higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

DATA MANAGEMENT: FARMING N5

(4090465)

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

This question paper consists of 15 pages.

Copyright reserved

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
DATA MANAGEMENT: FARMING N5
TIME: 3 HOURS
MARKS: 200

TURN THE PAGE FOR THE INSTRUCTIONS. YOU HAVE 25 MINUTES TO READ THE INSTRUCTIONS.

Copyright reserved

INSTRUCTIONS TO INVIGILATORS AND CANDIDATES

READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO ANSWER THE PAPER – INVIGILATORS WILL EXPLAIN, IF NECESSSARY.

1. The question paper comprises TWO SECTIONS, namely:

   SECTION A: Theory (100 marks) 

   SECTION B: Word Processing/Text Manipulation and Spreadsheet and Database (100 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 the word processing, spreadsheet and database programmes. Each PRINTOUT must have both THE EXAMINATION NUMBER and the question number printed either as header or footer (as per instruction). Handwritten 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, e.g. does NOT print ë; the invigilator must send a report with the centre's ANSWER SHEETS.

6. A candidate may have in his/her possession a typing ruler, a dictionary and a list of ASCII codes. Spellcheck 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 conclusion of the examination session ALL PRINTOUTS which a candidate wishes to be marked, must be placed in the EXAMINATION FOLDER and ALL other PRINTSOUTS, 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.

Copyright reserved

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 in 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's 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 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 which is named using 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 candidate 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.

17. 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.

Copyright reserved

SECTION A (THEORY)

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 The speed of the Central Processing Unit is measured in:

A Gigabytes
B Bytes
C Kilobytes
D Megahertz

1.1.2 Hardware is the term that is used to refer to …

A the components that you cannot touch.
B the set of instructions that a computer must have to function.
C the physical components of a computer.
D all programs of the computer.

1.1.3 … is an interface on the computer that allows asynchronous transmission of data characters one bit at a time.

A Parallel port
B USB port
C Fire Wire port
D Serial port

1.1.4 When the computer is off and then switched on, it is called …

A warm boot.
B cold boot.
C restart.
D hot boot.

1.1.5 The following is NOT an ergonomic principle a computer-user must consider when using a computer.

A Good, enough indirect light
B Good ventilation
C Chair with wheels
D Distance and height to the screen

1.1.6 … means illegally duplicating copyrighted software.

A Data publicity law
B Software piracy
C Data Protection Act
D Copyright

Copyright reserved

1.1.7 When a computer user follows correct ergonomic principles, …

A injuries, errors, defects and costs are reduced
B less work is done.
C more heat is generated by computers.
D employee absence increases.

1.1.8 An intranet is a …

A network system.
B private company network.
C filing system.
D private company network including external users.

1.1.9 Which statement is correct about ROM?

A It is called the main memory.
B It is a volatile memory.
C It contains data that cannot be changed.
D It is the home of the silicon chip.

1.1.10 This refers to the buying and selling of goods and services online on the internet.

A e-learning
B e-banking
C e-government
D e-commerce

(10 × 2) (20)

1.2 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (1.2.1–1.2.10) in the ANSWER BOOK.

1.2.1 Another name for FireWire is iLink.

1.2.2 One disadvantage of a suspensive sale agreement is that monthly repayments are deductible from taxable income.

1.2.3 A blog is a website with regular entries of commentary, graphics or video.

1.2.4 The larger commercial computers are called notebook computers.

1.2.5 One example of modifier keys is Ctrl.

1.2.6 Partitioning makes the computer to function very slowly.

1.2.7 The left mouse button is used in Windows application to display shortcut menus.

Copyright reserved

1.2.8 Double-clicking a desktop icon starts or opens the item it represents.

1.2.9 Shareware is a program that has been copyrighted, but the creator offers it to anyone to copy and try out.

1.2.10 An end user license agreement is a legal contract between a vendor and the wholesaler of the software.

(10 × 2) (20)

1.3 Choose a term from COLUMN B that matches a description in COLUMN A. Write only the letter (A–I) next to the question number (1.3.1–1.3.7) in the ANSWER BOOK.

COLUMN A		COLUMN B	
1.3.1	Preparation of a hard disk in a format that enables Windows to write data to and retrieve data from it	A	central processing unit
1.3.2	To divide the hard drive into parts that can be available to the operating system	B	WAN
1.3.3	To protect the user against unexpected power failure	C	Trojan Horse
1.3.4	Where record is kept of the position where files are stored	D	modem
1.3.5	Computer network that directly connect computers over a wide geographical area	E	relative formatting
1.3.6	Device that is linked to the computer and the telephone line	F	uninterrupted power supply
1.3.7	It is disguised in computer programs that seem legitimate, for example computer games and utility programs	G	partitioning
		H	file allocation table
		I	physical formatting

(7 × 1) (7)

Copyright reserved

1.4 Define each of the following terms:

1.4.1 Freeware

1.4.2 E-learning

1.4.3 Repetitive strain

1.4.4 Information technology

1.4.5 Stylus

1.4.6 Web log

1.4.7 Firewall

(7 × 2) (14)

1.5 Write out each of the following acronyms in full:

1.5.1 WLAN

1.5.2 GUI

1.5.3 CVS

1.5.4 USB

1.5.5 RSI

(5 × 2) (10)
[71]

QUESTION 2

2.1 Files infected with a virus can be disinfected.

Give the steps that may be followed when using anti-virus programmes. (5)

2.2 Explain what each of the following DOS error messages mean.

2.2.1 File not found

2.2.2 Insufficient disk space

2.2.3 Bad command or filename

(3 × 2) (6)

Copyright reserved

2.3 Ergonomics is a field of technology that considers human capabilities and limitations in the design of machines and equipment that people use, and the environments in which they operate.

Justify why ergonomics has to be considered in designing of machines and equipment used in work places. (10)
[21]

QUESTION 3

3.1 During logical formatting THREE important areas are formed.

Name each area and write down its function. (3 × 2) (6)

3.2 What do you understand the word *defragmentation* to mean? (2)
[8]

TOTAL SECTION A: 100

SECTION B (SPREADSHEET)

QUESTION 4

4.1 Create the following document in the spreadsheet (Excel) program.
Use the exact cell references as indicated. You will be penalised for using wrong cell addresses.

4.1.1 Do NOT include row and column headings or lines; they were only included so that you will see which cell addresses to use. (1)

4.1.2 Adjust Column A to fit the text. (1)

4.1.3 Save the document as QUESTION 4.1

4.1.4 Insert your EXAMINATION NUMBER and QUESTION 4.1 on the righthand-side as a header. (2)

4.1.5 PRINT the document on A4 landscape without row headings, column headings and gridlines. (1)

Copyright reserved

	A	B	C	D	E	F
1	THE WILLOW TRADERS					
2						
3		2013	2014	2015	2016	2017
4	**Income**					
5	Units sold	100000				
6	Unit Price	3				
7	**Gross Revenue**					
8						
9	**Fixed Costs**					
10	Production facility	50000				
11	Adminstration	25000				
12	Total Fixed Costs					
13						
14	**Valuable cost**					
15	Unit manufacturing.cost	1.5				
16	Variable manufacturing.cost					
17						
18	**Earnings before taxes**					

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.

	A	B	C	D	E	F
1	THE WILLOW TRADERS					
2						
3		2013	2014	2015	2016	2017
4	**Income**					
5	Units sold	100000	**A** →	→	→	→
6	Unit Price	3	**B** →	→	→	→
7	**Gross Revenue**	**C** →	→	→	→	→
8						
9	**Fixed Costs**					
10	Production facility	50000	**D** →	→	→	→
11	Adminstration	25000	**E** →	→	→	→
12	Total Fixed Costs	**F** →	→	→	→	→
13						
14	**Valuable cost**					
15	Unit manufacturing.cost	1.5	**G** →	→	→	→
16	Variable manufacturing.cost	**H** →	→	→	→	→
17						
18	**Earnings before taxes**	**I** →	→	→	→	→

FIGURE 2

4.2.1 Make the following changes on the main heading 'THE WILLOW TRADERS':
- Change the font size to 18 pt and the font type to Algerian.
- Merge cell A1 to AF and centre the main heading. (4)

4.2.2 Change the following cells to Bold and Italics: A4, A7, A9, A14 and A18. (3)

4.2.3 Format row 18 with colour shading of – Blue-Gray, Text 2, lighter 80%. (2)

4.2.4 Calculate the answers where the letters of the alphabet A–I appear in FIGURE 2. Make use of the correct formulas.

A Units sold = Calculate this by 10% increase each year (2)

B Unit Price = Calculate this by 5% increase each year (2)

C Gross Revenue = Unit price multiplied by units sold (2)

D Production facility = Increase each year by 8% (2)

E Administration = Increase each year by 5% (2)

F Total = Total fixed costs (2)

G Unit manufacturing cost = Increase each year by 10% (2)

H Variable manufacturing cost = Unit manufacturing costs multiplied by units sold (2)

I Earnings before taxes = Gross revenue minus fixed costs minus variable manufacturing cost (3)

4.2.5 Insert horizontal and vertical lines using the method you are familiar with. (2)

4.2.6 Display ALL figures that represent money with an R sign and 2 decimal places. (3)

4.2.7 Make a PRINTOUT of the spreadsheet in landscape without row and column headings or gridlines. The spreadsheet must fit onto ONE page. (2)

Copyright reserved

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

4.3.1 Display the formulae. (2)

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

4.3.3 Adjust the column widths. (1)

4.3.4 Save and print the document in landscape with the row and column headings but without gridlines. The document must fit onto ONE A4 page. (1)

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 for Unit Sold and Unit Price. Unit Sold must be represented by a column (clustered) graph and Unit Price must be represented by a line graph. (2)

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

THE WILLOW TRADERS
EXAMINATION NUMBER
QUESTION 4.4 (3)

4.4.3 The legends must appear on the left-hand side of the graph. (1)

4.4.4 Change the appearance of the primary major horizontal gridline to size 6 pt. (2)

4.4.5 Move the graph to a new sheet and PRINT the graph in landscape on ONE page. (2)

[55]

QUESTION 5: WORD PROCESSING

The computer lecturer has already keyed in a document on the data diskette/desktop/documents. The name of the document is QUEST 5. The following is a copy of the document saved as QUEST 5.

Calf feeding
Computerised farming technology

Computerised farming technology includes moisture sensors, smart irrigation systems, terrain contour mapping and self-driven and GPS-enabled tractors, all of which contribute to improve farming sustainability.

IoT solutions enable farmers to control water troughs and feeders and even manage the irrigation system for the pastures. Machines are available that signal when stalls need to be cleaned.

Various types of wearables for cows allow dairy farmers to continuously monitor the health, location and behaviour of all their cows at the same time. The wearables collect information about the animals' temperature, activity, behaviour (feeding, sleeping, lameness, gait) and milk production levels and help farmers keep track of which cows have already been milked. Dairy farmers use the information from the trackers to determine when cows are in heat and ready for insemination and to detect any deviation from the norm. This makes the timely treatment of illness or abnormalities possible, which in turn impossible cow health and comfort.

All types of sensors are available to farmers. Drones can be fitted with multispectral sensors that indicate how crops should be watered. The same sensor mounted on a tractor that's fertilising soil can regulate the application of nitrogen so that the right amount is applied to maintain soil health. In-field moisture sensors in the ground can help farmers create customized irrigation systems for crops and pastures based on soil moisture and temperature. This type of technology can help farmers become more sustainable by managing the level and frequency of irrigation.

Equipment for happy cows
Cows love cow brushes, which stimulate blood circulation by their rotations and movements. According to some farmers, their cows line up for their turn to use this technology.

Rotary milking parlours make sanitisation of udders efficient and accessible and misting or evaporative systems keep cows cool and prevent heat stress.

MILKSHUTTLE

1. Physical ease of work: relieves your back
2. 3 big wheels for any terrain
3. Strong electric drive
4. Exact and simple dosing out of the milk
5. Four practical sizes

Copyright reserved

URBAN ALMA PRO

1. Latest technology with a user friend touchscreen
2. Future proof
3. Calf health reports round the clock
4. Only model with a closed loop system
5. Milk temperature is controlled by 3 sensors
6. Fully automatic cleaning system

Conclusion

Agtech data and technology equip farmers to work smart and produce the best quality products efficiently while continually improving the responsible management of animals and the environment.

5.1 Open the document QUEST 5 mentioned on the previous page. Immediately save it as QUESTION 5.

5.2 Key in your EXAMINATION NUMBER/IDENTITY NUMBER on the left and QUESTION 5 on the right in the header. (2)

5.3 Make the following changes on the document:

5.3.1 Change the heading Calf feeding to uppercase and make use of word art of your choice with size 30 pt. (3)

5.3.2 Change the font of the entire document from paragraph ONE to Courier New 12 pt and alignment to full justification. (4)

5.3.3 Change ALL subheadings to uppercase and bold. (2)

5.3.4 Change the numbered paragraphs with their subheadings into TWO columns divided by a line. Also change the numbering to the bullets of your choice. (4)

5.3.5 In the last paragraph, insert a triple-line paragraph border around the last paragraph with its subheading. Apply gray shading to the paragraph. (4)

5.4 Save the document and make a PRINTOUT. (1)

[20]

Copyright reserved

QUESTION 6: DATABASE

Open Database Programme and create a database COMMISSION and YOUR EXAMINATION NUMBER.

6.1 Create the following fields:

FIELD NAME	INFORMATION
PRODUCT	Consists of maximum 20 characters
CUSTOMER	Consists of maximum 15 characters
COST PRICE	Will NOT exceed R9 999
NUMBER ORDER	Number (integer)
COMMISSION PAID	Will NOT exceed R9 999
SALES DATE	Format (yyyy/mm/dd)

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

ITEM NUMBER	PRODUCTION	SALES MAN	COST PRICE	NUMBER ORDERED	COMMISSION PAID	SALES DATE
1	Milk	James	R7,99	85	R33,96	2017/08/14
2	Juice	Malatji	R9,50	120	R57,00	2017/08/15
3	Yorgurt	Chris	R15,00	96	R72,00	2017/08/16
4	Cream	Robert	R17,00	60	R51,00	2017/08/17
5	Cheese	Ndlovu	R13,50	35	R23,63	2017/08/18

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

6.4 Create a query which will include the following fields:

PRODUCTION	COST PRICE	COMMISSION PAID

(4)

6.5 Sort the contents of the database in ascending order according to the product. (2)

6.6 Add the criteria to select only the products which have less than R50,00 commission paid. (2)

6.7 Save as QUESTION 6 QUERY with YOUR EXAMINATION NUMBER and make ONE PRINTOUT of the query. (2)

[25]

TOTAL SECTION B: 100
GRAND TOTAL: 200

Copyright reserved