basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL
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GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

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MARKS: 150

TIME: 3 hours

This question paper consists of 15 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. In general, a mark is allocated per fact. A 2-mark question would therefore 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	Software used to convert scanned documents to a format where the text can be edited	A	service pack
		B	RSS
1.2	A computer that provides resources and/or services to other computers on a network	C	AUP
		D	ROUND
1.3	A high-performance electronic storage device, often used to replace traditional hard drives	E	plug-in
		F	server
1.4	A spreadsheet function that specifies the accuracy of a calculation in terms of the number of decimal places used	G	byte
		H	PDF
1.5	An object in a database that can be used to perform searches based on specified criteria	I	mode
		J	client
1.6	The manipulation of data into meaningful information	K	SSD
		L	query
1.7	A field of study aimed at reducing the effects of RSI for the user	M	GHz
1.8	A unit used for measuring the storage capacity of a device	N	report
		O	OCR
1.9	The technology used to receive automatic content updates from websites without having to visit each website separately	P	ergonomics
		Q	processing
1.10	A small piece of software that adds specific functionality to software, such as a web browser	R	output
		S	IF

(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 spreadsheet function that is used to find the total for cell values in a range only if a specific condition is met?

    A   IF
    B   COUNTIF
    C   SUMIF
    D   SUM   (1)

2.2   Which ONE of the following printers works by constructing objects from materials such as plastic?

    A   Dot matrix printer
    B   3D printer
    C   Inkjet printer
    D   Colour laser printer   (1)

2.3   Which ONE of the following is an example of an e-commerce website?

    A   www.google.co.za
    B   www.kalahari.com
    C   www.news24.co.za
    D   www.gmail.com   (1)

2.4   Which ONE of the following refers to cellular technology used for data transfer?

    A   WiMAX
    B   Bluetooth
    C   Wi-Fi
    D   LTE   (1)

2.5   Which ONE of the following devices is the best example of convergence?

    A   Smartphone
    B   USB modem
    C   MP3 player
    D   Webcam   (1)

2.6   Which ONE of the following refers to a situation where a web user is tricked into selecting a hidden link?

    A   Double clicking
    B   Keylogging
    C   Click-jacking
    D   Hyperlinking   (1)

2.7   Which ONE of the following refers to a concept where employees can connect their own devices to the company network and do their official work on these devices?

        A   RSI
        B   DoS
        C   BIOS
        D   BYOD   (1)

2.8   Which file format is used to save text without containing any formatting such as colours and font sizes?

        A   PDF
        B   RTF
        C   TXT
        D   HTML   (1)

2.9   Which ONE of the following refers to a technology where the processing power of multiple networked computers is combined to perform a specific task?

        A   Grid computing
        B   Green computing
        C   File sharing
        D   Mobile computing   (1)

2.10   Which ONE of the following is the changing of an e-mail header so that it appears as if the e-mail was sent from an address other than the one from which it was actually sent?

        A   Bcc
        B   Cracking
        C   Spoofing
        D   Hacking   (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:
A <u>stylus</u> can be used for more accurate input on some touch screens.	True
The <u>World Wide Web</u> is characterised by unequal access to ICT by different groups of people.	False <u>Digital divide</u>

3.1   A document with a <u>PDF</u> file extension can be used to prevent users from changing its contents. (1)

3.2   A <u>blog</u> is a website that allows users to work together on changing its content using a web browser. (1)

3.3   An audio file, such as a news programme or an interview that can be downloaded from the Internet, is called a <u>patch.</u> (1)

3.4   A <u>QR-code</u> is used to visually represent text such as a URL. (1)

3.5   A query can be used in a <u>spreadsheet</u> to extract specific information from a large set of data. (1)

[5]

TOTAL SECTION A: 25

SECTION B

QUESTION 4: SYSTEMS TECHNOLOGIES

4.1　　Most modern web browsers have a feature called tabbed web browsing.

　　　　State TWO advantages of tabbed web browsing.　　　　(2)

4.2　　Give TWO reasons why biometric input can be more secure than using traditional measures such as passwords.　　　　(2)

4.3　　Buying a computer can sometimes be very difficult because there are so many hardware options to consider.

　　　　4.3.1　　Name TWO of the main components on a computer that have a significant effect on the overall processing performance of the system.　　　　(2)

　　　　4.3.2　　Explain what a *trackpad/touch pad* is and state ONE disadvantage of using a trackpad/touch pad instead of a normal mouse.　　　　(2)

　　　　4.3.3　　LED monitors have replaced CRT monitors.

　　　　　　　　State TWO advantages of LED monitors.　　　　(2)

　　　　4.3.4　　State ONE possible disadvantage of having a built-in monitor on a computer such as a notebook computer.　　　　(1)

4.4　　A business has to decide which printer they should purchase to print pamphlets in large volumes.

　　　　4.4.1　　Recommend a type of printer for their needs AND give a reason to support your recommendation.　　　　(2)

　　　　4.4.2　　Name TWO new technologies or additional features that appear in modern printers.　　　　(2)

4.5　　The opening of programs on a computer sometimes becomes slower over a period of time.

　　　　4.5.1　　A support technician suggests that the hard drive might be fragmented. He recommends defragmenting the hard drive.

　　　　　　　　Briefly describe what occurs during the defragmentation process.　　　　(2)

　　　　4.5.2　　Identify TWO other software-related problems that could reduce the speed of a computer, besides fragmentation. Write down a potential solution for EACH of the problems you identify (it could be done in the form of a table).　　　　(4)

4.6　　Explain what a *zombie* is in an ICT context.　　　　(2)

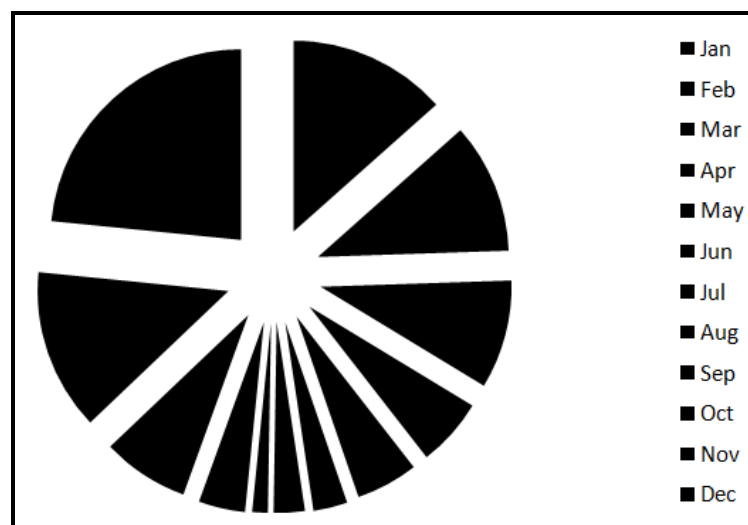4.7　　What is the function of a firewall?　　　　(2)

[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1   Why would the Internet be classified as a WAN? (1)

5.2   State TWO advantages of using a network. (2)

5.3   Compare the functionality of a switch and a router in a network. (2)

5.4   State an advantage of using fibre-optic cables instead of copper wires as a communication medium. (1)

5.5   A number of hardware issues, such as the type of equipment, affect the performance and stability of a Wi-Fi signal.

           State THREE factors, besides hardware issues, that can have an influence on a Wi-Fi signal. (3)

5.6   Give an example of what NFC (near field communication) can be used for. (1)

5.7   Explain the function of a hyperlink. (1)

5.8   Name ONE type of connection to the Internet, besides a landline. (1)

5.9   More and more people choose to use online, web-based e-mail systems.

         5.9.1   Give ONE example of a popular web-based e-mail service. (1)

         5.9.2   State ONE possible advantage of using a web-based e-mail system compared to using a local e-mail system such as Microsoft Outlook. (1)

         5.9.3   Which e-mail field will be used to hide the address of a recipient who gets a copy of the same e-mail? (1)

[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1   Name TWO possible types of sources used to collect personal opinions without the use of the Internet when doing research.   (2)

6.2   State TWO advantages of using questions that have a fixed set of possible answers (closed questions) when using an electronic form.   (2)

6.3   State TWO ways in which to check the reliability or accuracy of information from an Internet source.   (2)

6.4   The graph/chart below represents a comparison of the average temperatures per month from January (Jan) to December (Dec).

6.4.1   Name a more suitable type of graph/chart to represent this information.   (1)

6.4.2   Recommend THREE improvements to the above graph/chart other than changing the type of graph.   (3)

[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1   Green computing is becoming an increasingly important issue in ICT.

    7.1.1   State ONE way in which one can responsibly dispose of an old laptop battery.   (1)

    7.1.2   State TWO ways in which computer technology can be used to protect the environment.   (2)

    7.1.3   Give ONE example of the use of computer technology that has a negative effect on the environment, other than the disposal of batteries.   (1)

7.2   Give the term for the practice when somebody, for example, opens a Facebook account using another person's details.   (1)

7.3   Phishing is a world-wide problem.

    7.3.1   State TWO ways of identifying a possible phishing attack.   (2)

    7.3.2   Suggest TWO possible ways in which to prevent or combat phishing on receipt of such an e-mail.   (2)

7.4   Give ONE example of how downloading copyrighted material without permission could affect the owners or creators of the material.   (1)

[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1 You have studied web page development in your CAT course.

8.1.1 What is the name of the language that uses tags and attributes to create web pages? (1)

8.1.2 What is the difference in function between the <ul> and <ol> tags used in the code for a web page? (2)

8.1.3 Give TWO possible reasons why an image you added on an HTML web page does not display when viewed in a web browser. (2)

8.2 Businesses regularly use databases.

8.2.1 The names of various schools are listed in a field in a database table.

Which criteria would you enter in a query to extract the names of all the schools that have the word 'business' anywhere in their name? (2)

8.2.2 State TWO advantages of/reasons for using codes instead of the 'full text' in a database, for example 0847 instead of the text 'Business Studies'. (2)

8.3 Spreadsheets are commonly used to analyse data.

8.3.1 Name a feature of a spreadsheet program that can be used to automatically highlight cells if they contain specific values. (1)

8.3.2 The function below was used in a spreadsheet to count the number of cells in the range A1:A10 that contain values of 50 or higher.

=COUNTIF(A1:A10,<50)

Give TWO reasons why this function will NOT work correctly. (2)

8.3.3 Which feature within a spreadsheet program can be used to display words underneath one other within the same cell? (1)

8.4 State TWO advantages of using the 'Track Changes' feature of a word processing program. (2)

[15]

TOTAL SECTION B: 75

SECTION C

QUESTION 9: INTEGRATED SCENARIO

SCENARIO

Your school recently started a photography club. As the technical assistant you will be helping club members with any computer-related problems. Members are encouraged to bring along any device capable of taking photographs, such as digital cameras, smartphones and tablets.

9.1   The school principal would like to invest in a new digital camera.

        9.1.1   Name any TWO camera specifications that will have an impact on the quality of a photograph. (2)

        9.1.2   The software on the digital camera has a bug.

                How would you fix a software bug without replacing the device or taking it back to the shop? (1)

        9.1.3   Study the specifications below and answer the questions that follow.

> • 20 MP
> • 4" LED touch screen
> • 26x optical zoom
> • Micro HDMI and USB port
> • 4 GB SD card included

           (a)   The specifications indicate an HDMI port.

                Name ONE output device that would be typically connected to the HDMI port of the camera. (1)

           (b)   What is the size of the camera's display (screen)? (1)

9.2   The most common way to transfer photographs from a digital camera to a computer would be to use a USB cable.

      9.2.1   When connecting the camera to a USB port on the computer, you notice that a device driver is being automatically installed.

              What is the function of a device driver?   (1)

      9.2.2   The device driver was installed without inserting a storage medium such as a CD.

              From which location could the device driver have been installed?   (1)

      9.2.3   Name TWO other ways, besides using a USB cable, in which photographs can be transferred from a digital camera to a computer.   (2)

9.3   The secretary has been trying to send a picture as an e-mail attachment to the local newspaper. The e-mail was rejected as the attachment exceeded the maximum size limit of 15 MB.

      Name TWO possible ways in which to reduce the size of the picture.   (2)

9.4   One of the members received a laptop with a built-in webcam.

      Name TWO functions of a webcam if it is used with the Internet.   (2)

9.5   A major concern for the members of the photography club is losing the photographs they have downloaded onto their computers.

      You recommend that they have an effective backup policy to prevent the loss of data if their computers are stolen or damaged.

      9.5.1   Name TWO practical guidelines or strategies they can include in their backup policy.   (2)

      9.5.2   The school principal stated that he uses cloud storage to store the photographs he takes with his smartphone.

            (a)   State TWO possible disadvantages of using cloud storage for this purpose.   (2)

            (b)   The school principal made sure that the synchronisation ('synching') option on his smartphone has been enabled.

                 What advantage does 'synchronisation' ('synching') offer in this context?   (1)

9.6   One of the members has a camera with the option of saving GPS information to a photograph.

    9.6.1   How does GPS technology work? (2)

    9.6.2   Discuss ONE reason for adding GPS information to a photograph. (1)

9.7   State TWO advantages of using touch screens on mobile devices such as a digital camera or smartphone. (2)

9.8   The club needs broadband Internet access.

    9.8.1   Explain what the term *broadband* means. (1)

    9.8.2   Name THREE technical criteria or issues, besides the cost, that should be considered when choosing the type of broadband Internet connection. (3)

    9.8.3   Access to the Internet means that the club members can use VoIP technology such as Skype.

        What is the main advantage of using VoIP to make calls instead of normal telephone calls? (1)

9.9   The club members will need Internet access on all the computers. This means a network will have to be installed.

    9.9.1   State TWO advantages of installing a wireless LAN (WLAN) instead of a cabled LAN. (2)

    9.9.2   What would the function of a NIC (network interface card) be on a network? (1)

9.10   The club would like to upload their photographs to social networking websites on the Internet for their parents to see.

    9.10.1   State TWO advantages of posting the photographs on a social networking website. (2)

    9.10.2   State TWO ethical guidelines for the club members to consider when posting pictures on the Internet. (2)

9.11   The photography club wishes to buy a new computer that will be used for photo editing.

Consider the specifications of a possible new computer as shown below.

- Core i5 2.4 GHz
- 4 GB RAM
- 1 TB HDD
- 2 GB dedicated graphics card
- Bluetooth keyboard and mouse
- Windows 8 Pro

9.11.1   Which essential output device does NOT appear in the specifications above?   (1)

9.11.2   State TWO advantages of installing or adding a memory card reader to the computer.   (2)

9.11.3   The specifications include a Bluetooth keyboard and mouse.

State TWO potential disadvantages of using Bluetooth devices.   (2)

9.11.4   4 GB RAM is specified.

What is the main function of RAM in a computer?   (1)

9.11.5   Why would increasing the amount of RAM increase the performance of a computer?   (1)

9.12   The club members need software to edit their photographs. They want to use free and open-source software (FOSS).

What is the main advantage of using FOSS in this situation, besides the fact that it is free?   (1)

9.13   State TWO ways in which the photography club can practise green computing in terms of EACH of the following issues:

9.13.1   Paper usage   (2)

9.13.2   Electricity consumption   (2)

9.14   The club will use a database to keep track of member details.

Name THREE database field properties that can be used to ensure that valid and accurate data is entered into the database.   (3)

TOTAL SECTION C: 50
GRAND TOTAL: 150