

ANTONY JAMIL

KEVIN

Candidate's Examination No.....

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION AND VOCATIONAL TRAINING
FORM TWO SECONDARY EDUCATION EXAMINATION, 2012

0034

AGRICULTURAL SCIENCE

TIME: 2 HOURS

INSTRUCTIONS

1. This paper consists of sections A and B.
2. Answer **ALL** questions.
3. Read the instructions given under each section carefully.
4. **ALL** answers must be written in the spaces provided.
5. Write your examination number at the top right corner of every page.
6. **ALL** writing must be in black or blue ink.
7. Cellphones and calculators are not allowed in the examination room.

FOR EXAMINER'S USE ONLY		
QUESTION NUMBER	SCORE	INITIALS OF EXAMINER
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL		

This paper consists of 8 printed pages.

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SECTION A (30 MARKS)

1. Write **TRUE** for a correct statement or **FALSE** for a statement that is not correct.

- (i) An immediate care to a person who has been injured during farm operation when medical care is delayed is known as First Aid Kit.
.....**FALSE**.....
- (ii) Weeds are totally harmful to plant crops and farm animals.**TRUE**.....
- (iii) One advantage of the house and run poultry keeping system is that it does not need equipment for feeders and waterers.**TRUE**.....
- (iv) Land as a factor of production includes the soil, minerals, rivers, lakes, pests, vegetation and the climate of the place.**TRUE**.....
- (v) Forestry, Fishery and Book-keeping are branches of Agricultural Science.**FALSE**.....
- (vi) A fertile garden soil which is rich in organic matter possesses a low bulk density.**FALSE**.....
- (vii) In a farm workshop all machines with belts and gears should be fitted with guards in order to increase efficiency.
- (viii) Thinning is necessary for vegetables which are grown **in situ**.
.....
- (ix) The major disadvantage of keeping poultry under deep litter system is that birds may develop cannibalism and egg eating habits.
.....
- (x) Subsistence farmers tend to be reluctant to abandon their traditional farming practices for fear of risks and uncertainties.

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2. Match the items in set A with those in set B by writing the correct letter below the corresponding question number in the table provided.

SET A		SET B	
(i)	A soil component that sticks when wet and cracks when dry	A. Candling	
(ii)	Any alteration in properties of agricultural products by physical, chemical and biological means	B. Clay	
(iii)	Bedding materials which are spread on the poultry house to make birds comfortable	C. Competitive prices	
(iv)	Joining a scion to a root stock	D. Dehorning	
(v)	Occurs when demand and supply of agricultural products are balanced	E. Drying off	
(vi)	Prices which traders pay when they buy goods at the site of production	F. Equilibrium price	
(vii)	Removing side shoots in tomato plants	G. Farmgate price	
(viii)	The process of hitching implements in draught animals	H. Grafting	
(ix)	The process of determining the quality of eggs	I. Hardening off	
(x)	The process whereby shade on seedlings is removed and water supply reduced to accustom seedlings for the harsh field environment.	J. Harnessing	
		K. Incubating	
		L. Litter	
		M. Loam	
		N. Processing	
		O. Pruning	

ANSWERS

SET A	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
SET B										

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3. Write the letter of the correct answer in the box provided for each question.

- (i) When selecting a site for establishing a vegetable garden you consider:
- A. occurrence of pests and diseases
 - B. presence of vegetations
 - C. prevalence of thieves
 - D. reliability of water source.
- ☐
- (ii) A cropping system which enables a farmer to apply various cultural practices without much problems is:
- A. crop rotation
 - B. interplanting
 - C. monocropping
 - D. relay cropping.
- ☐
- (iii) The most important soil component to a farmer is:
- A. air
 - B. mineral particles
 - C. organic matter
 - D. water.
- ☐
- (iv) Perfectly inelastic demand occurs when goods under considerations have:
- A. a lot of close substitutes
 - B. a lot of importance
 - C. no close substitutes
 - D. no importance.
- ☐
- (v) When the Tanzanian government sells some of its crops stored in godowns it aims at:
- A. cleaning its godowns
 - B. decreasing supply
 - C. increasing price
 - D. increasing supply.
- ☐
- (vi) Chicken of local breeds grow slowly and are small in size but nowadays are becoming popular in towns. This is because:
- A. their meat is tender
 - B. they are cheap
 - C. they have excellent taste
 - D. they have no zoonotic diseases.
- ☐

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- (vii) Which of the following tractor engine parts make a rotary motion?
A. Crank shaft
B. Cylinders
C. Oil sump
D. Piston. ☐
- (viii) According to a system used by the International Society of Soil Science, soil particles are classified according to their:
A. diameters
B. porosities
C. structures
D. textures. ☐
- (ix) The recommended grazing system in areas with high population densities is:
A. continuous grazing
B. rotational grazing
C. tethering
D. zero grazing. ☐
- (x) The weakness of human beings as sources of farm power is:
A. may fall sick during farming seasons
B. they are naturally lazy and subject to social problems
C. they get tired and their ability to supply power is limited
D. they need food and their ability to supply power is unlimited. ☐

SECTION B (70 MARKS)

4. Name an instrument or tool which you can use in performing the following farm operations:-

- (a) Turning the soil, making ridges, weeding and uprooting stumps. Hand hoe
- (b) Levelling the soil, removing stones and weeds. Rakes
- (c) Turning and spreading manure. Fork
- (d) Digging shallow holes and transplanting seedlings. Spade
- (e) Trimming hedges. Pruning shears
- (f) Harvesting cereals and cutting grass. Harrow
- (g) Watering seedlings. Watering can
- (h) Sawing wood along the grain. Saw
- (i) Cutting and shaping cold metals. Chisel
- (j) Connecting pipes in straight line. Coupling

5. (a) Define the following terms:

(i) Soil *Is the thin upper layer of the earth cover*

(ii) Soil profile *Is the vertical section of the soil*
Soil Profile > Is the vertical section

(b) What is the function of organic matter in the soil?

.....
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.....
.....
.....

6. (a) Define the following terms as used in crop production:

(i) Plant population *Is the total number of plant per unit area*

(ii) Staking

(iii) Spacing

(b) A young entrepreneur established a 0.25 ha of a cabbage project around his/her homestead. The spacing used was 60 cm x 60 cm. If all plants survived, calculate the plant population in the garden.

7. (a) Briefly explain the meaning of the term "Crop pest".

Crop Pest - Is any animal which cause damage or harm to crop plant or pathogen, bacteria, fungi

.....
.....
.....

(b) Categorize four direct harmful effects of insect pests on crop plants.

- (i) Chewing
- (ii) Cutting
- (iii) Piercing
- (iv) Sucking Juice

(c) Mention five cultural methods used to control insect pests in the field.

- (i) Mechanical method Flooding
- (ii) Biological method Mulching
- (iii) Cultural method Crop rotation
- (iv) Integrated method Burning
- (v) Legislative method Weeding

8. (a) Define the term "Ration" as used in livestock husbandry:

Ration is the daily amount feed given to an animal every 24 hours for one day.

(b) A form two student wants to formulate 400 kg of poultry meal containing 14% crude protein. In the store there is maize bran containing 18% crude protein and sunflower seed cake containing 20% crude protein. By using the Pearson Square method, determine the amount of sunflower seed cake and maize bran he/she will use in preparing the ration.

8. (a) Define the term "supply".

(b) Mention nine factors that may cause a change in the supply of agricultural products in your area.

9. Mention five advantages of using animal power over tractor power in farm operations.

10. (a) Briefly explain what will happen to plant crops when the following practices are applied:

(i) Over watering of tomato seedlings in the nursery

⇒ Late blight

(ii) Irregular watering in tomato plants

⇒ Blossom end rot

(iii) Excessive application of farm yard manure in carrot plants

⇒ Formation of unwanted branches

(iv) Excessive application of nitrogenous fertilizers to the maize plants.

⇒ Vegetative growth.

(b) Arrange the soil separates: clay, coarse sand, fine sand and silt according to their increasing water holding capacity.