higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

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NATIONAL CERTIFICATE

COMPUTER PRACTICE N6

(6030196)

12 November 2019 (X-Paper)
09:00–12:00

THE QUESTION PAPER INCLUDES THE INSTRUCTIONS TO CANDIDATES AND INVIGILATORS AND MUST BE HANDED TO CANDIDATES 30 MINUTES BEFORE THE COMMENCEMENT OF THE EXAMINATION SESSION.

This question paper consists of 35 pages and 4 answer sheets.

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TIME: 3 HOURS
MARKS: 200

INSTRUCTIONS TO INVIGILATORS AND CANDIDATES

READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE ANSWERING THE QUESTION PAPER. ASK THE INVIGILATOR TO EXPLAIN IF THERE IS SOMETHING THAT YOU DO NOT UNDERSTAND.

1. The question paper comprises the following THREE sections:

   SECTION A: Theory (50 marks)
   SECTION B: Word processing (150 marks)
   SECTION C: Spreadsheet (150 marks)
   SECTION A is COMPULSORY.

   Candidates must answer either SECTION B or SECTION C.

   SECTION A must be answered on the ANSWER SHEET.

   SECTION B is done on the computer with the aid of a word processing program.

   SECTION C is done on the computer with the aid of a spreadsheet program.

   ALL the PRINTOUTS must be numbered correctly and both the QUESTION NUMBER and EXAMINATION NUMBER (COMPUTER NUMBER) must be printed as instructed. EXAMINATION NUMBERS in writing are NOT acceptable.

2. The time allocated for the question paper is THREE hours. NO additional time will be allowed for the printing of answers after the completion of the examination.

3. In the event of a power failure or a computer or printer breakdown, the invigilator must make the necessary arrangements for the candidates to continue and the actual time lost must be added.

4. If there is a problem with the printer, e.g. it does not print ê, a report regarding this must accompany the answer sheets of the centre.

5. ASCII codes may be used as well as a spelling checker.

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6. Each answer must be printed on a separate sheet of paper and on ONE side of the paper only. ALL PRINTOUTS must be placed in the EXAMINATION FOLDER.

7. PRINTOUTS must be printed on A4 paper unless a specific paper size is required.

8. Only ONE PRINTOUT per question or subsection of a question may be handed in for marking. If more than ONE is handed in, only the top one will be marked.

9. At the conclusion of the examination session ALL PRINTOUTS to be marked must be placed in the correct sequence in the EXAMINATION FOLDER and handed to the invigilator.

10. PRINTOUTS NOT submitted for marking must be collected at the end of the session by the invigilator and must be destroyed at the end of the day. NO PRINTOUTS whatsoever may be removed from the examination room or put in wastepaper bins.

11. In SECTIONS B and C only a 12 pt font size may be used, unless a specific size is required, or in the case of a spreadsheet when a smaller font size is required to fit the answer on ONE page. In SECTION B margins of 2,54 cm/1" should be used unless otherwise instructed.

12. Candidates must remember that ALL work on the computer should be saved at regular intervals to prevent loss of work in the event of a power failure. NO additional time may be allowed for such loss of work. It is the candidates' responsibility to protect their answers against deletion.

13. In order to print the original as well as the edited answers candidates are reminded to save the work after each separate question before it is printed.

14. At the end of the examination session each candidate must hand in the PRINTOUTS of the answers as well as a disk with the saved answers (properly marked with the candidate's EXAMINATION NUMBER). If the candidate's work is saved on a hard drive/network, the invigilator must copy the work to a compact disk/memory stick and the answers must immediately be deleted from the hard drive/network. These memory sticks/compact disks must be handed to the examination section for safekeeping for at least SIX months. The disks must NOT be included for marking.

15. NO question paper may be taken out of the examination room until at least ONE hour after the commencement of the last session. All papers must consequently be handed in. These may be returned to candidates on completion of the examination.

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16. In the event of a question paper being written in more than ONE session invigilators must ensure that ALL answers of candidates are removed from the hard disks or the network before candidates for the next session are allowed into the room.

17. NO candidate may print his/her work for another candidate, make his/her disk/memory stick available to another candidate or access another candidate's work on the network. Any attempt to access information from or transfer information to another candidate in whatever manner is a contravention of the examination rules and regulations and will be viewed in a serious light.

WAIT FOR THE INSTRUCTION FROM THE INVIGILATOR BEFORE YOU TURN THE PAGE.

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SECTION A: THEORY (COMPULSORY)

THIS SECTION MUST BE ANSWERED ON THE ANSWER SHEET. REMEMBER TO WRITE YOUR EXAMINATION NUMBER ON THE ANSWER SHEET AND TO PLACE IT IN YOUR EXAMINATION FOLDER.

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Read ALL the questions carefully.
3. Use only BLUE or BLACK ink.
4. Write neatly and legibly.

QUESTION 1: INFORMATION SYSTEMS

1.1 Certain decisions must be made before buying a new computer. One of them concerns the screen.

Name FIVE other important factors you should consider when purchasing a new computer. (5)

1.2 Name any THREE financing methods to use when buying a computer. Give ONE advantage of each method. (3 × 2) (6)

[11]

QUESTION 2: OPERATING SYSTEMS

2.1 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (2.1.1–2.1.10) on the ANSWER SHEET.

2.1.1 The Display option on the Control Panel gives you options for changing the screen saver.

2.1.2 Backup is a system tool that saves data on a computer's hard drive.

2.1.3 The option Connect to a Wireless Network is via Control Panel: Network and Sharing Centre.

2.1.4 Changes to the display or sleep mode of a computer are done via the power options of the Control Panel.

2.1.5 The System Defragmenter is used to display the information of the system.

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2.1.6 To uninstall programs on the system the option of Programs and Features on the Control Panel must be used.

2.1.7 Features like the Windows Watch, Calendar and Weather are installed via the option Desktop Gadgets on the Control Panel.

2.1.8 Physical formatting is also called relative or high-level formatting.

2.1.9 Partitioning splits the hard drive into parts making it appear as multiple drives.

2.1.10 The RAM, ROM and cache memory are known as the housekeeping areas.

(10 × 1) (10)

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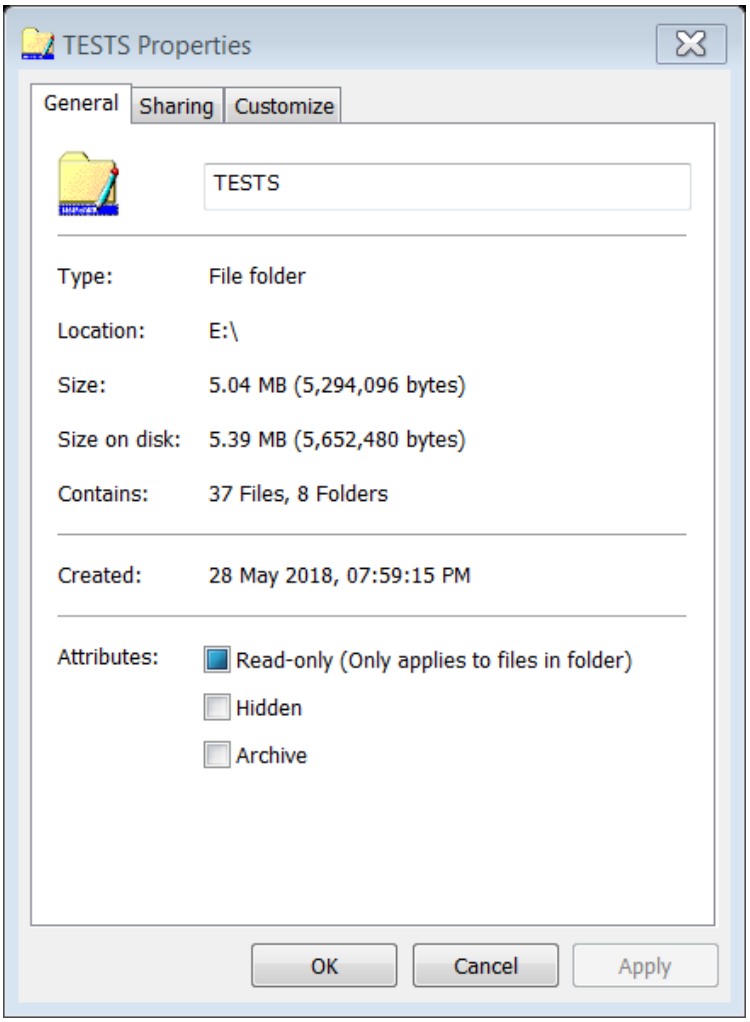
2.2 Use the screen shot to answer the questions.



2.2.1 What is the name of this folder?

2.2.2 When was this folder created?

2.2.3 Where is this folder located on the computer?

2.2.4 How many files and folders does this folder contain?

(4 × 1) (4)
[14]

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QUESTION 3: VIRUSES

Choose a term from COLUMN B that matches a description in COLUMN A. Write only the letter (A–O) next to the question number (3.1–3.13) on the ANSWER SHEET.

COLUMN A		COLUMN B
3.1	Process of converting information or data into a code, especially to prevent unauthorised access	A malware
3.2	Software specifically designed to disrupt, damage or gain authorised access to a computer system	B ransomware
3.3	Hardware or software acting as barrier through which all information between networks and external systems must travel	C firmware
3.4	Fraudulent practice of sending emails as if from reputable companies to get personal information, such as passwords or credit card numbers	D file-infecting virus
3.5	Type of malicious software designed to block access to a computer system until a sum of money is paid	E trojan
3.6	Infects boot sector of floppy disks or the master boot record (MBR) of hard disks	F fake news
3.7	Infects executable files with the intent to make them permanently unusable by overwriting the code or inserts infected code into an executable file	G computer worm
3.8	News found in traditional news, social media or fake news websites not based on facts, but presented as being factually accurate	H hacker
3.9	Person who uses computers to gain unauthorised access to data	I phishing
3.10	Email messages sent out in bulk, often for commercial purposes, by botnets or networks of virus-infected computers	J boot sector virus
3.11	Standalone malware computer program that replicates itself in order to spread to other computers	K spoofing
3.12	Malicious computer program which misleads users about its true intent and is camouflaged in the form of regular software such as utilities or games	L spam
3.13	Attempt to capture, change and retransmit an e-mail so that messages appear to come from someone else	M firewalls
		N encryption
		O shareware

(13 × 1) **[13]**

QUESTION 4: TROUBLESHOOTING

4.1 Poor maintenance is often the cause of hardware problems.

Name TWO measures to prevent damage to each of the following:

4.1.1 Keyboard

4.1.2 Mouse

(2 × 2) (4)

4.2 Give the reason and/or possible solution of each of the following computer problems:

4.2.1 Computer has frozen and programs are not responding (2)

4.2.2 Computer is slow (3)

4.2.3 Printer is not printing (3)

[12]

TOTAL SECTION A: 50

CANDIDATES MUST ANSWER ONLY SECTION B OR SECTION C.

SECTION B: WORD PROCESSING

INSTRUCTIONS

1. Write the version of the word processing program that you are using on the front cover of your EXAMINATION FOLDER, for example MS Word 2013.

2. Read the instructions carefully.

3. Use a 12 pt font size, for example Courier New 12 pt, except when receiving other instructions.

4. The following information must appear on each page as a header:

   Align EXAMINATION NUMBER and COMPUTER NUMBER against left-hand margin — Align QUESTION NUMBER against right-hand margin

   EXAMINATION NUMBER (COMPUTER NUMBER) QUESTION NUMBER

5. Use the date function to insert all dates.

6. Put ALL PRINTOUTS in the correct order in your EXAMINATION FOLDER. Only ONE PRINTOUT per question may be handed in.

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QUESTION 5

Create a letterhead for Khawuleza Fibre Optics Services for invoices and quotations.

1. Open a new document.

2. Use Arial 12 pt.

3. All margins must be 0,5"/1,27 cm.

4. Insert your EXAMINATION NUMBER/COMPUTER NUMBER and the QUESTION NUMBER as indicated in the instructions.

5. Insert a single horizontal line of ½ pt from the left- to the right-hand margin at the top of the page.

6. Leave TWO line spaces after the line and create THREE columns: column 1: 5 cm/1,97"; column 2: 7 cm/2,76" and column 3: 5 cm/1,97".

7. Key in the following text and do all manipulations as indicated below:

7.1.1 Column 1:

Join the
fastest
growing
fibre
network

Insert text in Bradley Hand ITC 22 pt, align left, bold, 5 lines

7.1.2 Column 2:

Insert any shadow WordArt as indicated.
Text: KHAWULEZA
Font: Arial 30 pt, bold, Black
Fit the WordArt to the width of the column, centred

Key in the following below the WordArt, centred. Use font size and formatting as indicated:

FIBRE OPTICS SERVICES — *Arial 14 pt, bold, centred*

Unshaped
Uncapped

Arial 10 pt, centred

7.1.3 Column 3:
Retrieve the picture saved as FIBRE OPTICS GRAPHICS.
Insert the picture right-aligned. Change the size of the picture to 2,54 cm/1'' in height and 2,54 cm/1'' in width.
Apply the picture style Drop shadow rectangle.
Insert a single line picture border of ¼ pt.

Leave TWO line spaces and insert the text and symbols (Wingdings) as indicated in 10 pt and align right.

✆ 0800 000 555
✉ info@khawulezafibre.com
🖱 www.khawulezafibre.com

8. Change to ONE column.
Leave TWO line spaces and insert a single line, weight ½ pt, from the left- to the right-hand margin.

9. Add the following footer:

9.1.1 Insert a double horizontal line of 1½ pt from the left- to the right-hand margin. Leave TWO line spaces and key in the following text, 10 pt and centred:

9.1.2 Fibre House, 5 Montagu Road, Port Elizabeth 6100
Reg: 2018/013579/06, VAT - 4567891023

10. Save the file as Q5 OPTICS LH.

11. Print the letterhead and place the PRINTOUT in your EXAMINATION FOLDER.

[32]

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QUESTION 6A

Use the letterhead to create a primary document to be used as an invoice to clients of KHAWULEZA. The data source file OPTICS DATA is already saved in the folder COMPUTER PRACTICE N6\STUDENT FILES folder.

1. Retrieve Q5 OPTICS LH.

2. Use Arial 12 pt unless instructed otherwise.

3. Margins must be 0,5"/1,27 cm.

4. Change the question number in the header to 6A.

5. Use the mail merge function to link OPTICS DATA that is saved in the COMPUTER PRACTICE N6\STUDENT FILES folder to the primary document.

6. Leave TWO line spaces below the letterhead and create the THREE tables (auto fit to window) according to the proofreading signs as shown on the next page. Do not key in the instructions. Do not exceed the margins.

7. Insert field names where indicated with [ ]. Do not key in the [ ] brackets.

8. Bold the field names.

9. Use justification, wrapping of text and format exactly as indicated in the table. Adjust the column width where necessary.

10. Centre all cells vertically.

11. Use shading of 25% grey where indicated.

12. Insert borders exactly as indicated. Change the weight to 1½ pt as indicated on the next page.

13. Use the table formulae and calculate the answers where the ? appears. Display the answers as currency with TWO decimals.

    13.1.1 PRICE = QUANTITY x UNIT PRICE

    13.1.2 SUBTOTAL = Sum of PRICE

    13.1.3 VAT @ 15% = 15% of PRICE

    13.1.4 TOTAL PAYABLE = SUBTOTAL + VAT

14. Insert the following footnote after the word PRICE in the second table (column heading) as indicated (use 1 as footnote number):

    Per month for a 24 months contract period

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Letterhead

WIRELESS INSTALLATION JOB CARD:

Table headings and column headings: capital letters, bold

CUSTOMER ID:	[CUSTOMER ID]
CLIENT NAME:	[NAME] [SURNAME]
ONSITE CONTACT NAME:	[CONTACT NAME]
ONSITE CONTACT NUMBER 1:	[CONTACT NO1]
ONSITE CONTACT NUMBER 2:	[CONTACT NO2]
ADDRESS:	[STREET], [SUBURB], [CITY]
PACKAGE DETAILS:	10 Mbps max
ESTIMATED INSTALLATION TIME:	3 hours

Shading: Gray - 25%
Row height: 0,7 cm/0,3"

PACKAGE:

Insert footnote, footnote number 1

Insert symbol (Wingdings 252)

DOWNLOAD SPEED	UPLOAD SPEED	PRICE	TICK
Up to 2 Mbps	Up to 1 Mbps	R499	
Up to 10 Mbps	Up to 3 Mbps	R699	✓
Up to 15 Mbps	Up to 4 Mbps	R799	
Up to 30 Mbps	Up to 7 Mbps	R1199	

STOCK AND EQUIPMENT:

ITEM	QUANTITY	UNIT PRICE (R)	PRICE
Pole	2	350	?
Bracket	1	450	?
Cable	50	16	?
Router	1	2500	?
Labour	3	270	?
		SUBTOTAL	?
		VAT @ 15%	?
		TOTAL PAYABLE	?

15. Save the document as Q6A OPTICS TABLE.

16. Print the document (with the merge fields visible) on ONE page in portrait orientation and place the PRINTOUT in you EXAMINATION FOLDER.

(38)

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QUESTION 6B

1. Use the merge function and complete the merge to create the documents to be sent to the different customers.

2. Change the QUESTION NUMBER in the header to 6B.

3. Ensure that the footnote numbers stay the same on ALL pages and that the merged fields are in bold.

4. Ensure that the columns are wide enough to fit the merged data without wrapping.

5. Save the merged documents as Q6B OPTICS MERGED.

6. Print the merged documents and place the PRINTOUTS in your EXAMINATION FOLDER. (6)

QUESTION 6C

Use the appropriate function to create address labels for the different customers.

1. Create 20 labels (4 columns × 5 rows). The following label can be used:

   Label vendor: Avery A4/A5. Product number: J5101

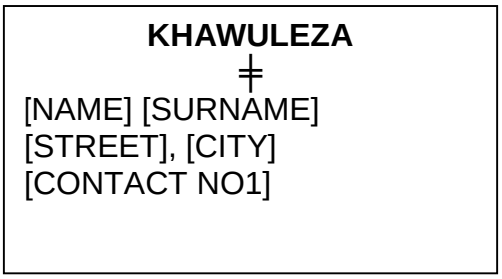
2. Use landscape orientation.

3. Use Baskerville Old Face 12 pt.

4. Display the borders of all 20 labels.

5. The word KHAWULEZA must appear on ALL the labels in 16 pt, capital letters, centred and bold.

6. Make use of the data source OPTICS DATA that is saved in the COMPUTER PRACTICE N6\STUDENT FILES folder to prepare labels. The following data must appear on the labels, left-aligned as shown:



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7. Complete the merge and insert your EXAMINATION NUMBER and QUESTION NUMBER on the last label right-aligned. Do NOT insert your EXAMINATION NUMBER and QUESTION NUMBER as a header.

8. Save the labels as Q6C OPTICS LABELS.

9. Print the labels on ONE A4 landscape page and place the PRINTOUT in your EXAMINATION FOLDER.

(16)
[60]

QUESTION 7

This document is an information leaflet in which fibre technology is compared with traditional ADSL technology.

1. Retrieve the file FIBRE that is saved in the COMPUTER PRACTICE N6\STUDENT FILES folder.

2. Edit the document as indicated in the instructions and according to the proofreading signs.

3. Change the font to Rockwell 12 pt.

4. Insert your EXAMINATION NUMBER/COMPUTER NUMBER and the QUESTION NUMBER as indicated in the instructions.

5. Margins must be 1,27 cm/0,5''.

6. Justify the text and use hyphenation.

7. At the top of the document insert the SmartArt indicated on the next page according to the following instructions:

   Type: Process – Arrow Ribbon
   Font: Rockwell 32 pt
   Font colour: Black
   Shape outline: Black 2¼
   Shape fill: No fill
   SmartArt size (approximately): Height – 4 cm/1,57'', Width – 15 cm/5,9''

8. Insert the equation where indicated.

9. Paragraphs marked with an asterisk (*) are main paragraph headings, level 1, ** indicates level 2, et cetera.

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10. Use the format below to number the paragraphs:

Level	Format	Align at	Indent text
1	1)	0	0,63 cm/0,25"
2	a)	0,63 cm/0,25"	1,27 cm/0,5"
3	i)	1,27 cm/0,5"	1,9 cm/0,75"
4	(1)	1,9 cm/0,75"	2,7 cm/1,06"

11. Ensure that all paragraphs are indented correctly.

12. Insert page breaks where indicated.

13. Change the orientation of the second page to landscape.

14. Insert an endnote after the acronym ADSL in the first paragraph. Use 2 as the endnote number.

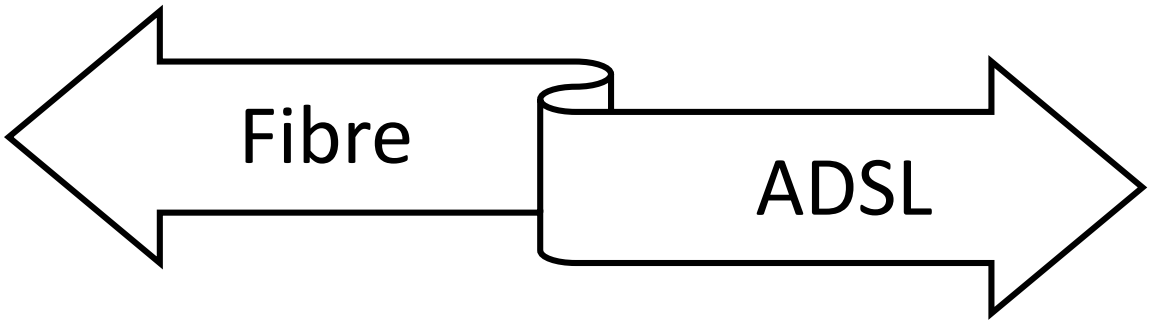
    Asymmetric Digital Subscriber Line

15. Use the function to find the unit Mbps and replace it with the words Megabits per second in capital letters, bold and underlined.

16. Save the file as Q7 FIBRE.

17. Print the document and place the PRINTOUTS in your EXAMINATION FOLDER.

Insert SmartArt (Process, Arrow Ribbon)



Fibre is the fastest thing this side of the sun and everybody's talking about it. So what's all the fuss about? Is it simply about speed, or is there more? Read on to find out how fibre compares to ADSL and whether taking the fibre plunge is worth it!

Insert the endnote, start at 2

Insert the following equation here, 16 pt, right-aligned

$$ASDL\ Speed \leq 40\ Mbps + \sqrt{\frac{Cable\ diameter + type}{Distance}} + \iint Data$$

*__ADSL – THE FACTS__

**ADSL, or asymmetric digital subscriber line, uses copper cable and offers high-speed connectivity as opposed to older technologies such as dial up internet that worked through a landline with a modem.

***__Pros:__
****It is available in most areas.
****It offers competitive speeds for users who are seeking basic connectivity and are not overly active online.
****There are capped and uncapped versions available depending on your needs.

column 2, right

***__Cons:__
****The further your home is from the Telkom exchange (little structures set up in certain neighbourhoods where connections meet locally) the slower the ADSL speed.
****ADSL is susceptible to electrical interference.
****ADSL requires a lot of maintenance, which means there are often reliability issues.
****You need a landline to be able to access the internet with ADSL.

column 1, left

Change to two columns

╪

***__Available speeds:__
****ADSL is available in the following speeds: 1, 2, 4, 8, 10, 20 and 40 Mbps.

---------- *Insert page break*

Change this page to landscape

*__FIBRE – THE FACTS__

**Fibre, or fibre optics, literally harnesses the speed of light by transferring data through means of glass cabling. This makes it the fastest and most reliable form of internet connectivity currently available.

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***Pros:**
****This technology offers several benefits such as clarity and reliability in data transfer. One of the reasons for this is that glass cannot conduct electricity, so electrical storms, for instance, cause less interference on the lines.
****Data can travel up to 50 km to/from an exchange before any form of degradation in speed takes place! So it does not matter how far you are from your exchange.
****Fibre cabling itself is similar in price to the copper used for ADSL, but much easier to maintain.
****You do not need a landline to access the internet with fibre.
****And the best part about fibre is that new ways might be found to transmit light data even faster without the infrastructure becoming redundant.
****Capped and uncapped options are being rolled out as you read.

Sort the pros alphabetically

***Cons:**
****The biggest drawback to fibre at the moment is that it is new on the market and not available in all locations yet!
****That said, Khawuleza can already offer fibre access in almost 100,000 locations, so it is worth checking whether you are eligible.

***Available speeds:**
****Fibre is available in the following speeds: 2, 4, 8, 10, 20, 40, 50 and 100 Mbps (depending on the fibre provider).

---------- *Insert page break*

***ADSL VS FIBRE**

Why is fibre so desirable? While the blistering speed is the most attractive prospect to many people, the true beauty of fibre lies in its reliability, and it's not being dependent on a landline. If you can get fibre in your area, swapping out a 40 Mbps ADSL line for a 40 Mbps fibre line makes sense when you consider that your extraordinarily fast internet won't fail you when you need it most – and if you can get something faster, even better!

Copy equation here

[31]

QUESTION 8

1. Retrieve the file FIBRE OPTICS that is saved in the COMPUTER PRACTICE N6\STUDENT FILES folder.

2. Change the font of the document to Century Gothic 12 pt.

3. Margins must be 2,54 cm/1".

4. Insert your EXAMINATION NUMBER/COMPUTER NUMBER and the QUESTION NUMBER as header as indicated in the instructions.

5. Edit the document as indicated below and according to the proofreading signs.

6. Retrieve the file ADVANTAGES that is saved in the COMPUTER PRACTICE N6\STUDENT FILES folder and insert the file where indicated.

7. Insert page breaks where indicated.

8. Insert page numbers at the top, centred in line with your EXAMINATION NUMBER and the QUESTION NUMBER. Bold the page numbers.

9. Apply the following styles:

    9.1 Modify heading 1 as follows:
    Font: Rockwell 12 pt; font colour automatic (black); bold; capital letters
    Paragraph: centre; spacing before and after 0

    9.2 Apply heading 1 to ALL paragraph headings marked with an *.

    9.3 Modify heading 2 as follows:
    Font: Rockwell 12 pt; font colour automatic (black); underlined
    Paragraph: alignment left; spacing before and after 0

    9.4 Apply heading 2 to all the subparagraph headings marked with **.

10. MANIPULATION OF FIRST PAGE (TABLE OF CONTENTS):

    10.1 Change the text TABLE OF CONTENTS to 16 pt, capital letters, bold and centred. Insert text borders around the text (margin to margin) and apply light grey shading. Leave TWO line spaces.

    10.2 Do not show a page number on this page.

    10.3 Mark the following headings for the Table of Contents:

    ALL headings marked with * and **

    10.4 Generate the Table of Contents.

    10.5 Page numbers must be right-aligned with tab leader lines.

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10.6 Ensure that there is a page break at the end of the Table of Contents.

11. MANIPULATION OF THE SECOND PAGE:
(This page starts with HISTORY.)

11.1 The page number must start at 10.

11.2 Centre this page vertically.

11.3 Sort the paragraphs as indicated.

11.4 Update the Table of Contents, if necessary.

12. MANIPULATION OF THE LAST PAGE (INDEX):

12.1 Change the text INDEX to 16 pt, capital letters, bold and centred. Insert text borders around the text (margin to margin) and apply light grey shading.

12.2 Leave TWO line spaces after the heading INDEX and generate the index with the words below. Do NOT include references to the Table of Contents. Use only main entries.

light; transmission; optical fibre; distance; applications, sensors; cables

12.3 Page numbers must be right-aligned with tab leader lines. Use TWO columns.

13. Save the document as Q8 OPTICS TOC.

14. Print only the following THREE pages**:** first page (TABLE OF CONTENTS), second page (page 10) and last page (INDEX). You will be penalised if you print any other pages. Place the PRINTOUTS in your EXAMINATION FOLDER.

Table of Contents] *16 pt, upper case, bold, centred, text borders, shading*

Generate Table of Contents here

----------*Page break*

Centre this page vertically.

***History**

Guiding of light by refraction, the principle that makes fibre optics possible, was first demonstrated by Daniel Colladon and Jacques Babinet in Paris in the early 1840s.

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***Record speeds**

Achieving a high data rate and covering a long distance simultaneously are challenging, but possible with fibre connections.
2012: Nippon Telegraph and Telephone transferred 1 Pbits/s over a single 50 km fibre.
2006: Nippon Telegraph and Telephone transferred 14 Tbits/s.
2010: Nippon Telegraph and Telephone transferred 69.1 Tbits/s over a single 240 km fibre.
2009: Bell Labs in France transferred 15.5 Tbits/s over 7000 km fibre.

Sort in ascending order according to year

***Uses**

****Communication**
Optical fibre is especially advantageous for long-distance communications.

****Sensors**
Optical fibres can be used as sensors to measure strain, temperature and pressure because of its small size.

****Power transmission**
Optical fibre can be used to transmit power using a photovoltaic cell to convert the light into electricity.

****Other uses**
They are used as light guides in medical situations. In some buildings, optical fibres route sunlight from the roof to other parts of the building. Optical fibre lamps are used for illumination in decorative applications.
----------*Page break*

Insert the file ADVANTAGES here as indicated below.

***Advantages**

The advantages of optical fibre communication compared to copper wire systems are:

****Broad bandwidth**
A single optical fibre can carry over 3,000,000 full-duplex voice calls or 90 000 TV channels.

****Immunity to electromagnetic interference**
Information traveling inside the optical fibre is immune to electromagnetic interference.

****Low attenuation loss over long distances**
Attenuation loss can be as low as 0.2 dB/km in optical fibre cables, allowing transmission over long distances.

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****Electrical insulator**
Optical fibres do not conduct electricity and can be strung on poles alongside high voltage power cables.

****Material cost and theft prevention**
Conventional cable systems use large amounts of copper.

****Security of information passed down the cable**
Copper can be tapped with very little chance of detection.

----------*Page break*

***Principles of operation**

An optical fibre is a cylindrical nonconducting waveguide that transmits light along its axis.

****Index of refraction**
The index of refraction is a way of measuring the speed of light in a material. A phone call carried by fibre between Sydney and New York, a 16 000 kilometre distance, means that there is a minimum delay of 80 milliseconds (between one caller speaking and the other hearing).

****Total internal reflection**
This effect is used in optical fibres to confine light in the core.

****Multi-mode fibre**
Fibre with a large core diameter is called multi-mode.

****Single-mode fibre**
Fibre with a core diameter less than about ten times the wavelength of the propagating light.

****Special-purpose fibre**
Polarisation-maintaining fibre is a unique type of fibre that is commonly used in fibre optic sensors.
----------*Page break*
***Practical issues**

****Materials**
Glass optical fibres are almost always made from silica, but some other materials, such as sapphire, fluoride glass, phosphate glass, and chalcogenide glass are also used.
----------*Page break*
***Cable construction**

In practical fibres the cladding usually has a tough resin coating and an additional buffer layer which may be further surrounded by a jacket layer.

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****Termination and splicing**
Optical fibres are connected to terminal equipment by optical fibre connectors.

****Free-space coupling**
It is often necessary to align an optical fibre with another optical fibre. This can involve both carefully aligning the fibre and placing it in contact with the device, or a lens can be used to allow coupling over an air gap.

****Fibre fuse**
When a fibre is subjected to a shock or is otherwise damaged, a fibre fuse can occur. In situations such as undersea cables a fibre-fuse protection device at the transmitter can break the circuit to keep damage to a minimum.

****Chromatic dispersion**
Light sources are not perfectly monochromatic. This has the effect that, over long distances and at high modulation speeds, different frequencies of light arrive at different speeds at the receiver.
----------*Page break*

Index } *16 pt, upper case, bold, centre, text borders, shading*

Generate Index here.

[27]

TOTAL SECTION B: 150

OR

SECTION C: SPREADSHEET

INSTRUCTIONS AND INFORMATION

1. Write the version of the spreadsheet program that you are using on the front cover of your EXAMINATION FOLDER, for example MS Excel 2013.

2. Read the instructions for each question carefully before you attempt to answer the questions.

3. Use Arial 10 pt, except when receiving other instructions.

4. The following information must appear on each page as a header:

   Align your EXAMINATION NUMBER and COMPUTER NUMBER against the left-hand margin

   Align the QUESTION NUMBER against the right-hand margin

   EXAMINATION NUMBER (COMPUTER NUMBER) QUESTION NUMBER

5. ALL lines in the spreadsheet must be inserted with the method with which you are familiar.

6. Use the date/time function to insert ALL dates and time.

7. Refer to ALL values that need to be repeated as absolute cell references.

8. ALL PRINTOUTS must fit on ONE A4 page. If a spreadsheet does NOT fit on ONE page portrait orientation, you may use landscape orientation or adjust the margins, unless otherwise specified.

9. Put ALL PRINTOUTS in your EXAMINATION FOLDER.

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QUESTION 9A

Design a spreadsheet to summarise the client contracts of the company Khawuleza Fibre Optics Services.

9.1 Retrieve the spreadsheet FIBRE CONTRACTS that is saved in the COMPUTER PRACTICE N6\STUDENT FILES folder.

9.2 Change the font of the spreadsheet to Arial 10 pt, unless instructed otherwise.

9.3 Insert your EXAMINATION NUMBER/COMPUTER NUMBER and the QUESTION NUMBER as indicated in the instructions.

9.4 Change the page layout to landscape orientation.

9.5 Follow the instructions below and on the screenshot. Take ALL the proofreading signs into consideration. Insert ALL text as indicated.

9.6 Insert 6 open rows at the top of the spreadsheet.

9.7 Format the first row as follows:

9.7.1 Merge and centre cells A1 to H1.

9.7.2 Set the row height to 3,5 cm/1,38".

9.7.3 Insert the text Fibre Optics Services in Arial 14 pt and align text at the bottom centred.

9.7.4 Insert the text Khawuleza as a WordArt object (Style: Reflection) in the open space above Fibre Optics Services. If your program version does not have the reflection style available, you may use any shadow effect.

9.7.5 Change the font of the WordArt to Agency FB 40 pt and bold.

9.7.6 Ensure the WordArt object does not overlap any current text.

9.7.7 Format the cell/row to have a Fill Effect of two colours, vertical shading style (dark to light).

9.8 Insert the picture FIBRE LOGO that is saved in the COMPUTER PRACTICE N6\STUDENT FILES folder in row 1 and format as follows:

9.8.1 Set the picture height and width to 2,54 cm/1".

9.8.2 Align the picture with the right border of column H.

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9.8.3 Format the picture to the style Drop Shadow Rectangle.

9.9 Insert the text in rows 3–5. Use the correct Wingdings symbols.

9.10 Use a function to insert the current date and time in cell H3. Display the date and time as indicated in the screenshot. The date and time must update the system date each time the spreadsheet is opened.

9.11 Format row 7 as follows:

9.11.1 Merge and centre cells A7 to H7.

9.11.2 Use a spreadsheet function to change the text in row 7 (DOWNLOAD 20 UPLOAD 2 MBPS UNCAPPED CONTRACTS) to capital letters.

9.11.3 Bold row 7.

9.12 Format row 8 as follows:

9.12.1 Insert the text of the new column headings.

9.12.2 Apply text wrap to all headings as indicated in the screenshot.

9.12.3 Change all headings to bold.

9.12.4 Centre all headings.

9.13 Bold all text in rows 16 to 19.

9.14 Insert the formulae/functions where letters of the alphabet appear to do the following calculations:

A The Product price is a monthly fee that the client pays for data services. Assign the range name PRODUCT to the reference table A22:C26. Use this reference table and the appropriate spreadsheet function to determine the product price per month based on the Product code.

B Use the reference table B28:F29 and the appropriate spreadsheet function to determine the Router price, based on the Router type. Use absolute cell references where applicable.

C Use the appropriate function to determine the Router price per month. If the contract type is a year, the client pays no monthly fee. Clients with a month-to-month contract pay 5% of the Router price per month. Work out the monthly price for these clients or display a 0 value for clients with a year contract.

D Each month clients pay the Product price and the Router price per month. Use a formula to calculate the Estimated yearly fees.

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E Use the appropriate function to determine the Total of each column.

F Use the appropriate function to count the Number of clients. Use a function that allows you to count the client names in column A.

G Use the appropriate function to determine the Average product price.

H Use the appropriate function to display the Highest estimated yearly fees of all clients.

9.15 Copy the formulae/functions to other cells as indicated.

9.16 Sort the Product code and the corresponding data in ascending order.

9.17 Display the Product price, Router price, Router price per month, Estimated yearly fees, Total, Average product price and Highest estimated yearly fees as currency with TWO decimals.

9.18 Display the Number of clients as an integer.

9.19 Apply all vertical and horizontal borders as indicated.

9.20 Adjust the column widths and row heights to display all data correctly (as indicated on the screenshot). You may adjust the margins if necessary.

9.21 Save the spreadsheet as QUESTION 9A FIBRE CONTRACTS.

9.22 Print the spreadsheet without row and column headings in landscape orientation on ONE page. Place the PRINTOUT in your EXAMINATION FOLDER.

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Insert WordArt
Style: Reflection

Align: Bottom, centre **Font:** Arial 14 pt

Khawuleza
Fibre Optics Services

Insert picture
Picture style:
Drop shadow rectangle
Size: 2,54 cm/1" x
2,54 cm/1"



Row 1:
Merge and centre A1:H1
Row height: 3,5 cm /1,38"

Cell Fill Effect:
2 colours; Vertical shading style

0800 000 555
info@khawulezafibre.com
https://www.khawulezafibre.com

Insert text
and correct symbols

Insert text → Date and time: 18-09-2019 13:44

Insert all new column headings

Use a function to insert
date and time;
Format as indicated

Merge and centre A7:H7
Use a function to
change to capital letters

DOWNLOAD 20 UPLOAD 2 MBPS UNCAPPED CONTRACTS

All headings:
Bold, centre horizontally and vertically;
apply the correct text wrap

Client	Product code	Router type	Contract type	Product price	Router price	Router price per month	Estimated yearly fees
				A	B	C	D
Adonis, TJ	P4	M4	Month-to-month				
Benade, O	P1	M1	Year				
Crombie, MI	P2	M2	Month-to-month				
Madolo, Z	P3	M3	Month-to-month				
Tatubana, O	P1	M1	Year				
Zaleni, ZL	P5	M5	Month-to-month				
Total				E →			F
Number of clients							G
Average product rice							H
Highest estimated yearly fees							

Sort: Product code and corresponding data in ascending order

Insert text in bold

Product code	ISP	Product price
P1	Home-Connect	R 690,00
P2	WiruLink	R 790,00
P3	MWeb	R 800,00
P4	Webafrica	R 830,00
P5	Cool Ideas	R 1 400,00

Router type	M1	M2	M3	M4	M5
Router price	R 1 200,00	R 1 600,00	R 2 000,00	R 2 400,00	R 2 800,00

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QUESTION 9B

9.1 Retrieve the spreadsheet QUESTION 9A FIBRE CONTRACTS.

9.2 Change the question number in the header to 9B.

9.3 Display row and column headings.

9.4 Delete the picture.

9.5 Hide the reference tables in rows 21 to 29.

9.6 Hide columns A to D.

9.7 Display the formulae.

9.8 Change the column widths and row heights so that ALL formulae are legible.

9.9 You may adjust the margins, if necessary, to fit the spreadsheet one landscape page.

9.10 Save the spreadsheet as QUESTION 9B FIBRE CONTRACTS.

9.11 Insert the file name of the spreadsheet at the bottom centre of the footer.

9.12 Centre the spreadsheet horizontally and vertically on the page.

9.13 Print the spreadsheet with row and column headings and centred on ONE landscape page. Place the PRINTOUT in your EXAMINATION FOLDER.

(28)
[70]

QUESTION 10A

Design a spreadsheet to aid the financial planning of the company.

10.1 Create the spreadsheet by following the instructions below and on the screenshot. Take all proofreading signs into consideration.

10.2 Use Arial 10 pt, unless instructed otherwise.

10.3 Insert your EXAMINATION NUMBER/COMPUTER NUMBER and the QUESTION NUMBER as indicated in the instructions.

10.4 Change the page layout to landscape orientation.

10.5 Insert the text as indicated on the screenshot.

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10.6 Insert the company name, Khawuleza Fibre Optics Services, in bold in A1 using Agency FB 40 pt.

10.7 Insert the text FINANCIAL PLANNING in A3 in Arial 14 pt and bold.

10.8 Merge and centre the following cells:

A5:B5
D5:E5
A14:B14
D14:E14.

Insert the text in capital letters as indicated on the screenshot. Format these headings, using bold and italics.

10.9 Insert the rest of the text in rows 6–20.

10.10 Insert the column headings in row 22 in capital letters, bold and italics. Centre all these headings.

10.11 Copy the names of the clients from the file FIBRE CONTRACTS that is saved in the COMPUTER PRACTICE N6\STUDENT FILES folder. Paste these names in cells A24:A29. Ensure that the names are in alphabetical order.

10.12 Insert the text in cell A30 in bold and italics as indicated on the screenshot.

10.13 Insert the values of DISTANCE TO HOUSE (M) in cells B24–B29 as integers.

10.14 Insert formulae/functions where letters of the alphabet appear to do the calculations below. Use absolute cell reference where applicable when referring to values.

A Use the values in B6 to B8 and the appropriate spreadsheet function to calculate the MONTHLY PAYMENT for the loan of the property.

B Calculate the TOTAL AMOUNT that will be paid over the full loan period.

C Use the values in E7 to E10 and the appropriate spreadsheet function to calculate PRESENT VALUE OF INVESTMENT. This is based on a fixed monthly payment over 5 years.

D Use the values in B15 to B17 and the appropriate spreadsheet function to calculate the ANNUAL INTEREST RATE of an annuity. This is based on a fixed monthly payment over 5 years.

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E In order to get fibre optics services, the client has to pay a fee for each metre from the connection point to the house. The client also has to pay a once-off installation fee. Refer to the prices in E15 and E16 and use the following data to calculate the CONNECTION COST: DISTANCE TO HOUSE (M), COST PER METRE and ONCE-OFF INSTALLATION FEE.

F The client has to pay a further fee, MAINTENANCE COST PER MONTH. This cost is determined by the MAINTENANCE COST PER MONTH (E17) and the DISTANCE TO HOUSE (M) of each client.

G The TOTAL COST is the cost for the first month. This is the sum of the CONNECTION COST and MAINTENANCE COST PER MONTH.

H The client pays the TOTAL COST for the installation during the first year of the contract. Each client also pays for the data for each month, as indicated in E18. Use the appropriate spreadsheet function to calculate MONTHLY PAYMENT, based on the TOTAL COST and the values in E18 to E20.

I Use the appropriate spreadsheet function to calculate the total of each column.

10.15 Copy the formulae/functions to the other cells as indicated.

10.16 Display all monetary values as currency with TWO decimals.

10.17 Display ANNUAL INTEREST RATE values as percentage with ONE decimal.

10.18 Display TERM OF LOAN (YEARS), TERM OF INVESTMENT (YEARS), CONTRACT TERM (YEARS) and DISTANCE TO HOUSE (M) as integers.

10.19 Display all borders as indicated on the screenshot.

10.20 Adjust the column widths and row heights to display all data correctly as indicated on the screenshot. You may adjust the margins if necessary.

10.21 Save the spreadsheet as QUESTION 10A FINANCE.

10.22 Print the spreadsheet without row and column headings in landscape orientation on ONE page. Place the PRINTOUT in your EXAMINATION FOLDER.

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Khawuleza Fibre Optics Services

Font: Agency FB 40 pt, bold

FINANCIAL PLANNING — **Font:** Arial 14 pt, bold

Merge and centre
Format: Bold and italics

PROPERTY	
LOAN	R 800 000,00
ANNUAL INTEREST RATE	10,0%
TERM OF LOAN (YEARS)	20
MONTHLY PAYMENT	**A**
TOTAL AMOUNT PAID	**B**

VALUE OF INVESTMENT	
ANNUAL INTEREST RATE	8,5%
TERM OF INVESTMENT (YEARS)	5
MONTHLY PAYMENT	R 2 000,00
PRESENT VALUE OF INVESTMENT	**C**

Merge and centre
Format: Bold and italics

INTEREST RATE	
INVESTMENT	R 5 000,00
TERM OF INVESTMENT (YEARS)	5
MONTHLY PAYMENT	R 100,00
ANNUAL INTEREST RATE	**D**

CONNECTION COST	
COST PER METRE	R 195,00
ONCE-OFF INSTALLATION FEE	R 1 500,00
MAINTENANCE COST PER MONTH	R 0,80
MONTHLY DATA COST	R 699,00
ANNUAL INTEREST RATE	10,0%
CONTRACT TERM (YEARS)	1

CLIENT	***DISTANCE TO HOUSE (M)***	***CONNECTION COST***	***MAINTENANCE COST PER MONTH***	***TOTAL COST***	***MONTHLY PAYMENT***
Adonis, TJ	15	**E**	**F**	**G**	**H**
Benade, O	25				
Crombie, MI	25				
Madolo, Z	20				
Tatubana, O	15				
Zaleni, ZL	10				
TOTAL					

Copy and paste the names from the file FIBRE CONTRACTS Ensure that the names are in alphabetical order

Bold, italics

All column headings: Bold, italics, centre horizontally and vertically

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QUESTION 10B

10.1 Retrieve the spreadsheet QUESTION 10A FINANCE.

10.2 Change the question number in the header to 10B.

10.3 Display row and column headings.

10.4 Display gridlines.

10.5 Hide column A.

10.6 Hide rows 1–4.

10.7 Display the formulae.

10.8 Change the column widths and row heights so that ALL formulae are legible.

10.9 Save the spreadsheet as QUESTION 10B FINANCE.

10.10 Print the spreadsheet with row and column headings and gridlines in landscape orientation on ONE page. Place the PRINTOUT in your EXAMINATION FOLDER.

(30)
[65]

QUESTION 11

11.1 Retrieve the spreadsheet ISP SURVEY that is saved in the COMPUTER PRACTICE N6\STUDENT FILES folder.

The table provides an overview of the results of a customer survey with scores out of 10. Only ISPs which received a significant number of responses were listed.

11.2 Create a MIXED/COMBO CHART to display the Value for money, Network quality, Support and billing and Average of the following top 5 ISPs:

Afrihost, Axxess, Crystal Web, Vox and Webafrica

Ensure that the horizontal axis displays the ISP names and the vertical axis displays the rating.

11.3 Display the Average as a line chart and Value for money, Network quality, Support and billing data as clustered columns.

11.4 Use a spreadsheet instruction to move the chart to a new sheet.

11.5 Insert your EXAMINATION NUMBER/COMPUTER NUMBER and the QUESTION NUMBER as indicated in the instructions.

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11.6 Insert the following chart title in 2 rows as indicated:

11.6.1 TOP FIVE ADSL AND FIBRE ISPs IN SOUTH AFRICA
Survey by: MyBroadband

11.6.2 The 1st line of the title must be in Agency FB 18 pt and bold.

11.6.3 The 2nd line of the title must be in Century Gothic 10 pt.

11.7 Insert the following axis titles:

11.7.1 Vertically rotated title: RATING

11.7.2 Horizontal title: SA INTERNET SERVICE PROVIDERS

11.8 Display the data labels as follows:

11.8.1 Display labels for the Value for money series as data callouts above the chart. Display only the values.

11.8.2 Show labels for the line chart below the line.

11.9 Display the legend as follows:

11.9.1 Place the legend above the chart plot area without overlapping the plot area.

11.9.2 Ensure the legend display the series correctly:
Value for money, Network quality, Support and billing and Average

11.10 Save the chart as QUESTION 11 ISP CHART.

11.11 Print the chart as a new sheet in landscape orientation. Place the PRINTOUT in your EXAMINATION FOLDER.

[15]

TOTAL SECTION C: 150
GRAND TOTAL: 200

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COMPUTER PRACTICE N6

ANSWER SHEET **EXAMINATION NUMBER:** | | | | | | | | | | | | | |

SECTION A: THEORY

QUESTION 1:	
QUESTION 2:	
QUESTION 3:	
QUESTION 4:	

QUESTION 1: INFORMATION SYSTEMS

1.1 _____

_____

_____

_____

_____

(5 × 1) (5)

1.2 Method:

_____

Advantage:

_____

_____

Method:

_____

Advantage:

_____

_____

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ANSWER SHEET **EXAMINATION NUMBER:** | | | | | | | | | | | | | |

Method:

_____

Advantage:

_____

_____

(3 × 2) (6)
[11]

QUESTION 2: OPERATING SYSTEMS

2.1 2.1.1 _____

2.1.2 _____

2.1.3 _____

2.1.4 _____

2.1.5 _____

2.1.6 _____

2.1.7 _____

2.1.8 _____

2.1.9 _____

2.1.10 _____

(10 × 1) (10)

2.2 2.2.1 _____

2.2.2 _____

2.2.3 _____

2.2.4 _____

(4 × 1) (4)
[14]

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ANSWER SHEET **EXAMINATION NUMBER:**

QUESTION 3: VIRUSES

3.1 _____

3.2 _____

3.3 _____

3.4 _____

3.5 _____

3.6 _____

3.7 _____

3.8 _____

3.9 _____

3.10 _____

3.11 _____

3.12 _____

3.13 _____

(13 × 1) **[13]**

QUESTION 4: TROUBLESHOOTING

4.1 4.1.1 _____

_____

4.1.2 _____

_____

(2 × 2) (4)

4.2 4.2.1 _____

_____ (2)

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ANSWER SHEET **EXAMINATION NUMBER:**

4.2.2 _____

_____

_____ (3)

4.2.3 _____

_____

_____ (3)
[12]

TOTAL SECTION: 50

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