



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

DATA MANAGEMENT: FARMING N6

(4090476)

26 November 2019 (X-Paper)

09:00–12:00

This question paper consists of 18 pages.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
DATA MANAGEMENT: FARMING N6
TIME: 3 HOURS
MARKS: 200

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
 2. Read ALL the questions carefully.
 3. Number the answers according to the numbering system used in this question paper.
 4. Write neatly and legibly.
-

**TURN THE PAGE FOR THE INSTRUCTIONS.
YOU GET 25 MINUTES TO READ THE
INSTRUCTIONS.**

INSTRUCTIONS TO INVIGILATORS AND CANDIDATES

Read the following instructions carefully before attempting to answer the paper – invigilators will explain, if necessary.

1. This question paper comprises two sections, namely:




SECTION A: Theory (80 marks)





SECTION B: Word Processing/Text Manipulation and Spreadsheet and Database (120 marks)

SECTION A must be answered in the ANSWER BOOK. The answer book must be placed on top of ALL the PRINTOUTS in the yellow folder. 

SECTION B is done on the computer with the aid of word processing, spreadsheet and database program. Each PRINTOUT must have both the EXAMINATION NUMBER and the QUESTION NUMBER printed either as header or footer (as per instruction). HAND-WRITTEN EXAMINATION NUMBERS and QUESTION NUMBERS are NOT acceptable.

The PRINTOUTS must be placed in the folder in the correct sequence. Candidates making use of continuous paper must tear the pages apart before handing in.

2. The time allocated for the question paper is THREE hours.
3. No additional printing time is allowed.
4. 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. 
5. If there is a problem with certain printers, for example if they do NOT print ë; send a report with your centre's ANSWER SHEETS.
6. A candidate may have in his/her possession a typing ruler, a dictionary and a list of ASCII codes. A spellchecker may be used.
7. Each answer must be printed on a separate sheet of paper and on ONE side of the paper only. PRINTOUTS must be placed in the EXAMINATION FOLDERS immediately. 
8. Do NOT staple ANSWER SHEETS together. Marks will be subtracted for printing on BOTH sides of the paper as well as stapling of ANSWER SHEETS. 
9. At the end of the examination session, ALL PRINTOUTS which a candidate wishes TO BE MARKED, must be placed in the examination folder and ALL other PRINTOUTS, together with the EXAMINATION FOLDER, must be handed to invigilator. NO PRINTOUTS whatsoever may be removed from the examination room or put into waste-paper bins. PRINTOUTS NOT submitted for marking must be collected at the end of each session and must be destroyed at the end of the day. Only ONE PRINTOUT per question or subsection of a question may be handed in.

10. PRINTOUTS to be marked must be arranged in the same order as that of the questions in the examination paper. Marks will be subtracted for answer sheets NOT arranged into number order. 
11. PRINTOUTS may be on A4 sheets of paper or on continuous computer paper; unless a specified size of paper is required in a question or a letterhead is supplied.
12. 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 lost work. It is the candidate responsibility to protect their answers from obliteration.
13. In order to print the original as well as the edited attempts of the answers, candidates are reminded to save the work after each separate section 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 diskette with the saved answers (properly marked with the candidate's EXAMINATION NUMBER on the cover). (These diskettes must be handed to the examination section for safekeeping for ONE year, in case enquiries should be made by the examiner/moderator and superintendents of examination). If there are no diskettes to save the answers, candidates must create folders on the computer they are working on and save all their work in that folder, the name of which will be their EXAMINATION NUMBERS. The invigilator will then save the folders on a USB and submit the USB to the Exam office for safekeeping (for ONE year). 
15. Please note that NO paper may be taken out of the examination room, including question papers. ALL papers must be handed in. Question papers may be given to candidates at the end of the last session.
16. In the event of an examination paper being examined 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. 


NO candidate may print his/her work for another candidate, make his/her floppy disk/storage device available to another candidate or access other candidates' 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 treated as an irregular act.

SECTION A**QUESTION 1**

1.1 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 (1.1.1–1.1.10) in the ANSWER BOOK.


1.1.1 A set of programs with a full set of documentation is considered as ...

- A a database package
- B a file package
- C software 
- D a software package


1.1.2 A specialised program that allows users to use a specific application is classified as ...

- A relative programs
- B application programs
- C replicate programs
- D system software

1.1.3 Devices that accept data from outside the computer and transfer it into the CPU are called ...





- A input devices 
- B digital devices
- C analogue devices
- D truth table peripherals

1.1.4 A central processing unit (CPU) consists of a/an ...

- A control unit 
- B arithmetic and logic unit
- C memory
- D All of the above




1.1.5 ... represents one million cycles per second, which is the clock speed of a microprocessor.

- A BPS 
- B DPI
- C PPM
- D MHz

- 1.1.6 How can the risk of unauthorised computer system access be reduced?
- A By installing anti-spam software
 - B By using a firewall 
 - C By setting up a WAN
 - D By encrypting all data stored in the system
- 1.1.7 Files that are included with an e-mail message are often referred to as ...
- A server-side inclusions
 - B attachments 
 - C cookies
 - D JavaScript
- 1.1.8 What is *spam*?
- A The act of overloading an e-mail server by using denial-of-service attacks.
 - B E-mail messages that are infected by viruses.
 - C A large quantity of messages that do not reach the recipient
 - D Unsolicited direct advertising sent to a large number of recipients.
- 1.1.9 You are only allowed to make a copy of a copyright-protected computer program in the following instances:
- A Always 
 - B When making a backup
 - C For sales purposes
 - D Only if the copies could be distributed free of charge
- 1.1.10 CD-ROM is a type of multimedia because text, images and ... are stored on these disks.
- A programs 
 - B files
 - C sound
 - D letters


(10 × 2) (20)

- 1.2 Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A–I) next to the question number (1.2.1–1.2.7) in the ANSWER BOOK.

COLUMN A		COLUMN B	
1.2.1	General term used to describe the physical equipment of a computer system 	A	enter
1.2.2	Function of ... is to read from or write information to a floppy disk	B	FireWire port
1.2.3	A ... is used to indicate a location on the computer screen	C	disk drive
1.2.4	Key that moves the cursor to the beginning of the next line of text	D	parallel port
1.2.5	Applies to a collection of related records in a database	E	hardware 
1.2.6	Also known as iLink 	F	peripherals
1.2.7	Has multiple holes that house the prongs	G	cursor
		H	memory
		I	field

(7 × 2)

(14)

- 1.3 The use of computers in the farming business has come with its own disadvantages, one of which is computer fraud. 

List FIVE ways in which the owner of a farming business could fight computer fraud. (5 × 2)

(10)

[44]

QUESTION 2

A hard disk is a magnetic device that is used as external memory for the magnetic storage of data.

- 2.1 Explain the functions of the following hard disk components.

2.1.1 Platters 

2.1.2 Read/write head

2.1.3 Electric motor

2.1.4 Drive electronics

(4 × 2)

(8)

2.2 For the end user to use the hard disk, it must be prepared first.

Explain how the following preparations are done on a hard disk.


2.2.1 Physical formatting

2.2.2 Partitioning 

2.2.3 Logical formatting


(3 x 5) (15)

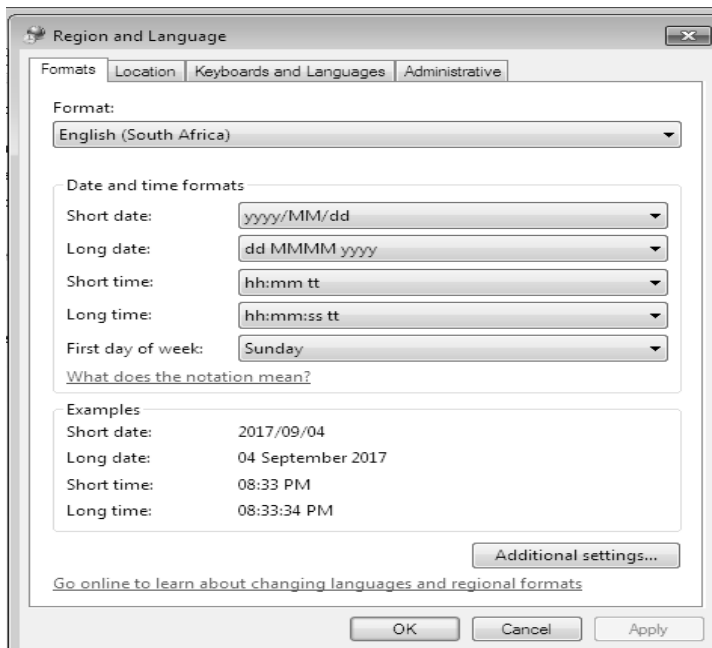
2.3 Many advantages are derived from saving files on a hard disk.

List any THREE advantages of using a hard disk  (3)

2.4 Describe the process of saving, retrieving and editing a file on a hard disk. In your description, show different components and memories that are used. (5)
[31]

QUESTION 3

A computer user can change the format of date and time displayed on his/her computer. Below is a window which shows the location where the computer user can change the date and time format. Activate the same window, do a print screen of the window and paste it on a page in Microsoft Word Application. Make a PRINTOUT with your EXAMINATION NUMBER left and QUESTION 3 right on the header. 



[5]

TOTAL SECTION A: 80

SECTION B: PRACTICAL (SPREADSHEET)**QUESTION 4**

4.1 Create the following document (as shown in FIGURE 1 below) in the spreadsheet (Excel) program, using Courier New 12 pt. Use the exact cell references as indicated. You will be penalised for using wrong cell addresses.

4.1.1 Do NOT insert row and column headings. They were only inserted so that you could see which cell addresses you should use.

4.1.2 Save the document as QUESTION 4.1.

4.1.3 Insert your EXAMINATION NUMBER and QUESTION 4.1 on the right-hand side as a header. (2)

4.1.4 Print the document on single A4 landscape without row, column headings and gridlines. (2)

4.1.5 Marks for accuracy (2)

	A	B	C	D	E	F	G	H	I	J	K
1	AGRI-PROCESSORS										
2	WORKERS SALARIES FOR 2017										
3	WORKER	AGE	DEPARTMENT	SEPT-DEC SALARY				INCENTIVE	BONUS	TOTAL INCOME	INCOME TAX DEDUCTIONS
4				SEPT	OCT	NOV	DEC				
5	LISA	22	Procurement	15500	16000	15990	15600				
6	JOHNS	45	Maintenance	16000	16200	16000	15900				
7	LAMECK	35	Transport	14000	14500	14900	15100				
8	PRUDENCE	29	Finance	25200	23035	21900	20100				
9	GILBERT	52	Procurement	18200	18000	18620	19000				
10	WILLARD	41	Transport	15590	14000	14200	15150				
11			Income Tax:	15%							
12	TOTAL										
13	AVERAGE										
14	LOWEST TOTAL INCOME										
15				INCENTIVE	100	200	300	500	600		
16				DEC-SALARY	15000	16000	17000	19000	20000		

FIGURE 1

4.2 Retrieve the document, QUESTION 4.1, and make changes as indicated in FIGURE 2 below. Immediately save it as QUESTION 4.2.

4.2.1 Insert empty rows between the following rows:





- 1 and 2
- 3 and 4
- 16 and 17

(1)

4.2.2 Do the following changes on the main heading 'AGRI-PROCESSORS'

- Merge and centre across the width of the spreadsheet
- Albertus Extra Bold size 16 pt
- Underline

(3)

- 4.2.3 Change the subheading 'WORKERS SALARIES FOR 2017' to italics and underline.  (2)
- 4.2.4 Bold and centre (horizontally and vertically) the column headings in row 5 and 6. (2)
- 4.2.5 Use the wrap text function for the column headings in row 5, as indicated in FIGURE 2 below. (1)
- 4.2.6 Insert horizontal and vertical lines, using the method you are familiar with. (2)
- 4.2.7 Calculate the answers where the letters of the alphabet A–G appear in FIGURE 2. Make use of the correct cell reference in the formulas.
- A. Use the HLOOKUP-function to calculate the Incentive according to Dec Salary. Use the table at the bottom as a reference.
- B. Use the IF-Function to calculate the Bonus. The Bonus is given to any worker who gets an incentive of R200 or more. The Bonus given is 50% of Dec Salary.
- C. Sum of monthly salary, Incentive and Bonus 
- D. Income Tax = 15% of Total Income. (Use absolute sale reference)
- E. Calculate the Total of indicated columns. 
- F. Calculate the Average of the indicated columns.
- G. Find the Lowest Total Income. (7 × 2) (14)
- 4.2.8 Sort the data in descending order according to AGE Column. (1)
- 4.2.9 Display ALL figures that represent money with R sign and 2 decimals. ALL other figures must be displayed as integers. (2)
- 4.2.10 Centre and Bold ALL answers calculated in A–G.  (2)
- 4.2.11 Make a printout of the spreadsheet in landscape with row and column headings but NO gridlines. The spreadsheet must fit on TWO pages. (3)

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AGRI-PROCESSORS										
WORKERS SALARIES FOR 2017										
WORKER	AGE	DEPARTMENT	SEPT-DEC SALARY				INCENTIVE	BONUS	TOTAL INCOME	INCOME TAX DEDUCTIONS
			SEPT	OCT	NOV	DEC				
LISA	22	Procurement	15500	16000	15990	15600	A	B	C	D
JOHNS	45	Maintenance	16000	16200	16000	15900				
LAMECK	35	Transport	14000	14500	14900	15100				
PRUDENCE	29	Finance	25200	23035	21900	20100				
GILBERT	52	Procurement	18200	18000	18620	19000				
WILLARD	41	Transport	15590	14000	14200	15150				
		Income Tax:	15%							
TOTAL			E							
AVERAGE			F							
LOWEST TOTAL INCOME									G	
			INCENTIVE	100	200	300	500	600		
			SALARY	15000	16000	17000	19000	20000		

FIGURE 2



4.3 Retrieve the document QUESTION 4.2 and immediately save it as QUESTION 4.3.

4.3.1 Display the formulae. (7)

4.3.2 Change the question number in the header to QUESTION 4.3. (1)

4.3.3 Hide columns B and C. (1)

4.3.4 Adjust the column widths. (1)

4.3.5 Save and print the document in landscape without the row and column headings or gridlines. The document must fit on TWO A4 pages. (4)

[14]


4.4 Retrieve the document you saved as QUESTION 4.2 and immediately save it as QUESTION 4.4.

4.4.1 Create a combination graph comparing NOV SALARY, represented by a line (with markers) graph, with DEC SALARY, represented by a column (clustered) graph. (3)

4.4.2 Insert the following information as the heading of your graph:

NOV and DEC SALARIES
EXAM NUMBER
QUESTION 3.4

(3)

- 4.4.3 The legends must appear on the right side of the graph. (1)
 - 4.4.4 Data labels must appear on all columns representing DEC SALARY. (1)
 - 4.4.5 The following must be used as titles for both X-axis and Y-axis:
Vertical axis: SALARIES
Horizontal axis: WORKERS (2)
 - 4.4.6 Move the graph to a new sheet  (1)
 - 4.4.7 Print the graph in landscape on ONE page. (1)
- [12]**

QUESTION 5

The computer lecturer has already keyed in a document on the data diskette/-desktop/documents. The name of the document is 'WORD DOCUMENT'. The following is a copy of the document.

FOOD SECURITY

What does food security mean?



You must have enough wholesome food to cover your dietary needs in order to lead an active, healthy life. The key is availability, supply and quality (food must be nutritious as well as safe, which relates to handling, cleaning, storage and processing, from 'farm to fork').

How do we compare?



South Africa ranks 47th out of 113 countries in the Economist's 2016 Global Food Security Index. Strengths include availability, high nutritional standards and food safety, favourable agricultural import tariffs and low food loss. On the downside, undernourishment affects 5% of South Africans, with food deprivation statistically at 54 kJ per person per day.

So how are households affected?



'South Africa's food security has improved. As a nation we're food secure, but at household level the dynamics are different: as soon as food prices shoot up, affordability becomes a problem', says Wandile Sihlobo, head of economic and agribusiness intelligence at the Agricultural Business Chamber (Agbiz).

Studies show that poor South African families spend up to two-thirds of their monthly income on two food groups out of a possible 12, compared to the wealthiest households, whose diet generally incorporates 10. Ironically, an unbalanced diet due to poverty often leads to obesity because of the empty kilojoules consumed.

What about food prices?



Prices will drop around the third quarter of 2017 until late April 2018, says Agbiz. Food inflation is set to level out at 7,4% this year, down from about 12%. 'Why, South Africa is literally swimming in grain,' tweeted Sihlobo, 'as we only need 10.5 million tons to feed our population. This huge surplus could earn SA close to R7 billion in exports. And we're expecting the largest soya bean harvest on record, 1.2 million tons.' The excellent grain harvest is likely to bring down poultry prices, because feed (maize and soya bean) makes up 80% of the input cost for chicken production. However, meat prices will increase as farmers are restocking their cattle herds after the drought led to larger numbers of livestock being slaughtered last year.





LET'S TALK ABOUT THE DROUGHT...





Most of South Africa experienced good rainfall and good harvests, says Sihlobo. 'But we are worried about the ongoing drought in the Western Cape.' He explains that if rain does not arrive before the end of July, this will adversely affect wheat-related products such as bread and cereals, increasing pressure on struggling farmers.

How can we boost food security?

Agri SA says the state should declare agriculture a 'strategic priority sector'. Funds are needed to 'climate proof' farming by fixing inefficient water systems, planting drought-resistant crops, using shade netting and exploring crop rotation. 

You can do your bit: grow your own veggies. Or switch to less expensive or no-name brands, shop for specials, use loyalty promotions (PnP Smart Shopper instant savings or cash-back discounts are great options). Buy only to fill your fridge with what you eat, don't waste food. 


- 5.1 Open the document 'WORD DOCUMENT' mentioned in the previous page.
- 5.2 Immediately save it under a new name, 'QUESTION 5'. 
- 5.3 Make the following changes on the document.
- 5.3.1 Change the heading 'FOOD SECURITY' to **Bold and Underline**. Font type must be Arial Black, size 16 pt. (4)
- 5.3.2 Change the first paragraph 'You must have ... farm to fork'
- Indentation must be 5 cm/2' on both sides.
 - Line spacing must be double.
 - The paragraph must be centred. (4)
- 5.3.3 Move the last paragraph so that it becomes the second paragraph in the passage. (1)
- 5.3.4 The sentence 'How do we compare?' must be **bold, italic and right-aligned**.  (3)
- 5.3.5 ALL sentences from 'Prices will drop ... last year' must be in bullet form. (2)
- 5.3.6 Change the following paragraphs to **TWO** columns, with a vertical line in-between, as indicated. **Bold and underline** the column headings. Fully justify the columns. (5)

LET'S TALK ABOUT THE DROUGHT...

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How can we boost food security?

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5.3.7 Insert a flower clip art of your choice at the top right corner of the first page below the header. The height of the clip art must be 4 cm. Use picture effects: shadow offset left.  (4)

5.3.8 Insert a page number at the top right of ALL pages. (1)


5.4 Key in your EXAMINATION NUMBER left and QUESTION 5 right in the footer.  (2)


5.5 Save the document and make a PRINTOUT. [26]

QUESTION 6

You have just been employed at a food processing company. The manager has tasked you to prepare a database. Create the database using the file name 'FOOD'.

6.1 Create the following fields

FIELD	INFORMATION 
NO.	Auto number
FOOD	20 characters
COST	Will not exceed R2 995.99
DATE OF PURCHASE	The date must be in the format YYYY/MM/DD
NUTRIENT	15 characters
AVAILABILITY	YES/NO
EXAM NO	Long integer
QUESTION 3	10 characters

6.2 Key in the following records and save the table as 'NUTRIENTS'. Make a PRINTOUT of the table on A4 landscape.  (10)

NO	FOOD	COST	DATE OF PURCHASE	NUTRIENT	AVAILABILITY	EXAM NUMBER	QUESTION 3
1	MAIZE	R122,50	22/03/2016	Carbs	Yes	YOUR EXAM NO.	
2	SPINACH	R150,00	29/03/2017	Vitamins	yes	YOUR EXAM NO.	
3	FISH	R225,30	02/06/2016	Proteins	No	YOUR EXAM NO.	
4	POTATO	R150,20	10/12/2014	Carbs	yes	YOUR EXAM NO.	
5	MANGO	R100,00	03/05/2014	Vitamins	No	YOUR EXAM NO.	
6	BEEF	R350,00	30/02/2015	Proteins	Yes	YOUR EXAM NO.	
7	MILK	R290.00	22/08/2017	vitamins	Yes	YOUR EXAM NO.	



6.3 Make a PRINTOUT of a structure of the table above. The PRINTOUT must be portrait. (5)

6.4 Create a Query with ALL fields in the table
The title of the Query must be your 'EXAM NO. QUEST 3 QUERY'.
Print the Query on a landscape page. (3)

6.5 Create a report using the following headings:

FOOD	COST	DATE OF PURCHASE	NUTRIENT
------	------	------------------	----------

(1)

6.5.1 ALL food must appear in the report, except those costing R150,00 and less. (1)

6.5.2 Sort the data in alphabetical order according to the Food Column. (2)

6.5.3 The title of the Report must be your 'EXAM NO. QUEST 3 REPORT'. (2)

6.5.4 The calculated AVERAGE COST must appear underneath the last COST and the word AVERAGE must appear underneath the last FOOD. (4)

6.5.5 Make a PRINTOUT of the report on an A4 portrait page. (1)

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TOTAL SECTION B: 120
GRAND TOTAL: 200