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Candidate's Examination No.....

ANTONIO CONTE CHELSEA HEAD CATCH  
THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION AND VOCATIONAL TRAINING  
FORM TWO SECONDARY EDUCATION EXAMINATION, 2009

0034

AGRICULTURAL SCIENCE

TIME: 2 HOURS

V.P.T.

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 for each question.
5. Write your examination number at the top right hand corner of every page.
6. **ALL** writing should 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		
<b>TOTAL</b>		

This paper consists of 10 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) Agricultural Science and Engineering Science are examples of Applied Sciences. ....T.....
- (ii) In subsistence production land and labour are major factors of production. ....T.....
- (iii) Observation, data collection, hypothesis formulation, experimentation and teaching are procedural methods used in the scientific process. ....T.....
- (iv) When properly used, First Aid can help the patient to recover from shock. ....T.....
- (v) Pipe fittings which are used to branch the main pipeline to other lines are known as elbows. ....F.....
- (vi) New castle disease in poultry is caused by bacteria. ....F.....
- (vii) Sand is a type of soil with good water holding ability. ....F.....
- (viii) Pomology is a science and art of growing fruits. ....T.....
- (ix) Subsistence farming ensures high productivity and surplus earnings for the farmers. ....F.....
- (x) Mulching is a practice of spreading a layer of dried grass on the ground around root zone. ....T.....



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2. In the table below, Set A is a list of various farm operations performed by tools listed in Set B. Use the letters in set B to match with the corresponding operations in Set A. Write the letter of the correct answer in the table below.

SET A	SET B
(i) all purpose digging tool.	A. Anvil
(ii) a special grain harvesting tool.	B. Ball pen hammer
(iii) checking eggs fertility.	C. Claw hammer
(iv) makes horizontal cuts in the soil during ploughing.	D. Candling torch
(v) used for cutting metals.	E. Files
(vi) driving and removing nails in woods.	F. G-clamp
(vii) making holes in metals or woods.	G. Hacksaw
(viii) smoothening metals.	H. Hand drill
(ix) supports a metal piece in forging.	I. Hand hoe
(x) holding and turning nuts onto bolts.	J. Lactometer
	K. Plane
	L. Reducing coupling
	M. Scriber
	N. Share
	O. Sickle
	P. Spade
	Q. Spanner
	R. Tenon saw
	S. Yoke harness

SET A	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
SET B	J	O	D	N	G	C	H		A	F

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

(i) The system of keeping animals inside the house, feeding and providing with water to them throughout their lifetime is known as:

- A. continuous grazing
- B. rotational grazing
- C. tethering
- D. zero grazing.

☐ A

(ii) The amount of feed given to a certain animal so as to fulfill the daily requirement is a:

- A. balanced ration
- B. complete ration
- C. production ration
- D. ration.

☐ B

(iii) All of the following are breeds of poultry EXCEPT:

- A. Black Australorp
- B. Large white
- C. Light Sussex
- D. Rhode Island Red.

☐ B

(iv) One of the problems associated with weeds in the farm of crops is:

- A. competes with crops in nutrients utilization
- B. increases organic matter in the soil
- C. preserves soil moisture
- D. some are used as food to man and to farm animals.

☐ A

(v) A practice where two or more crops are grown together in a field is called:

- A. intercropping
- B. mixed farming
- C. monoculture
- D. relay planting.

☐ A

(vi) A soil type which sticks when wet and cracks when dry is:

- A. alluvial soil
- B. clay soil
- C. colluvial soil
- D. sand soil.

☐ B



6. Mention ten classes of crops which are grown in Tanzania and give one example in each class:

- |                       |                           |
|-----------------------|---------------------------|
| (i) Fruit crop        | example Orange            |
| (ii) Cereal crop      | example Paddy             |
| (iii) Vegetable crop  | example Cabbage           |
| (iv) Ornamental crop  | example Groundnut, Flower |
| (v) Root crop         | example Potatoes          |
| (vi) Fibre crop       | example Sisal             |
| (vii) Locomotive crop | example Pear              |
| (viii) Oil crop       | example Simsim            |
| (ix) Forage crop      | example Cattle            |
| (x) Beverage crop     | example Cocoa             |

7. Suppose you are asked to prepare a dairy ration of 100 kg containing 20% protein. Livestock feeds which are available are maize bran containing 12% protein and groundnuts cake containing 32% protein.

- (ii) By using the Pearson's Square method show how you will compound the required ration.



- (ii) Calculate the amount of maize bran and groundnuts cake that will be required in formulating the dairy ration.

8. (a) Define the following terms as used in Farming Business Economics:

- (i) Price: 1/ the value of goods and services under a given market condition.
- (ii) Demand schedule: 1/ the list of goods or services that are brought at a certain price.
- (iii) Equilibrium price: 1/ the price that determines the quantity that a buyer may purchase and the quantity that seller may sell.
- (iv) Farm gate price: Are prices that farmer receives when they sell their products at their farm boundaries.
- (v) Elasticity of supply: 1/ the measure of quantity of good ~~changes~~ supplied during when the price of that commodity changes.

- (b) The price of one tray of eggs raised from Tsh.1000/= to 1500/= per tray as a result the supply of eggs fell from 20,000 to 15,000 trays per week. Calculate the elasticity of supply of eggs.

9. (a) What is horticulture?

little production of vegetable, fruit and flower

- (b) Outline nine factors you will take into consideration when selecting a site for establishing a vegetable garden.

- (i) Consider the characteristics of the soil.
- (ii) Consider the climate of the place
- (iii) Select area with reliable source of water
- (iv) Consider the transportation for vegetables
- (v) Consider market for vegetables
- (vi) .....
- (vii) .....
- (viii) .....
- (ix) .....



10. (a) Define the term "farm power" as used in Agricultural mechanization and land utilization.

It is the essential input in agriculture for timely field operation for increasing production and productivity of land.

- (b) List six sources of farm power.

- (i) Human power
- (ii) Animal power
- (iii) Wind power
- (iv) Electrical power
- (v) Solar power
- (vi) Mechanical power

- (c) Differentiate between primary and secondary tillage equipment.

Primary tillage is the initial major soil working operation designed to loosen the soil and remove crop residue. Soil aggregation is with secondary. Are subsequent land operation which follow after primary.