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# basic education

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

## **NATIONAL SENIOR CERTIFICATE**

**GRADE 12**

**COMPUTER APPLICATIONS TECHNOLOGY P2**

**(THEORY)**

**NOVEMBER 2012**

**MARKS: 150**

**TIME: 3 hours**

**This question paper consists of 16 pages.**

**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of SECTIONS A and B.
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. Leave a blank line after EACH subquestion.
6. Do NOT write in the right-hand margin.
7. In general, a mark is allocated per fact. A 2-mark question would therefore require TWO facts, et cetera.

**SECTION A****QUESTION 1: MATCHING ITEMS**

Choose a term/concept from COLUMN B that matches the 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 unit used to specify the resolution of a screen	A	UPS
1.2	Software available for a trial period at no cost that a user may not change	B	EULA
1.3	Technology that allows a device to be automatically installed when connected to a PC	C	PIM
1.4	Unwanted e-mail sent to many recipients at once	D	cap
1.5	Smartphones and PDAs use this feature to organise personal information	E	ROM
1.6	An alternative technology used in the place of bar code identification	F	plug-and-play
1.7	A legal agreement which specifies how a user may install and use a program	G	bandwidth
1.8	The limit placed on the amount of data a user can transfer via the Internet in a fixed period of time	H	digital certificate
1.9	A means of checking that an e-commerce website is legitimate	I	AUP
1.10	Memory that does not lose its content when the computer is switched off	J	shareware
		K	spyware
		L	RFID
		M	Bluetooth
		N	freeware
		O	ppm
		P	spam
		Q	open-source software
		R	RAM
		S	dpi

(10 x 1)

**[10]**

**QUESTION 2: MULTIPLE-CHOICE QUESTIONS**

Various options are given as possible answers to the following questions. Choose the most appropriate 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 terms refers to the main memory of a computer?
- A RAM
  - B HDD
  - C DVD
  - D Flash drive
- (1)
- 2.2 Which ONE of the following is a hardware component that you can upgrade to increase the overall performance of your computer?
- A RAM
  - B Operating system
  - C Keyboard
  - D Flash drive
- (1)
- 2.3 Which ONE of the following refers to a company that provides wireless Internet access to its clients?
- A WAP
  - B WIMP
  - C WISP
  - D WIA
- (1)
- 2.4 You download a patch from the Internet if you want to ...
- A remove a virus.
  - B fix bugs in an existing program.
  - C update your virus definitions.
  - D use VoIP software.
- (1)
- 2.5 Many home users are hesitant to use video in a web chat because ...
- A it requires that the latest operating system be installed.
  - B integrated webcams are not available on notebook computers.
  - C it will rapidly reduce the available cap.
  - D webcams can only capture and send .jpg files.
- (1)

- 2.6 The digital divide refers to ...
- A the increased use of analogue technology as opposed to digital technology.
  - B people having access to technology or not.
  - C the gap between pixels on a monitor.
  - D new 4G technology. (1)
- 2.7 Which ONE of the following technologies is designed for wireless communication over very short distances of a few metres?
- A Wi-Fi
  - B Ethernet
  - C 3G
  - D Bluetooth (1)
- 2.8 Which ONE of the following features of a word processing program can be used to move quickly to a specific word or phrase in a document?
- A Endnote
  - B Bookmark
  - C Formula
  - D Thesaurus (1)
- 2.9 What type of software is generally used to view a web page?
- A Word processor
  - B Operating system
  - C Search engine
  - D Web browser (1)
- 2.10 Which of the following ports can be used to transfer photos and videos from a digital camera to a PC?
- (i) Parallel
  - (ii) PS2
  - (iii) FireWire
  - (iv) USB
- A (i) and (ii)
  - B (ii) and (iii)
  - C (i) and (iv)
  - D (iii) and (iv) (1)
- [10]**

**TOTAL SECTION A: 20**

**SECTION B**

The scenario below sets the scene for the questions that follow.

The Computer Applications Technology (CAT) learners have been asked to work with Mr Joe, the teacher, to set up a new computer centre at the school. As a CAT learner, you need to assist with any computer-related problems.

**QUESTION 3**

Mr Joe saw the advertisement below for a notebook computer (laptop). Study the advertisement and answer the questions that follow.

Intel Core i5 2.3 GHz  
4 GB memory  
750 GB hard drive  
15.6" LED, GeForce GT 520M 1 GB  
1.3 MP Webcam, Bluetooth, Wi-Fi + 3G, Win 7 Home Premium

- 3.1 Give the speed of the processor in the advertisement. (1)
- 3.2 A range of input devices is available for portable computers.
- 3.2.1 Name TWO of the most common input devices found on notebook computers that are NOT specified in the advertisement. (2)
- 3.2.2 State ONE advantage of using a wireless mouse as an input device for a computer. (1)
- 3.3 Name the device described by the specification below:
- GeForce GT 520M 1 GB (1)
- 3.4 State TWO functions of an operating system in a computer. (2)
- 3.5 The webcam has a specification of 1.3 MP.
- 3.5.1 Explain what the specification *1.3 MP* means. (1)
- 3.5.2 State TWO uses of a webcam for the computer centre. (2)
- 3.6 Name TWO cellular technology services or communication types that allow Internet access using cellphones. (2)
- 3.7 Give TWO reasons why Mr Joe may prefer to buy notebook computers rather than desktop computers for the school. (2)

- 3.8 As it is expensive to set up a computer centre, the school wishes to use the computers for more than just teaching CAT and IT.  
Name TWO other educational purposes for which the computers can be used. (2)
- 3.9 Name ONE way in which a bar code scanner in the new computer centre could benefit the rest of the school. (1)
- 3.10 Mr Joe is interested in exploring the accessibility options for physically challenged (disabled) learners in the classroom.
- 3.10.1 Explain how a speech recognition program can be used to assist physically challenged (disabled) learners. In your answer, refer to a specific problem that voice recognition will overcome. (2)
- 3.10.2 A text-to-speech program such as Narrator is often associated with operating systems.  
Name ONE way in which a text-to-speech program can be used to help learners with special needs. In your answer, refer to a specific difficulty that this will overcome. (2)
- 3.11 Mr Joe was advised to install a CD drive in each computer.
- 3.11.1 State ONE disadvantage of fitting a CD drive in each computer. (1)
- 3.11.2 Give ONE reason, other than the larger capacity of a Blu-Ray disc, to install Blu-Ray drives as opposed to CD drives in the computers. (1)
- 3.12 Give TWO general reasons why ergonomic issues have to be considered when setting up a computer centre. Specific examples are NOT required. (2)
- [25]**



**QUESTION 4**

- 4.1 When Mr Joe unpacked the computers he found that an office suite had been installed on the computers already. Before the office suite can be used an activation code has to be entered.
- 4.1.1 What is an *activation code*? (1)
- 4.1.2 Where would you get an activation code? (1)
- 4.1.3 Why do developers of software use activation codes? (1)
- 4.1.4 Name the general group of software that an office suite belongs to. (1)
- 4.1.5 State TWO advantages of using an office suite as opposed to individual programs from different software vendors. (2)
- 4.2 The office suite that was pre-loaded on the computers does not include a database program.
- Motivate why Mr Joe should buy a database program by referring to a suitable example of where it can be used in the school. (1)
- 4.3 When Mr Joe tried to install a printer on the computer, a message appeared that asked him to load a device driver.
- 4.3.1 Explain what a *device driver* is. (2)
- 4.3.2 Recommend TWO ways of finding device drivers for the printer. (2)
- 4.4 Resources are sometimes wasted in a computer centre.
- 4.4.1 State TWO ways in which printing can be reduced to save paper in the computer centre. (2)
- 4.4.2 State TWO advantages of using less printer ink or toner in the computer centre. (2)
- 4.4.3 Refer to the computers in the computer centre and state TWO ways in which electricity can be saved. (2)

- 4.5 The antivirus program on the centre's computers reported that a learner's flash drive is infected with viruses. The learner says he has only used this flash drive on his home PC, which has an antivirus program.
- 4.5.1 Give TWO possible reasons for the virus infection. (2)
- 4.5.2 Name TWO possible indications or symptoms that a computer is infected with a virus, other than the report from the antivirus program. (2)
- 4.6 When Mr Joe uses one of the computers in the centre, a message appears informing him that operating system updates are available.
- 4.6.1 Give TWO reasons why it is a good idea to install updates for an operating system. (2)
- 4.6.2 How is a program usually updated? (1)
- 4.7 Mr Joe ran the disk defragmenter on the new computers.
- Explain why the disk defragmentation program will probably report that the new computers do not need to be defragmented. (1)
- 4.8 Mr Joe needs to backup 32 GB of data from his PC.
- Name a type of device that would be suitable for this purpose. (1)
- [26]**

**QUESTION 5**

- 5.1 Mr Joe has networked all the computers, a scanner and other devices in the computer centre.
- 5.1.1 Name ONE media category that Mr Joe could have used to connect the computers. (1)
- 5.1.2 What is the purpose of a switch in a network? (1)
- 5.1.3 Name TWO devices, other than computers and a scanner that can be shared in a network. (2)
- 5.2 Mr Joe is concerned about the security of the network.
- 5.2.1 State TWO precautions that he can take to prevent unauthorised access to the files on the network. (2)
- 5.2.2 State TWO guidelines for setting up secure passwords. (2)
- 5.2.3 Name TWO problems directly related to hardware that may cause you to lose data. (2)
- 5.3 Mr Joe spends a lot of time setting up users and computers, fixing problems with computers and connectivity and performing other network tasks. He wants to advertise for someone to take over these tasks.
- Give the job title (designation) that should be used in the advertisement for such a person. (1)
- 5.4 Mr Joe wishes to connect the network to the Internet.
- 5.4.1 Suggest ONE type of broadband Internet connection.  
(Do not give a brand name.) (1)
- 5.4.2 State ONE advantage of a broadband connection for the learners in the learning environment. (1)
- 5.5 Some teachers at the school do not believe that learners having access to the Internet is always such a good idea.
- 5.5.1 Other than doing research, state TWO uses of the Internet that will assist learners with their school work. (2)
- 5.5.2 A search engine may return thousands of possible websites to look at and many of these are not relevant to what the learner is looking for.
- State TWO ways in which the learner can limit the search to give only relevant websites. (2)

- 5.6 Give TWO reasons why some people store data in the 'cloud'. (2)
- 5.7 Mr Joe is concerned about the negative impact that the Internet may have on learners.
- 5.7.1 He decides to install a program that will allow him to watch what the learners do on the computers.
- Give ONE ethical reason why this is a bad idea. (1)
- 5.7.2 Name ONE way in which he can make sure that the learners do not visit undesirable websites. (1)
- 5.8 Mr Joe wants to inform the learners about e-commerce.
- 5.8.1 Name TWO advantages of Internet banking over conventional banking. (2)
- 5.8.2 What type of website could the learners' parents use to buy and sell items via the Internet?
- (Do NOT give specific examples in your answer.) (1)
- 5.8.3 State ONE advantage of buying or selling goods or services via the Internet. (1)
- 5.8.4 Explain why a user would prefer to use an e-commerce website starting with the prefix *https://*. (1)
- 5.9 Mr Joe is concerned that users do not know the true identity of the people they communicate with on the Internet.
- Name the security feature that can be used with e-mail to verify the identity of the sender. (1)
- [27]**

**QUESTION 6**

- 6.1 Access to the Internet makes the school part of an online community.
- 6.1.1 Name ONE social networking website. (1)
- 6.1.2 Blogs and websites are also ways in which learners can communicate with people all over the world.
- Is the information found on a blog less reliable than information found in an online encyclopaedia? Explain your answer. (3)
- 6.2 Some social networking websites allow one to place photographs on the Internet.
- Give ONE reason why it is NOT ethical to place a photograph of someone else on a social networking website without their permission. (1)
- 6.3 Many companies use social networking.
- State TWO advantages of a company using social networking. (2)
- 6.4 People often use e-mail to communicate with one another.
- 6.4.1 State TWO disadvantages of web-based e-mail systems. (2)
- 6.4.2 What do we call the set of rules that provides guidelines on how to use the Internet and e-mail in a polite and considerate way? (1)
- 6.5 Mr Joe uses e-mail as the main method of communicating with other schools.
- 6.5.1 Although the area he lives in often experiences power failures, he still receives all his e-mail.
- Explain why Mr Joe's e-mail is not lost during a power failure. Refer to the process whereby e-mail is sent and received. (2)
- 6.5.2 Explain how Mr Joe will send an e-mail to Ms Smith without the other recipients of the message knowing that Ms Smith will also receive the e-mail. (1)
- 6.5.3 Explain to Mr Joe what a *mailing* or *distribution list* is in the context of e-mail communication. (1)
- 6.5.4 State ONE advantage of using a mailing or distribution list in e-mail communication. (1)

- 6.6 Phishing attempts are not limited to e-mail or the Internet. They are also sent as messages to cellphones.
- 6.6.1 Explain in detail what a *phishing attempt* is and what it tries to achieve. (3)
- 6.6.2 State TWO ways in which you would recognise a message that is a phishing attempt. (2)
- 6.7 One of the teachers uses the computers to run a business during school time. Briefly explain what makes this practice unethical. (2)
- 6.8 Internet use is not limited to computers.
- 6.8.1 Name a generic type of handheld device that can be used to access the Internet. (1)
- 6.8.2 Name ONE operating system used on such a handheld device. (1)
- 6.9 Mr Joe is pleased to receive the RSS feeds he has subscribed to.
- 6.9.1 Explain what an *RSS feed* is. (2)
- 6.9.2 What is the main advantage of receiving an RSS feed? (1)
- [27]**

**QUESTION 7**

Mr Joe has to solve several problems regarding computers and the work learners are doing in the computer centre.

- 7.1 One of the computers in the class has stopped responding.  
Explain how you would solve the problem without rebooting the computer. (2)
- 7.2 When the learners tried to install a new program on one of the computers, a message appeared indicating that there was not enough space left on the hard drive.  
Name TWO solutions for this problem without upgrading or adding new hardware. (2)
- 7.3 The flatbed scanner connected to the network is not responding.  
Name TWO things that Mr Joe can do to try and solve the problem. (2)
- 7.4 Mr Joe received an e-mail message with the subject line 'Undeliverable e-mail'.  
Give TWO possible reasons why this message may have appeared. (2)
- 7.5 Mr Joe received an e-mail with an attachment that he cannot open because the computer does not recognise the type of file.  
Suggest TWO ways in which to solve this problem. (2)
- 7.6 Mr Joe purchased a new version of a program. He now needs to remove the old program from his computer.
- 7.6.1 Give ONE reason why he should not just select the program and then press 'Delete'. (1)
- 7.6.2 Suggest ONE way in which the program can be removed without causing any problems. (1)

- 7.7 Mr Joe has asked some learners to help him in the computer centre in the afternoons.

He has created a spreadsheet to calculate the times worked by each learner.

Study the extract from the spreadsheet below and answer the questions that follow.

	A	B	C	D	E	F
1	<b>Computer Centre Helpers</b>					
2	<b>Surname</b>	<b>Name</b>	<b>Class</b>	<b>Time In</b>	<b>Time Out</b>	<b>Hours worked</b>
3	PODILE	Mpho	12C	12:30	16:00	03:30
4	MARX	Liena	11B	14:15	18:00	03:45
5	SERUMULA	Mohamed	11B	15:30	17:30	02:00
6	PUDIKABEKO	Dzuni	11C	14:15	17:30	03:15
7	WIESEMAN	Owen	11A	15:15	18:00	02:45
8	MANTSINA	Jannie	12C	15:30	17:30	02:00
9	ESTERHUIZEN	Jan	12A	14:15	16:00	01:45
10	MSIMEKI	Linda	11B	12:30	16:00	03:30

- 7.7.1 Mr Joe wants to copy the names of only the learners in Grade 12C.

Suggest a way in which Mr Joe can extract the names of the learners in Grade 12C without copying each name separately. (2)

- 7.7.2 Which formatting feature did Mr Joe use to place the heading in one cell across all the columns in the first row? (1)

- 7.7.3 Mr Joe wishes to know how many hours each learner worked.

He used the formula =E3-D3 (*Time Out* minus *Time In*) but found that the number of hours display as a time, for example 03:30 instead of 3.5.

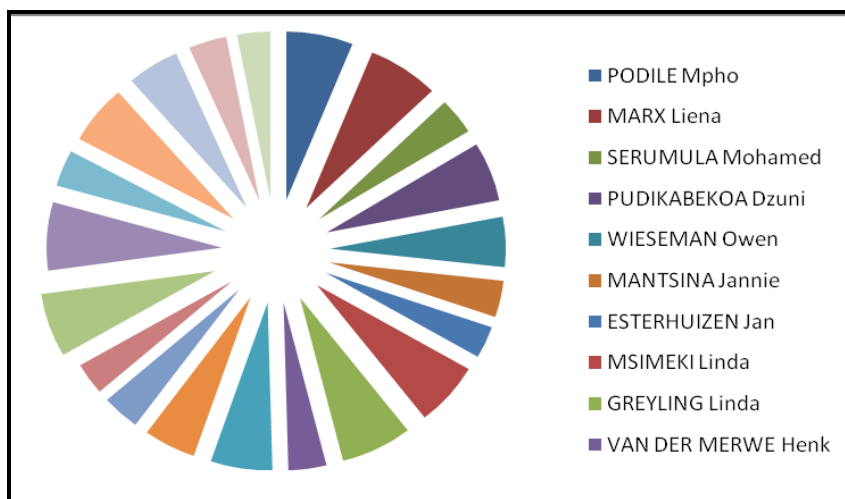
State TWO changes Mr Joe should make to display the number of hours correctly. (2)

- 7.7.4 Mr Joe needs to have the same information which appears in the spreadsheet, in a database application.

Which feature of an office package can he use to achieve this? (1)



- 7.7.5 The chart/graph below compares the times the learners have worked in the computer centre.



Suggest a more appropriate type of chart/graph to display and compare the data. (1)

- 7.8 Mr Joe wishes to place the information below in a database table.

SURNAME	NAME	CLASS	CELL NUMBER	HOURS WORKED
PODILE	Mpho	12C	083 380 1353	14
MARX	Liena	11B	074 323 5891	18
SERUMULA	Mohamed	11B	073 898 9458	21
PUDIKABEKO A	Dzuni	11C	084 953 2262	25
WIESEMAN	Owen	11A	072 516 5875	17

- 7.8.1 Which field should Mr Joe set as the primary key field?

Motivate your answer. (2)

- 7.8.2 Learners may not work more than 30 hours. Name the field property that Mr Joe must set so that numbers larger than 30 cannot be entered into the *Hours worked* field. (1)

- 7.9 The school principal requires a printed document that displays the names, surnames and hours worked of all the learners who helped in the computer centre.

- 7.9.1 Which database object would be most suitable to create and save a list of the learners in Grade 11B who worked more than 15 hours? (1)

- 7.9.2 How would you calculate and display the number of records in a database report? (2)

[25]

**TOTAL SECTION B: 130**  
**GRAND TOTAL: 150**