

**THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION**

034/1

AGRICULTURAL SCIENCE 1

Time: 3 Hours

Year: 2020

Instructions

1. This paper consists of sections A, B and C with a total of **eleven (11)** questions.
2. Answer **all** questions in sections A and B and **one (1)** question from section C.
3. Sections A and C carry **fifteen (15)** marks each and section B carries **seventy (70)** marks.
4. Cellular phones and any unauthorised materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

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SECTION A (15 Marks)
Answer **all** questions in this section.

1. For each of the items (i) - (x), choose the correct answer among the given alternatives and write its letter beside the item number in the answer booklet provided.
- (i) Which device will you use when transmitting power from the oxen to the ox-equipment?
A Beam B Skey C Harness
D Trap E U-bolt
- (ii) Which tractor engine part belongs to the reciprocating parts?
(1) Engine block
(2) Crank case
(3) Piston
(4) Connecting rods
(5) Fly wheel
A (1) and (2)
B (2) and (3)
C (3) and (5)
D (3) and (4)
E (4) and (5).
- (iii) Why should a system of shifting cultivation be discouraged?
A It is not possible to use oxen and tractor.
B It needs complicated knowledge on farming.
C There is high incidences of pest and diseases.
D It involves cleaning of land by cutting trees.
E It incurs very high cost in production.
- (iv) Which disease is characterized by greenish diarrhea from a chicken?
A New Castle disease B Fowl plague C Avian Leukosis
D Infectious coryza E Coccidiosis
- (v) An ideal soil which is composed of approximately 40% sand, 40% silt and 20% clay can be termed as
A loam. B sand. C silt.
D clay. E sand-silt.
- (vi) Which parasites can be controlled by drenching?
A Ticks and fleas B Tsetse flies and mites C Houseflies and lice
D Ringworm and ascaries E Tape worms and liver flukes

- (vii) Which method can be used to control Blossom End Rot in tomato plants?
- (1) Avoiding application of excessive quantity of nitrogenous fertilizers.
 - (2) Spraying tomato plants with mancozeb starting from seedlings emergence.
 - (3) Using resistant varieties or tolerant varieties.
 - (4) Regular watering of the plants.
 - (5) Using certified seeds and crop rotation.
- A (1) and (4)
 - B (2) and (5)
 - C (1) and (3)
 - D (3) and (4)
 - E (4) and (5).
- (viii) What is the name given to a market type in which a single seller controls the whole market?
- A Pure competition
 - B Oligopoly
 - C Monopoly
 - D Black market
 - E Monopsony
- (ix) Pollution can be reduced and controlled to make water or land safe by recycling. What other material can be recycled?
- A Fiber material like sisal bags
 - B Plastic materials like plastic bags, plastic bottles, plastic chairs and plastic baskets
 - C Cotton material like used piece of clothes
 - D Kitchen wastes
 - E Crop residues from the farm.
- (x) Carefully study the data given in the table and answer the questions that follows:

Price (Tsh)	Quantity Supplied (Kg)
100,000	100
200,000	100
300,000	100
400,000	100
500,000	100

- Which type of elastic supply curve can be drawn from the given supply schedule?
- A Perfectly elastic supply curve.
 - B Perfectly inelastic supply curve.
 - C Elastic supply curve.
 - D Inelastic supply curve.
 - E Unitary elastic supply curve.

2. Match the functions of surveying instruments in **List A** with the names of the instruments in **List B** by writing the letter of the correct response beside the item number in the answer booklet provided.

List A	List B
(i) An instrument used to mark temporary stations when surveying.	A. Plumb bob
(ii) An instrument used to align survey lines on the ground.	B. Odometer
(iii) An instrument used to indicate a vertical position of a point.	C. Arrow
(iv) An instrument used together with level to measure the vertical distances above the reference place.	D. Tripod level
(v) An instrument used to uphold levels.	E. Ranging pole
	F. Abney level
	G. Leveling staff

SECTION B (70 Marks)

Answer **all** questions in this section.

3. (a) When planning land to be used for various activities, land survey cannot be excluded. State five objectives of land survey. **(5 marks)**
- (b) Briefly explain the function of any five instruments used in chaining/taping. **(5 marks)**
4. (a) Briefly explain the behavior which will be shown by the chicks in the brooder house under the following temperature conditions:
- (i) Too hot
- (ii) Too cold
- (iii) Air droughts
- (iv) Right temperature **(4 marks)**
- (b) Why is it advantageous to keep poultry using free range system? Give six points. **(6 marks)**
5. (a) Describe five ways on how agricultural wastes and human activities contribute to water pollution. **(5 marks)**
- (b) What measures should be taken to overcome the problem described in (5) (a). **(5 marks)**
6. (a) (i) No one country is self-sufficient in producing all that it needs. Justify this statement. **(1 mark)**
- (ii) Why is trade across borders of a country important? Give three reasons. **(3 marks)**
- (b) Propose four measures that a country can take to correct deficit in the balance of payment. **(6 marks)**

7. (a) Account for any three agents of erosion. **(3 marks)**
- (b) Construction of terraces is among of the physical/structural control of soil erosion in sloping areas. Briefly explain seven types of terraces that can be constructed on sloping areas for erosion control. **(7 marks)**
8. A moist soil sample weighed 100 g. After oven dry the weight dropped to 90 g. Suppose the total volume of the soil sample is 80 cm^3 and the volume of pore space is 40 cm^3 , calculate:
- (a) the bulk density of the soil.
- (b) the particle density of the soil.
- (c) the porosity of the soil. **(10 marks)**
9. A farmer grew irish potato on his farm. Few weeks later a farmer noticed that the plants were not performing well, hence invited an extension officer for advice. During the visit an extension officer observed the following symptoms:
- Wilting of the vegetative parts;
 - Tuber of the infected plants producing white juice when cut and squeezed.
- (a) (i) What disease could be affecting the crop? **(1 mark)**
- (ii) How the disease spreads in the field? **(1 mark)**
- (b) Educate farmers on the possible ways of controlling the disease identified in (a) (i). Give four points. **(8 marks)**

SECTION C (15 Marks)

Answer **one (1)** question from this section.

10. Farmers experience the rise and fall of the prices of their produce. As an agricultural extension expert, explain three causes of price changes and advice five ways of protecting agricultural products from such changes. **(15 marks)**
11. A farmer keeping broilers experienced the habit of feather pecking from the birds. As a veterinary expert, advice on how to control such habit. Give six points. **(15 marks)**