definition. (2)
- 5.5 How can a group of friends access the Internet simultaneously from their smartphones if only one of them has airtime/data? (2)
- 5.6 Name TWO ways or features that are provided in web browsers or on web pages to navigate from one website to another. (2)
- 5.7 A file download from the Internet terminated before the file could be fully downloaded.
State TWO strategies to prevent it from happening again. (2)
- 5.8 What is the name of the technology or protocol used by communication application software like Skype? (1)
- 5.9 A variety of plug-ins can be installed on web browsers.
- 5.9.1 Why would you use or need browser plug-ins? (1)
- 5.9.2 Give ONE common example of a browser plug-in. (1)
- [15]**

QUESTION 6: INFORMATION MANAGEMENT

- 6.1 Explain *plagiarism* in general terms. (1)
- 6.2 Which word processing feature must be applied to headings to allow them to appear in an automatic table of contents? (1)
- 6.3 What is the difference in function between a *citation* and a *footnote*? (2)
- 6.4 Name TWO possible layout errors in the questionnaire below.

Name: _____ Class: _____ ID Number ____

Please fill in your seven subjects in the table below.

Grade: _____ Surname: _____

Cellphone number:

--	--	--	--	--	--	--	--

- 6.5 Give TWO reasons why it would be better to conduct a survey online instead of using a paper-based questionnaire. (2)
- 6.6 State TWO features of a database that can be used to ensure that the data input is accurate. (2)

[10]

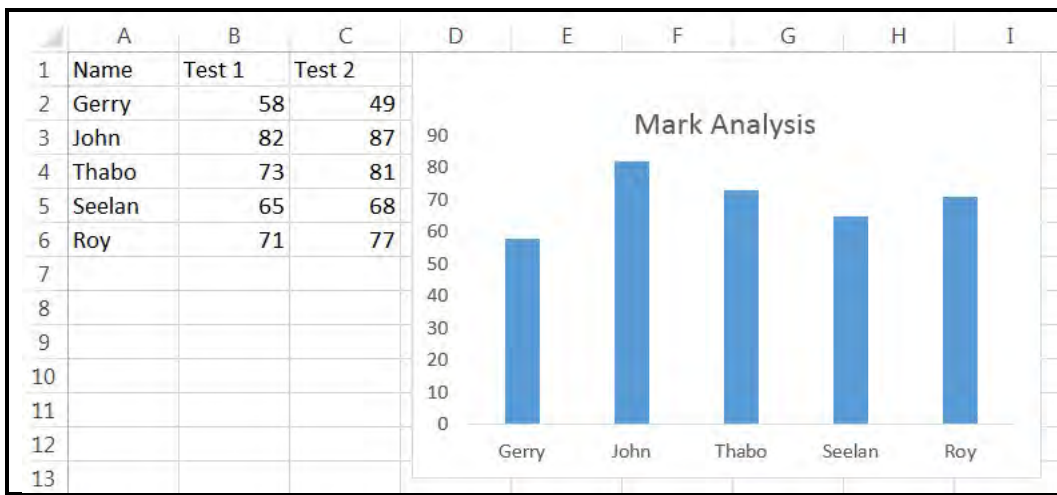
QUESTION 7: SOCIAL IMPLICATIONS

- 7.1 Name the principle or give the acronym that describes how human error or invalid data affects the quality and accuracy of output. (1)
- 7.2 Many websites insist that you use a strong password.
State TWO properties or characteristics of a strong password. (2)
- 7.3 Name a feature of instant messaging applications or social networks that can help reduce online harassment or bullying. (1)
- 7.4 State ONE potential negative effect or consequence of using pirated software. (1)
- 7.5 State TWO indications that might suggest that an e-mail is a phishing e-mail. (2)
- 7.6 You need to send a small program (.exe) file as an e-mail attachment but the e-mail program reports that it cannot accept .exe files.
- 7.6.1 What is the most likely reason why e-mail programs are set up to reject or block program or executable (.exe) files? (1)
- 7.6.2 Suggest a way to trick the e-mail program into accepting this file as an attachment. (1)
- 7.6.3 What is the name given to the set of guidelines used when composing an e-mail such as 'Do not send very large attachments'? (1)

[10]

QUESTION 8: SOLUTION DEVELOPMENT

- 8.1 Where should one place text in a word processing document so that it would automatically appear on every page? (1)
- 8.2 Which specific feature of a word processing program would you use to ensure that the first line of a paragraph starts against the left margin while the rest of the lines in the paragraph are further away from the margin? (1)
- 8.3 Study the screenshot below and answer the questions that follow.



- 8.3.1 How would you select the contents of columns A and C simultaneously to create a graph (without making any changes to the spreadsheet)? (2)
- 8.3.2 State TWO chart/graph features you could use or add to make the graph easier to interpret. (2)
- 8.3.3 Why would the following function not display the average of the marks for Test 1 in column B:

=AVG(B2:B6) (1)
- 8.4 Name the database object that helps to present information in a format that is the most suitable for printing. (1)
- 8.5 Explain what the purpose of the AutoNumber data type in a database table is by referring to how it works. (2)
- 8.6 State TWO advantages of using a query to extract information from a database instead of a filter. (2)
- 8.7 When using a picture on a website, why should the picture be stored in the same folder as the HTML file? (1)

- 8.8 The following HTML code was used to format a heading on a web page to bold:

```
<h1><b><i> Technology <h1></b></i>
```

Identify the problems or mistakes that appear in the HTML code above.

(2)
[15]

TOTAL SECTION B: 75

SECTION C**QUESTION 9: INTEGRATED SCENARIO**

Your school has been selected to test a new system where tablets and e-books will be replacing paper-based textbooks. The network infrastructure in the school will have to be upgraded and tablets purchased for each learner and staff member.

9.1 The following tablet is one of the options being considered:

- 8.0" tablet
- 1.4 GHz Quad core CPU
- 16 GB internal storage
- 2 GB RAM
- MicroSD slot
- 8 MP rear-facing camera
- 2 MP front-facing camera
- Android 4.4 KitKat
- 802.11 a/b/g/n, Bluetooth 4.0 and GPS
- Voice recognition and security software

- 9.1.1 What is the size of the screen of the tablet? (1)
- 9.1.2 Which operating system is installed on the tablet? (1)
- 9.1.3 What will the MicroSD slot be used for on this tablet? (1)
- 9.1.4 Why will the rear-facing camera typically have a higher resolution than the camera facing the user? (2)
- 9.1.5 What is the speed of the processor in the specifications? (1)
- 9.1.6 Give ONE possible use for voice recognition software other than for security purposes. (1)
- 9.1.7 Give TWO situations where a laptop would possibly be more suitable to use than a tablet. (2)
- 9.1.8 What would the information provided by a GPS device indicate to a user? (1)
- 9.1.9 What does the '802.11 a/b/g/n' specification indicate in terms of the capabilities of the tablet? (1)

- 9.2 In order for the tablets to be used effectively at school, they need to be connected to a wireless network.
- 9.2.1 State ONE situation in which it would be better to install a wired network instead of a wireless network. (1)
- 9.2.2 The school has the option of introducing BYOD.
Explain what *BYOD* is. (Do NOT simply expand the acronym.) (1)
- 9.3 Staff and learners will be able to add notes in their e-books. They will have to make regular backups of these notes in case a tablet is lost or stolen.
- 9.3.1 Give TWO reasons why backups might not be done on a regular basis. (2)
- 9.3.2 State TWO advantages of using cloud storage for backups. (2)
- 9.4 The software that is used to control the tablets has a bug that prevents it from performing as it should.
- 9.4.1 What is the main difference between a *software bug* and a *virus*? (2)
- 9.4.2 Explain the difference between a *patch* and a *service pack* in terms of fixing software bugs. (2)
- 9.4.3 Many programs allow you to give them permission to automatically download and install patches and updates without you having to do so yourself.
State TWO potential disadvantages of this approach. (2)
- 9.5 A document that a teacher needed has been deleted from her laptop; however, she still has a printed copy.
- 9.5.1 Which hardware device would she need to make a digital copy of the document? (1)
- 9.5.2 Explain what *OCR software* is and how it could assist the teacher in the scenario above. (2)
- 9.5.3 State ONE limitation of OCR software. (1)

- 9.6 The Internet will give learners the opportunity to access large amounts of information when doing research.
- 9.6.1 State TWO ways in which learners can avoid becoming victims of information overload. (2)
- 9.6.2 State TWO ways in which learners can narrow down results of an Internet search to produce fewer but more relevant results. (2)
- 9.6.3 What is the difference between a *search engine* and a *web browser*? (2)
- 9.7 Some of the tablets cannot connect to the wireless network.
- Give TWO possible reasons for this if there is nothing wrong with the tablet or the network. (2)
- 9.8 The school principal has to inform parents in a letter about an important event at the school.
- 9.8.1 The letters will be placed in personalised envelopes.
- Which word processing function could he use to automatically print the necessary details on these envelopes? (1)
- 9.8.2 Name ONE example of an instant messaging application that he can use to inform parents that the letter has been sent to them. (1)
- 9.9 The school principal would like to use crowd funding to pay for the wireless network.
- What is *crowd funding*? (2)
- 9.10 What would NFC (near field communication) be used for? (1)
- 9.11 The school principal has installed various freeware and shareware programs on his computer.
- 9.11.1 What is the major difference between *freeware* and *shareware*? (2)
- 9.11.2 Why would the school principal install shareware on his computer instead of proprietary software? (1)

- 9.12 The school has ordered three different types of tablets. Learners and staff members ordered the tablet they preferred. The school principal has created a spreadsheet to keep track of the orders.

	A	B	C	D	E	F
1	Section	Total	Option 1	Option 2	Option 3	
2	Staff	40	15	12	13	#NAME?
3	Gr 8	153	51	50	52	#NAME?
4	Gr 9	161	51	49	61	#NAME?
5	Gr 10	155	49	45	61	#NAME?
6	Gr 11	149	43	54	52	#NAME?
7	Gr 12	139	61	41	37	#NAME?

Answer the following questions based on this spreadsheet.

- 9.12.1 The functions in column F should display the word 'ERROR' only if the sum of the orders in columns C, D and E is not equal to the total in column B. The following IF function was used in cell F2 and copied to the cells below:

$$=IF(B2=TOTAL(B2:E2),"","ERROR")$$

Identify the TWO errors in the function. (2)

- 9.12.2 What type of chart/graph would be best to compare the different quantities listed in columns C, D and E? (1)

- 9.12.3 The school principal wants to create a word processing report for the school governing body containing the information from the spreadsheet.

How can he add the details from the spreadsheet to the report and ensure that any changes to the spreadsheet are automatically changed in the report? (2)

- 9.12.4 How could he make sure that users cannot select or change the cells that contain functions and formulas? (2)

TOTAL SECTION C: 50
GRAND TOTAL: 150