



# higher education & training

Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

## **NATIONAL CERTIFICATE (VOCATIONAL)**

### **FARM PLANNING AND MECHANISATION NQF LEVEL 4**

(1011044)

**8 March 2018 (Y-Paper)  
13:00–16:00**

**This question paper consists of 10 pages.**

**TIME: 3 HOURS  
MARKS: 150**

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**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.
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**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 Fruits for the local market are classified as ...
- A class 1, large, class 2, and small.
  - B factory bins, class 1, class 2 and small.
  - C extra-large, large, medium and small.
  - D class 1, class 2, class 3 and class 0.
- 1.1.2 Canning, freezing, drying, blanching etc. are part of ...
- A primary agriculture.
  - B consumer food preference.
  - C secondary agriculture.
  - D farm productions.
- 1.1.3 Animals that eats other animals only:
- A Herbivores
  - B Omnivores
  - C Detritivores
  - D Canivores
- 1.1.4 The type of pig breed whose product is bacon ...
- A large white.
  - B landrace.
  - C duroc.
  - D large black.
- 1.1.5 A spacing of ... metres is recommended when a strong fencing is required.
- A 20 metres
  - B 30 metres
  - C 16 metres
  - D 12 metres
- 1.1.6 Class 4 has a slope of ...
- A 2%
  - B 8%–12%
  - C 12%–20%
  - D 20%

1.1.7 This nozzle type is mainly used for insecticides and fungicides application where higher pressure is required:

- A Hollow cones nozzle
- B Drizzle jet nozzle
- C Flat fan nozzle
- D Flood jet

1.1.8 Natural veld found in high rainfall areas:

- A Sour veld
- B Sweet veld
- C Mixed veld
- D Bitter veld

1.1.9 Pre-grading in the packhouse includes removing all ... fruits.

- A small size
- B dirty
- C deformed
- D coloured

1.1.10 Most life is possible between temperatures of ...

- A -1 °C–10 °C
- B 1 °C–20 °C
- C 10 °C– 50 °C
- D 1 °C–50 °C

(10 × 1) (10)

- 1.2 Choose an/a item/word from COLUMN B that matches a description in COLUMN A. Write only the letter (A–Q) next to the question number (1.2.1–1.2.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
1.2.1	Privately owned commercial farms	A	dose
1.2.2	The withholding period for beans after spraying	B	return from capital
1.2.3	Double entry book keeping and records of all the expenditure and revenue of the farm including money in the bank account	C	class 1
1.2.4	The ability of land to carry stock	D	carrying capacity
1.2.5	The first community of plants and animals in a newly developed piece of land	E	7 days
1.2.6	Annual production per animal	F	return from livestock
1.2.7	Packed for export markets only	G	profit and loss account
1.2.8	Poultry breed for meet	H	organising
1.2.9	A volume of a spray mixture applied per surface unit	I	model C
1.2.10	Allocation of resources to certain tasks of production	J	pioneer community
		K	cash account
		L	14 days
		M	white leghorn
		N	primary succession
		O	White Australorp
		P	implementing
		Q	model B

(10 × 1)

(10)

- 1.3 Give ONE word/term for each of the following descriptions by choosing a word/term from the list below. Write only the word/term next to the question number (1.3.1–1.3.10) in the ANSWER BOOK.

mineralisation; water holding capacity; agitator feed; fauna; primary agriculture; Agri-BEE; tariff; degradation; precision seeder; crush, secondary agriculture; sweet veld; sour veld; flora; field capacity; crystallization; VAT

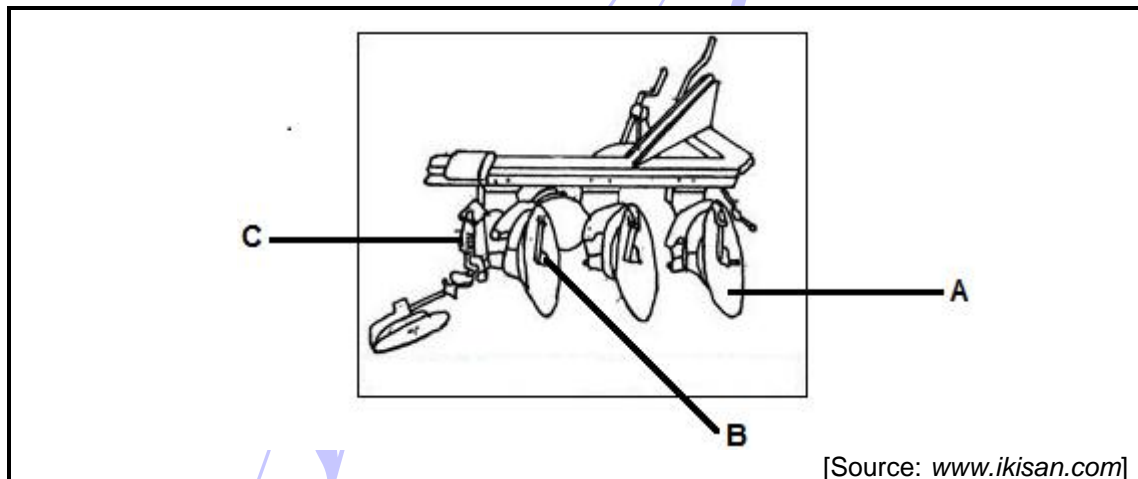
- 1.3.1 Adding value to agricultural products
- 1.3.2 Changing of organic substance into a non-organic substance
- 1.3.3 The degree to which the soil can hold water
- 1.3.4 Refer to animals
- 1.3.5 Spoiling the environment by pollution, overuse and erosion
- 1.3.6 Tax paid when importing goods
- 1.3.7 The machine is capable of planting single seeds
- 1.3.8 Social justice and fixing unfair land ownership
- 1.3.9 Natural veld found on drier areas
- 1.3.10 Passage which has been fenced off for handling cattle
- (10 × 1) (10)  
[30]
- TOTAL SECTION A: 30**

**SECTION B****QUESTION 2**

- 2.1 The South African agricultural environment has undergone tremendous structural changes over the past two to three decades leading to considerable deregulation and policy changes.
- 2.1.1 State FOUR major changes that were brought by deregulation of the agricultural sector with regards to marketing of agricultural products. (4)
- 2.1.2 Discuss the objectives of Marketing of Agricultural Products Act of 1996. (5)
- 2.1.3 Articulate the impact of exchange rate on the prices of agricultural products. (6)
- 2.2 Since agricultural enterprises bear more risk and uncertainty, it is important to have effective strategies to adapt to changing agricultural business environment.
- Discuss with practical examples how you would apply the following strategies in an agricultural business to minimize risk.
- 2.2.1 Input rationing (3 × 1) (3)
- 2.2.2 Diversification (3 × 1) (3)
- 2.3 Capital is one of the essential production factors of an agricultural enterprise that requires effective management.
- 2.3.1 State THREE categories of capital in a farming business. (3)
- 2.3.2 Describe each of the categories of capital classified in QUESTION 2.3.1. (3 × 2) (6)
- [30]**

**QUESTION 3**

- 3.1 Hydraulic system uses fluid dynamics to perform work both on and off the tractor.
- 3.1.1 Name TWO types of pumps usually used to obtain the necessary oil pressure. (2)
- 3.1.2 Describe the function of the three-point hydraulic system of a tractor. (2)
- 3.1.3 Name FOUR main components of the three-point hitch hydraulic system of a tractor. (4)
- 3.1.4 Advise on the correct procedure for maintaining the tractor hydraulic system to achieve its effective functioning. (5)
- 3.2 List FIVE legislations that govern farm employees in South Africa. (5)
- 3.3 Study the pictures below and answer the questions.



- 3.3.1 Identify the implement illustrated in FIGURE 1. (1)
- 3.3.2 Label parts A and B of FIGURE 1. (2)
- 3.3.3 State the main function of part A of FIGURE 1 during cultivation. (2)
- 3.3.4 Recommend FOUR conditions under which the implement in FIGURE 1 will be more effective for ploughing. (4)
- 3.3.5 Inform farm workers of any THREE safety rules they should comply with when operating farm machinery and equipment. (3)

**[30]**



**QUESTION 4**

- 4.1 4.1.1 Distinguish between *intensive* and *extensive* farming production systems. (2 × 2) (4)
- 4.1.2 Give THREE reasons mixed farming is favoured in agricultural enterprise. (3)
- 4.1.3 Advise the citrus fruit farmer in your area of the FIVE rules he should adhere to when harvesting. (5)
- 4.1.4 Often manual labour is used when harvesting fruits.  
Identify any THREE things that may influence the efficiency of manual labour. (3)
- 4.2 With modern technology, often GIS are used to obtain information about the geographical area of your farm.
- 4.2.1 Write the acronym GIS in full. (1)
- 4.2.2 Indicate FIVE pieces of information that will be provided by the GIS about the targeted area. (5)
- 4.2.3 Identify THREE aspects a farmer should take into account when assessing a farm land. (3)
- 4.2.4 Explain what is entailed in each aspect of assessment criteria. (6)
- [30]**

**QUESTION 5**

- 5.1 Effective fodder plan is crucial in livestock production.
- 5.1.1 State TWO categories of pasturage that can be used for livestock feeding. (2)
- 5.1.2 Compare *sweet veld* and *sour veld*. (2 × 2) (4)
- 5.1.3 Suggest any TWO crop remains that a farmer can use for hay-making. (2)
- 5.1.4 When lucerne is to be used for hay it needs to be left on the land to dry.  
List FOUR factors that play a major role when drying lucerne. (4)
- 5.1.5 Explain the importance of breeding and selection program in livestock production. (2)

- 5.2 A tractor is the main machinery in a farming business and most tractors are powered by the same kind of engine; a four stroke internal combustion diesel.
- 5.2.1 Distinguish the FOUR strokes of a diesel engine. (4)
- 5.2.2 Explain what happens in each stroke of the four-stroke diesel engine. (4)
- 5.2.3 Describe the correct procedure for cleaning the interior of the radiator (4)
- 5.2.4 Give FOUR reasons for controlling the height of a boom sprayer when applying chemical on your crops. (4)
- [30]**
- TOTAL SECTION B: 120**  
**GRAND TOTAL: 150**