

**COMPUTER APPLICATIONS TECHNOLOGY: PAPER I**

Time: 3 hours

150 marks

---

**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. This question paper consists of 13 pages. Please check that your question paper is complete.
  2. The paper is divided into Section A (25 marks), Section B (75 marks) and Section C (50 marks).
  3. Answer ALL the questions.
  4. Number your answers exactly as they appear in the question paper.
  5. Non-programmable calculators may be used.
  6. It is in your own interest to write legibly and to present your work neatly.
  7. Read the questions carefully. Take note of the wording of the questions, i.e. explain, name, select, discuss, identify, etc. and then answer accordingly.
  8. Give your answers in general terms. Use brand names only when asked, e.g. use 'word processor' rather than 'Microsoft Word' or 'WordPerfect'.
  9. In general, a mark is allocated per fact. So a two-mark question would require two facts, and so on.
-

**SECTION A****QUESTION 1**

- 1.1 1.1.1 Choose the correct TERM in Column B which **BEST** fits the statement in Column A. Write down **ONLY** the LETTER of your choice next to each question number.

Column A		Column B	
(a)	The field which uniquely defines each record in a database	A.	Peer-to-Peer
(b)	A network in which all computers/nodes are equally as important	B.	Embedded
(c)	One of the many languages used to program computers	C.	AUP
(d)	Rules and regulations for using a purchased piece of software	D.	Primary Key
(e)	When the operating system is built into the smart device	E.	Client-Server
		F.	Validation Rule
		G.	Java
		H.	EULA
		I.	Wi-Fi network
		J.	Binary

(5)

- 1.1.2 You are given the following list of Three Letter Acronyms (TLAs). Choose the **MOST** appropriate acronym for each blank space in the paragraphs that follow. Ensure that you number each of your answers correctly.

CAN, FAN, GAN, LAN, MAN, PAN, VPN, WAN

- (a) First Fiduciary Bank is a start-up institution in South Africa. To begin with, the new bank manager wants to have his computer connected to his smartphone. The IT manager creates a (a) for him. (1)
- (b) Initially, there is a single branch in Randburg, Johannesburg. The IT manager is required to install 10 computers for tellers and the administration staff plus a shared printer and Internet connection. Since all the computers are found within one branch, she sets up a (b). (1)
- (c) As the bank gains more customers, new branches open in Johannesburg-Sandton and Tembisa. The IT manager wants to connect the computers in all of these branches in the same metropolitan area together and so sets up a (c). (1)
- (d) The bank is highly successful and now goes nationwide, opening 4 new branches in Durban, 5 branches in Cape Town and 2 branches in Pretoria. The IT manager joins all the computers in all of these branches together in a (d). (1)
- (e) First Fiduciary Bank is so highly regarded that branches in London, UK; Lagos, Nigeria; and New York, USA are opened. All the computers in all the branches around the world are connected together to form a (e). (1)

1.2 Give the most appropriate definition of the following terms:

- 1.2.1 The ROM chip (2)
  - 1.2.2 Utility software (2)
  - 1.2.3 Spam (2)
  - 1.2.4 Memory dumping (2)
  - 1.2.5 The Recycle Bin (2)
- [20]**

## QUESTION 2

Select the **MOST** appropriate answer to each question. Write down **ONLY** the letter of your choice next to each question number.

2.1 How many bytes are there in 1 kilobyte (kB)?

- A 124 bytes
- B 100 bytes
- C 1 024 bytes
- D 1 000 bytes (1)

2.2 Which one of the following printers **CANNOT** print bitmap graphics?

- A Laser Printer
- B Daisy-Wheel Printer
- C Ink Jet Printer
- D 3D Printer (1)

2.3 If an instruction is used repeatedly by a program, it is temporarily stored in a type of memory called ...

- A a register.
- B cache.
- C secondary storage.
- D ROM. (1)

2.4 Which of the following types of software can be downloaded and used for a trial period after which the software must either be purchased or deleted?

- A Freeware software
- B Shareware software
- C Commercial software
- D Ghost software (1)

2.5 Mogaletsie learned how to copy programs on a school computer. Thabo asked her to make a copy of a program for him to use at home. In terms of legal issues, what should her response to his request, be?

- A "Ok but please don't tell anyone."
- B "Ok, it will cost R50."
- C "No, I don't know how to copy the program."
- D "No, you have not purchased a licence for the program." (1)

**[5]**

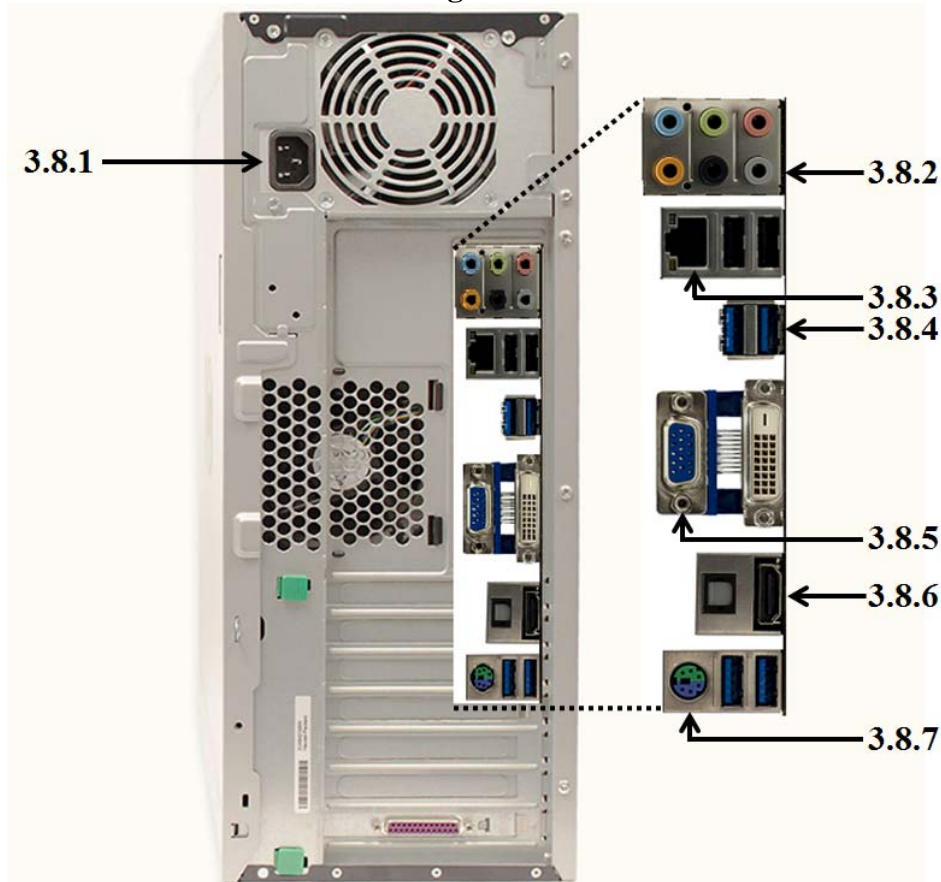
<b>25 marks</b>
-----------------

**SECTION B****QUESTION 3      SYSTEM TECHNOLOGIES**

- 3.1 You are working for a small business as a computer technician. You notice that one of the users keeps shutting down her computer by pressing the power button, instead of using the shutdown process of the operating system. Give **TWO** reasons why this is not good for the computer. (2)
- 3.2 You are using a cabled mechanical mouse and the mouse pointer stops moving every now and then on the screen. What troubleshooting step should you take? (1)
- 3.3 Hannes complains that his computer is always giving error messages; the file names and folder names are garbled; and there is an odd noise coming from his computer tower. Which hardware device do you suspect is causing the problem? (1)
- 3.4 When a computer has problems with its Windows operating system, what **TWO** solutions do you suggest to fix the system? (2)
- 3.5 Leah complains that she is having a problem playing some of her older games on her Windows 8 system. What is the likely cause? (1)
- 3.6 When software is installed on a computer the user is sometimes presented with three possible options. Briefly describe each installation option namely:
- 3.6.1 a full installation (1)
  - 3.6.2 a custom installation (1)
  - 3.6.3 a typical installation (1)
- 3.7 When working in a document; what is the difference between *Save* and *Save As*? (2)

- 3.8 You are given the following photograph of the rear side of a computer tower. **(Figure 1)**

**Figure 1**



Draw the following table in your answer book. You **DO NOT** need to include the column with the symbols. For each of the items labelled **3.8.1** to **3.8.7**, name the port/connector/interface and briefly describe its function.

LABEL NUMBER	NAME OF PORT/ CONNECTOR/ INTERFACE	FUNCTION	SYMBOL
3.8.1			
3.8.2			
3.8.3			
3.8.4			
3.8.5			
3.8.6			
3.8.7			

(14)

[26]

**QUESTION 4 INTERNET AND NETWORK TECHNOLOGIES**

Ace Advertising is a multi-national company that allows employees to telework (work at home and communicate with the office using the Internet).

- 4.1 4.1.1 Besides the communication medium, which **ONE** essential hardware device is required to connect a computer to the Internet? (1)
- 4.1.2 Name **TWO** software program types required for a computer to communicate with the office. (2)
- 4.1.3 Give the **TERM** for organisations that will allow Ace Advertising employees access to the Internet. (1)
- 4.2 Give **TWO** ways that a report could be sent to the office using the Internet. (2)
- 4.3 4.3.1 Benoni College needs to provide its students with a link to the Internet. Give **TWO** reasons why the college should choose a broadband connection instead of a dial-up modem connection. (2)
- 4.3.2 All students at the college use laptop computers that can be connected to the college network using a wireless connection. Give **ONE** advantage and **ONE** disadvantage of wireless connections. (2)
- 4.4 A student at Benoni College needs to find out what the gold sales are for Southern African countries in 2014. He uses Google, an Internet search engine, to find this information and gets over 85 million results when he types in: *COUNTRIES GOLD SALES 2014*.
- 4.4.1 He wanted to know how much gold was sold by Southern African countries in 2014. How could his search be refined to reduce the number of results? (1)
- 4.4.2 Give **ONE** advantage of searching for information on the Internet rather than using books. (1)
- 4.5 A science-fiction memorabilia company has decided to sell their products using only an online Internet site.
- 4.5.1 Give **TWO** features that their website should have. (2)
- 4.5.2 Give **TWO** advantages to customers using the Internet for shopping. (2)

**[16]**

**QUESTION 5            INFORMATION MANAGEMENT**

- 5.1     State **THREE** ways that computers help the South African Police Services fight crime. (3)
- 5.2     In today's Information Age protection of personal data is very important. In terms of the Protection of Personal Information Act, 2013, all organisations are legally required to keep all personal information secure when stored on computer systems.
- 5.2.1   Explain **ONE** software method of protecting personal data. (1)
- 5.2.2   Explain **ONE** hardware method of protecting personal data. (1)
- 5.3     Today's digital cameras can be seen as smart devices as they contain a microprocessor.
- 5.3.1   What input and processing is done by this microprocessor when you take a photograph? (2)
- 5.3.2   Give **TWO** reasons why the photograph costs less using the digital camera than it would cost if a non-digital camera was used. (2)
- [9]**

**QUESTION 6          SOCIAL IMPLICATIONS**

- 6.1 Give **TWO** ways that online learning has changed the study and testing methods of students today. (2)
- 6.2 Computer systems can have special hardware and software installed so that disabled students can use a computer to help them study.
- 6.2.1 Give **ONE** type of special hardware developed to help a disabled student. (1)
- 6.2.2 Give **ONE** type of special software developed to help a disabled student. (1)
- 6.3 A National General Election took place in South Africa in May 2014. One of the concerns that was raised was that the IEC (Independent Electoral Commission) needed to ensure that the election was both 'Free and Fair'. To ensure this, the IEC considered setting up a system for electronic voting. This would have enabled voters to vote via the Internet, without having to actually go to a voting station in person.
- 6.3.1 Explain **TWO** security precautions the IEC would need to have taken to ensure that the voter was properly identified and only voted once. (2)
- 6.3.2 Discuss **TWO** advantages of using an electronic system, other than saving the voter a trip to the voting station. (2)
- 6.3.3 Discuss **TWO** disadvantages of using an electronic system, other than ensuring that the voter was properly identified and only voted once. (2)
- [10]**



**QUESTION 7 SOLUTION DEVELOPMENT**

- 7.1 Angel Estate Agency has digitised all the data about the units it lets in Bloemfontein. The data was entered into a database program and a table was created as shown below.

UnitID	Suburb	Type	Additions	Rent/pm
B01	Fauna	3 bed flat	Carport	R2 900,00
B02	Willows	2 bed flat	Pool	R2 500,00
B03	Heuwelsig	3 bed flat	Carport	R5 000,00
B04	Groenvlei	1 bed flat	BICs	R2 800,00
B05	Fauna	1 bed flat	Garden	R1 200,00
B06	Rayton	3 bed flat	Garden	R4 000,00
B07	Universitas	1 bed flat	Pool	R2 500,00
B08	Universitas	3 bed flat	BICs	R5 100,00
B09	Willows	2 bed flat	BICs	R4 400,00
B10	Heuwelsig	2 bed flat	Carport	R4 700,00
B11	Fauna	3 bed flat	Carport	R5 600,00

7.1.1 Which field in the file should be used as a key field? (1)

7.1.2 Give a validation rule to check that only rental amounts between R1 000 and R6 000 are entered into the table. (1)

7.1.3 (a) Which unit/s data will be displayed if the following search query is made?

(Additions= 'Pool') OR (Type = '2 bed flat') (2)

(b) What data will be output if the OR in **Question 7.1.3** (a) is changed to an AND? (1)

(c) Explain your answer in **Question 7.1.3** (b). (1)

7.1.4 List the first **FOUR** UnitIDs if the file is sorted in ascending order on Suburb and then Rent/pm. (4)

7.2 7.2.1 If the data capturer teleworked from home, state **TWO** disadvantages for the data capturer. (2)

7.2.2 Give **TWO** possible solutions to the disadvantages for the data capturer stated in Question 7.2.1. (2)  
[14]

<b>75 marks</b>
-----------------

**SECTION C****Scenario**

Lebo Umpheki, is a young entrepreneur who wants to start up a catering company called, Food Visions Catering.

She not only needs to purchase all the necessary kitchen equipment for her company but also wants to set up an online presence so that online orders can be placed, recipes can be read and contact made with potential clients. Presently, she has no system for this. You, as a personal friend, offer to advise her on the technicalities of setting up a working ICT System.



[<<http://blackgirlsguidetoweightloss.com/wp-content/uploads/2011/09/blackwomancooking.jpg>>]

**QUESTION 8 INTEGRATED SCENARIO**

- 8.1 8.1.1 Lebo mentions that she is looking for investors to help her pay for the initial purchases. Explain to Lebo what 'crowdfunding' is and where it can be done. (3)
- 8.1.2 Give **ONE** named example of a 'crowdfunding' source. (1)
- 8.2 Lebo has enough money to purchase a computer system and asks for your recommendations. You show her the following advertisement.

Specs	<b>Basic Office Machine from &lt;<a href="http://www.sybaritic.co.za">www.sybaritic.co.za</a>&gt;</b>	
Chassis	Superchannel Micro Tower Chassis – 450 W – Black with PSU	
Motherboard	ASRock H61M-VS4 IH61 Motherboard w/A6 + G + LK + SATA3	
CPU	Intel Celeron G465 1.9 GHz LGA1155 Processor – HD2000, 1.1 GHz Graphics Max. 1.5 MB L3, 1 Core, 17 gb/sec, 35 W, 32 nm	
Memory	Corsair DDR3-1333 2 GB Value Select Memory Module	
Graphics		
Primary Drive	Seagate 500 GB Barracuda 7200.14 SATA6 16 MB 7200 RPM HDD	
Secondary Drive	LG GH24NS70 24xDVD+-R / 8xDVD+-R DL / 12xDVD-R DL 8xDVD+RW / 6xDVD-RW / 5xDVD-RAM SATA Combo Drive – OEM	
Operating System	Microsoft Windows 7 Home Basic 64-bit DSP	
Office Software	Microsoft Office Home and Student 2013	
Input Device	Gigabyte KM5300 Compact Keyboard Mouse Set	
Display	Samsung 18.5" Wide S19A100N 200 cdm 5000000:1 5 ms LCD Monitor	
Assembly	System Assembly (Hardware Only)	
Price	<b>R6 168,00</b>	
	Add to Cart	

Lebo is very confused with all the technical terms and asks you the following questions. Refer to the advertisement when answering the questions.

- 8.2.1 (a) (i) What is the PSU used for? (1)
- (ii) How does the PSU do this function? (1)
- (b) (i) What is the motherboard usually made from? (1)
- (ii) What is the motherboard used for? (1)
- (c) (i) Is the HDD primary memory or secondary storage? (1)
- (ii) What is the HDD used for? (1)
- (d) (i) Is a combo drive a magnetic drive or an optical drive? (1)
- (ii) What is a combo drive used for? (1)

8.2.2 The advertisement refers to the **CPU** and **LCD**.

- (a) What do **CPU** and **LCD** stand for? (2)
- (b) Give the function of the:
- (i) CPU (1)
- (ii) LCD (1)

8.2.3 In the advertisement Lebo notices that the graphics specifications row is empty and asks if that means there is no graphics capability in this system. Explain, justifying your answer from the advertisement, why Lebo is incorrect. (2)

8.3 8.3.1 Recommend to Lebo **TWO** additional hardware devices she should purchase, that are not included in this package. (2)

8.3.2 Give an example of how each piece of hardware you recommended in **Question 8.3.1**, will be used. (2)

8.4 Lebo has now set up her catering kitchen. However, her selection of dishes is limited to South African cuisine. She realises that she needs to expand her culinary range and finds many recipes to use in 'Nigella's Kitchen Cookbook'. To make more money, Lebo compiles Nigella's and her own recipes into a book called 'Food Visions Cookbook'.

Is it legal for Lebo to sell her compiled recipe book? Give **ONE** comment to support your answer. (2)

- 8.5 Lebo would like to know how well her business is doing over a six month period. You set up a spreadsheet for her as follows:

	A	B	C	D	E	F	G
1	<b>Food Visions Catering</b>						
2	<b>Month</b>	<b>Cost of Ingredients</b>	<b>Cost of Equipment</b>	<b>Total Costs</b>	<b>Total Sales</b>	<b>Income</b>	<b>Profit/Loss</b>
3	January	900	860	1760	4050	2290	Profit
4	February	850	590	1440	1380	-60	Loss
5	March	920	700	1620	2000	380	Profit
6	April	1000	660	1660	3900	2240	Profit
7	May	1005	740	1745	4200	2455	Profit
8	June	1400	890	2290	5000	2710	Profit

8.5.1 Write down the formula in **F3** that will calculate the Income for January. (2)

8.5.2 Write down the full function that will display the words 'Profit' or 'Loss' in **G3**. (3)

8.5.3 State the columns that will be needed to create a line graph of the Sales and Costs for January to June. (3)

- 8.6 Since Lebo realises that an online presence is vital for the success of her business, she asks you to set up a Food Visions Catering website. Having learnt to program html, you come up with the following code.

```
<html>
<title>Food Visions Catering</title>
</head>
<p><table cellpadding=5 cellspacing=10 width=0 border=0 bgcolor="#000080"
background="images/wallpaper.jpg">
<tr>
<th colspan=1 rowspan=1>Ordering Times</th>
<th colspan=1 rowspan=1>09.00</th>
<th colspan=1 rowspan=1>10.00</th>
<th colspan=1 rowspan=1>11.00</th>
<th colspan=1 rowspan=1>12.00</th>
<th colspan=1 rowspan=1>13.00</th>
</tr>
</body>
```

However, when you try to execute the webpage, it does not work. Carefully examine the preceding code and determine which **FOUR** tags have been left out.

List just the **FOUR** missing tags in your Answer Book. (4)

- 8.7 One afternoon, while Lebo is busy cooking, you video her having great difficulty cracking a coconut shell. It is very funny and you both agree that you should share the video on the Internet.
- 8.7.1 Name **ONE** video sharing site. (1)
- 8.7.2 The video '*goes viral*'. Explain to Lebo what the expression, '*going viral*' means. (2)
- 8.8 Lebo is meeting a prospective client, Mr Cohen, at his home. She would like to show Mr Cohen some of her food displays on her website. However, Mr Cohen does not have Internet access. Lebo does have a smartphone which is data enabled. How can she use her smartphone to access the Internet using Mr Cohen's laptop? (2)
- 8.9 Lebo wants you to create a template for her recipes. Explain what a template is. (2)
- 8.10 The advertisement mentions an operating system and Office software.
- 8.10.1 Will the computer be able to operate without the:
- (a) operating system? (1)
- (b) Office software? (1)
- 8.10.2 Give **ONE** example of what Lebo can use the following for:
- (a) the operating system (1)
- (b) the Office software (1)
- 8.11 You load the following software programs onto Lebo's computer. Indicate which are 'system software' and which are 'applications software'.
- 8.11.1 Star Trek – Into Darkness Role Playing Game. (1)
- 8.11.2 VLC Media Player (1)
- 8.11.3 Printer Driver (1)
- [50]

<b>50 marks</b>
-----------------

**Total: 150 marks**