THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL

FORM TWO SECONDARY EDUCATION EXAMINATION

0034 AGRICULTURAL SCIENCE

Time: 2 Hours **ANSWERS** **Monday, 20th November 2017.**

Instructions

1. This paper consists of Ten questions in section A and B.
2. Answer all questions.
3. All writings must be in **blue** or **black** ink.
4. Communication devices and any unauthorized materials are **not** allowed in the assessment room.
5. Write your **Examination Number** at the top right hand corner of every page.

1. (i) Coconut grows well in
A. Northern zone
B. Coastal zone
C. Southern zone
D. Central zone
Answer: B

(ii) Shields and goggles are protective gears used in
A. Forging
B. Welding
C. Soldering
D. Rivetting
Answer: B

(iii) Which one of the following is a soil conservation measure in crop production?
A. Monocropping
B. Cultivation along steep slope
C. Contour farming
D. Burning of vegetation
Answer: C

(iv) Good handling of livestock during feeding can be shown by
A. Allowing them to rest in shade
B. Exposing them in long day sunlight for temperature regulation
C. Forcing them to eat by beating
D. Exposing them in rain for cooling
Answer: A

(v) Which type of soil can be identified by being sticky when it is wet?
A. Sand
B. Silt
C. Loam
D. Clay
Answer: D

(vi) Which one is the function of mallet in a farm workshop?
A. Chopping wood
B. Smoothing wood
C. Striking nails
D. Driving in chisels
Answer: D

(vii) Change in supply of an agricultural good can be caused by
A. Change in production technology
B. Change in consumers' tastes
C. Change in price of the good
D. Change in population
Answer: A

(viii) The growing of vegetables is termed as
A. Horticulture
B. Floriculture
C. Olericulture
D. Viticulture
Answer: C

(ix) A newly hatched poultry until it begins to show definite sexual characteristics is known as
A. Hen
B. Chick
C. Pullet
D. Cockerel
Answer: B

(x) Price fluctuation that occurs within a year is considered to be
A. Long term
B. Cyclical
C. Seasonal
D. Short term
Answer: C

2. Match the items in List A with the responses in List B by writing the letter of the correct response below the corresponding item number in the table provided.

List A:
(i) A tool that scratch lines on metals.
(ii) A tool that marks location of holes in metals.
(iii) A tool that smoothen metals.
(iv) A tool that cut metals.
(v) A tool that make holes in metals.

List B:
A. Files
B. Hack saw
C. Try square
D. Scriber

E. Callipers
F. Centre punch
G. Cold chisel

Answers:
(i) D
(ii) F
(iii) A
(iv) B
(v) G

3. For each of the following statements, write TRUE if a statement is correct or FALSE if a statement is not correct.

(i) It is advised to hurry by running when working with sharp edged tools in the farm workshop. FALSE

(ii) Mixed cropping and intercropping differ in patterns of planting the crops. TRUE

(iii) Dipping kills parasites in animals. TRUE

(iv) The larger the soil particles, the lower the water holding capacity. TRUE

(v) Price is a measure of value of a good or service. TRUE

4. (a) Giving an example, briefly explain interdependence between agriculture and manufacturing industries.

Answer: Agriculture provides raw materials like cotton, sugarcane, and leather to manufacturing industries, while manufacturing industries supply agriculture with tools, machinery, fertilizers, and pesticides.

(b) Evaluate six importance of agricultural sector in Tanzania.
(i) Provides employment opportunities.
(ii) Acts as a source of food supply.
(iii) Generates foreign exchange through exportation of cash crops.
(iv) Provides raw materials for local industries.
(v) Contributes significantly to the Gross Domestic Product (GDP).
(vi) Supports rural development through infrastructure like roads.

5. (a) Explain the following metalwork processes:
(i) Forging
Answer: Forging is the process of shaping metal by heating it until it becomes soft and then hammering it into the desired shape.

(ii) Soldering
Answer: Soldering is the process of joining two or more metal pieces by melting and applying a filler metal with a lower melting point than the base materials.

(iii) Riveting
Answer: Riveting is a method of permanently joining two pieces of metal by using a rivet, which is deformed to hold the materials together.

(b) Give the use of each of the following in carpentry work.
(i) Pencil
Answer: A pencil is used to mark measurements and cutting lines on wood.
(ii) Ruler
Answer: A ruler is used to measure lengths and ensure straight and accurate lines in carpentry work.

6. (a) Differentiate between the following:
(i) Monocropping and monoculture.
Answer:
- Monocropping refers to the practice of growing one type of crop in the same area for multiple seasons.
- Monoculture refers to a large-scale agricultural system where only one type of crop is grown over a vast area.

(ii) Mixed cropping and mixed farming.
Answer:
- Mixed cropping involves planting two or more crops simultaneously on the same piece of land.
- Mixed farming involves integrating crop cultivation and livestock farming on the same farm.

(b) Examine six benefits of intercropping.
(i) Reduces the risk of total crop failure.
(ii) Improves soil fertility through nitrogen-fixing crops like legumes.
(iii) Enhances efficient utilization of soil nutrients.
(iv) Provides diverse crops for food security.
(v) Reduces pest and disease incidences due to crop diversity.
(vi) Maximizes the use of land and increases yields.

7. (a) Elaborate five important factors to consider when raising egg poultry.
(i) Proper housing to provide shelter and protection.
(ii) Adequate nutrition to meet the dietary needs of egg-laying birds.
(iii) Disease control measures such as vaccination and regular check-ups.
(iv) Lighting systems to regulate egg production cycles.
(v) Maintaining proper hygiene in the poultry house to prevent infections.

(b) Suggest five ways on how livestock production can be improved in Tanzania.
(i) Introduction of improved breeds for higher productivity.
(ii) Ensuring adequate feeding and access to quality fodder.
(iii) Providing proper veterinary services for disease prevention and treatment.
(iv) Establishing water sources for drinking and irrigation purposes.
(v) Training farmers on modern livestock management practices.

8. (a) What is a factor of production?
Answer: A factor of production refers to the resources used in the creation of goods and services, such as land, labor, capital, and entrepreneurship.

(b) Briefly describe the four factors of production.
(i) Land: Natural resources used in production, such as soil, water, and minerals.
(ii) Labor: Human effort, both physical and mental, involved in production.
(iii) Capital: Man-made tools and machinery used in production.
(iv) Entrepreneurship: The ability to organize resources and take risks to start and manage businesses.

(c) Name the reward for each factor of production.
(i) Land: Rent.
(ii) Labor: Wages.
(iii) Capital: Interest.
(iv) Entrepreneurship: Profit.

9. (a) Distinguish between physical and chemical weathering.
Answer:
- Physical weathering involves the mechanical breakdown of rocks without altering their chemical composition.
- Chemical weathering involves the decomposition of rocks due to chemical reactions, altering their composition.

(b) Identify four main agents of weathering.
(i) Water.
(ii) Wind.
(iii) Temperature changes.
(iv) Biological organisms.

(c) Briefly describe the five constituents of soil.
(i) Minerals: Inorganic particles derived from weathered rocks.
(ii) Organic matter: Decomposed plant and animal residues.
(iii) Water: Moisture necessary for plant growth and chemical reactions.
(iv) Air: Oxygen and nitrogen that support biological activity.
(v) Microorganisms: Tiny living organisms that help decompose organic matter.

10. Account for twelve principles to be followed by a farmer for successful crop production.
(i) Proper selection of crops suitable for the soil and climate.
(ii) Soil testing to determine nutrient content and pH level.
(iii) Timely land preparation for planting.
(iv) Use of quality seeds to ensure high germination rates.
(v) Application of fertilizers to replenish soil nutrients.
(vi) Efficient irrigation to ensure adequate water supply.
(vii) Timely weeding to reduce competition for nutrients.
(viii) Crop rotation to prevent soil depletion and control pests.
(ix) Pest and disease management using integrated pest management techniques.
(x) Proper harvesting to avoid post-harvest losses.
(xi) Storage facilities to maintain crop quality.
(xii) Market analysis to ensure profitability.