

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION AND VOCATIONAL TRAINING
FORM TWO SECONDARY EDUCATION EXAMINATION, 2011

0034

AGRICULTURAL SCIENCE

Time: 2 Hours

ANSWERS

Instructions

1. This paper consists of Ten questions in section A, B, C and D with total of eight question.
2. Answer all questions in section A, B and C and one question in section D.
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.

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1. The following statements are either correct or not correct. Write TRUE if the statement is correct and FALSE if the statement is not correct.

i. One of the advantages of Agricultural Science is that it does not need a laboratory for conducting experiments.

Answer: TRUE

ii. Herbicides are chemicals which are toxic to weeds.

Answer: TRUE

iii. Hybrid poultry birds which are bred purposely for meat production are called broilers.

Answer: TRUE

iv. The possession of rights to the use of land under specified conditions is called land reform.

Answer: TRUE

v. Once an accident occurs on the farm, the victims have to be given simulated medical assistance known as First Aid.

Answer: TRUE

vi. Soil pH, soil texture, soil structure, soil profile, and soil colloids are physical properties of soil.

Answer: FALSE

vii. Good housekeeping is not a necessary safety precaution in a farm workshop.

Answer: FALSE

viii. The major challenge facing horticultural producers and transporters is the perishable nature of the horticultural products.

Answer: TRUE

ix. Raising poultry in cages is good for poultry keepers living in highly populated areas.

Answer: TRUE

x. The possibility of getting no harvest from your farm in a given farming season can be controlled through crop diversification.

Answer: TRUE

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

i. Action of soaking after chicks hatch

ii. A farming system where only one crop is grown

- iii. An irrigation system of natural power
- iv. A new breed of pig
- v. A method of pegging
- vi. A common farm animal's feed
- vii. A livestock breed known for high milk production
- viii. A common non-leguminous green manure crop
- ix. Conditions necessary for germination
- x. Returns for land use

Set B

- A. Anaerobic bacteria
- B. Arable farming
- C. Capital
- D. Chick feeding
- E. Chaff cutter
- F. Clover
- G. Cross breeding
- H. High yielding exotic cows
- I. Lucerne
- J. Manure
- K. Monocropping
- L. Moisture
- M. Piglet
- N. Rain-fed system
- O. Sunning technology

Answers

i	ii	iii	iv	v	vi	vii	viii	ix	x
D	K	N	M	G	J	H	I	L	C

3. Write the letter of the correct answer in the box provided.

i. The recommended time to transplant tomato seedlings is:

- A. In the morning
- B. At the evening
- C. In the afternoon
- D. During the night

Answer: A. In the morning

Reason: Transplanting seedlings in the morning minimizes stress from heat and allows time for recovery before nightfall.

ii. The action of growing a different type of crop on the same piece of land on successive seasons is known as:

- A. Crop rotation
- B. Mixed farming
- C. Secondary farming
- D. Shifting cultivation

Answer: A. Crop rotation

Reason: Crop rotation involves planting different crops in successive seasons to maintain soil fertility and reduce pests.

iii. The best soils for gardening are those with:

- A. High bulk densities
- B. High pH levels
- C. High water-holding capacities
- D. Low water infiltration

Answer: C. High water-holding capacities

Reason: Soils with high water-holding capacities retain moisture for plant growth, essential for gardening.

iv. In Farming Business Economics, capital which can easily be converted to money is known as:

- A. Cash in hand
- B. Liquid capital
- C. Borrowed capital
- D. Working capital

Answer: B. Liquid capital

Reason: Liquid capital refers to assets that can be quickly converted into cash for immediate use.

v. In a country with mixed economy, the prices of goods and services are determined by:

- A. Market regulations
- B. Supply of demand power
- C. Supply, demand, and government regulations
- D. Demand power only

Answer: C. Supply, demand, and government regulations

Reason: In a mixed economy, the government and market forces work together to set prices.

vi. The period during which a certain farm animal was pregnant was found to be three months, three weeks, and three days. What type of animal is this?

- A. Pig
- B. Cow
- C. Rabbit
- D. Sheep

Answer: A. Pig

Reason: The gestation period of a pig is approximately three months, three weeks, and three days.

vii. The two main divisions of chicken breeds which are kept in Tanzania are:

- A. Heavy breeds and exotic breeds
- B. Exotic breeds and local breeds
- C. Light breeds and heavy breeds
- D. Pure breeds and fancy breeds

Answer: B. Exotic breeds and local breeds

Reason: Tanzanian farmers commonly raise exotic breeds for productivity and local breeds for adaptability.

viii. Which of the following tools is not a carpentry tool?

- A. Crowbar
- B. Hammer
- C. Mallet
- D. Saw

Answer: A. Crowbar

Reason: A crowbar is a general-purpose tool for prying, not a tool specifically for carpentry.

ix. Rough surfaces of wood can be smoothened by using one of the following tools:

- A. Rind
- B. Plane
- C. File
- D. Try-square

Answer: B. Plane

Reason: A plane is specifically designed to smoothen rough wood surfaces.

x. All of the following are sources of farm power except:

- A. Wind
- B. Solar
- C. Wood
- D. Water

Answer: C. Wood

Reason: Wood is a source of energy, not a direct source of mechanical or electrical farm power.

4. Fill in the gaps in the text below with terms from the box provided.

Box: grafting, floriculture, a nursery, a garden, orchard, vegetative propagation, hortus, culture, ipomoea, batatas, vegetables, generative propagation.

Horticulture is a term derived from two Latin words namely hortus and culture. A horticultural unit where vegetable crops only are grown is a garden. Horticultural crops are propagated through generative propagation and vegetative propagation. The art and science of growing flowers is floriculture, while olericulture is the art and science of growing vegetables. The action where a scion is connected to a rootstock to form a new plant is called grafting. A small area within the horticultural unit where seeds are sown and cared for is referred to as a nursery. A horticultural unit where fruit crops are grown is called an orchard.

5. Which poultry keeping system will you use under each of the following farm situations?

i. If you have a lot of capital.

Answer: Battery cage system

ii. If you have much less capital.

Answer: Deep litter system

iii. If you want to keep dual-purpose chicken.

Answer: Semi-intensive system

iv. If the area where you live has many predators and alligators.

Answer: Battery cage system

v. If you want to keep thousands of poultry birds.

Answer: Battery cage system

6. Briefly explain the economic importance of livestock in Tanzania. Use the following sub-headings:

i. Source of food to man.

Livestock provides essential food products such as meat, milk, and eggs, which are important for human nutrition.

ii. Source of farm power.

Animals such as oxen and donkeys are used as draft power for plowing, transportation, and other farming activities.

iii. Provision of employment for many people.

Livestock farming creates jobs in areas such as animal husbandry, veterinary services, meat processing, and feed production.

iv. Provision of industrial raw materials.

Livestock produces raw materials like hides, skins, wool, and bones that are used in industries to manufacture leather products, textiles, and fertilizers.

v. Social uses.

Livestock plays a role in cultural ceremonies, dowries, and as symbols of wealth and status in Tanzanian communities.

7. Without using mechanical, biological, or chemical methods of weed control, explain five other ways which can be used to control weeds in the farm.

i. Hand pulling: Manually removing weeds from the field.

ii. Mulching: Covering the soil with organic or synthetic materials to suppress weed growth.

- iii. Crop rotation: Alternating crops to disrupt weed growth cycles.
- iv. Flooding: Submerging fields with water to kill weeds.
- v. Burning: Using controlled fire to eliminate weeds and weed seeds.

8. Write common names for each of the following weeds:

i. *Cyperus rotundus*

Answer: Nutgrass

ii. *Bidens pilosa*

Answer: Black jack

iii. *Imperata cylindrica*

Answer: Speargrass

iv. *Digitaria scalarum*

Answer: Couch grass

v. *Cynodon dactylon*

Answer: Bermuda grass

9. Outline the function of each of the following pipe fittings as used in plumbing:

i. Coupling

Answer: Used to join two pipes of the same diameter in a straight line.

ii. Elbows

Answer: Used to change the direction of the pipe, usually at 90 or 45 degrees.

iii. Tees

Answer: Used to create a branch in the pipeline, allowing for the distribution of water or gas.

iv. Nipples

Answer: Short lengths of pipe used to connect two fittings or extend pipe runs.

v. Pipe valves

Answer: Used to regulate, control, or stop the flow of liquid or gas in a pipeline.

10. State five factors that may cause a change in demand for goat meat at Maalimibili market in Dodoma. A change in demand refers to a shift in the quantity of a good or service that consumers are willing and able to purchase at a given price, caused by various factors other than the price of the product itself. In the context of the Maalimibili market in Dodoma, the demand for goat meat can fluctuate due to several

economic, social, and cultural influences. These factors determine how much goat meat consumers desire and can afford at specific times.

Price of goat meat can significantly influence demand. If the price of goat meat rises, consumers may opt for cheaper alternatives, leading to a decline in demand. Conversely, a decrease in price can make goat meat more affordable, increasing its consumption at the market.

Consumer income is another critical factor. An increase in income allows consumers to purchase more protein-rich foods like goat meat, thereby boosting demand. On the other hand, a drop in income may compel consumers to choose more affordable sources of protein, reducing demand for goat meat.

The price of substitutes also plays a vital role. For example, if beef or chicken becomes cheaper compared to goat meat, consumers may switch to these alternatives, decreasing the demand for goat meat. Similarly, if substitutes become more expensive, goat meat may become a preferred choice.

Cultural and seasonal factors heavily influence goat meat demand. During festive periods, weddings, or religious celebrations, goat meat is often a traditional delicacy, leading to a spike in demand. These events drive short-term increases in market activity for goat meat.

Population growth around the Maalimibili market is another determining factor. As the local population increases, the demand for food, including goat meat, naturally rises. This is particularly evident in urbanizing areas where the market caters to a growing customer base.

These factors collectively shape the demand for goat meat at the Maalimibili market, reflecting how external influences impact consumer preferences and purchasing behavior.