

GRADE 10 AGRICULTURE

MID-TERM 2 EXAM 2026

MARKING SCHEME

SECTION A: (45 MARKS)

QUESTION 1 (2 MARKS)

- Agricultural land is land used for farming activities/crop and animal production.
- Accept: Land suitable/appropriate for crop production and rearing of livestock
- Accept: Land that is managed for agricultural purposes

QUESTION 2 (4 MARKS)

- Four ways of accessing agricultural land:
- Buying/purchasing
- Leasing/renting
- Inheriting/inheritance
- Donation/given freely by owner
- Accept also: Squatting, borrowing, leasehold, freehold

QUESTION 3 (5 MARKS)

- a) Land type B identification and significance (2 marks):
- Hilly/sloping land
- Significance: Good for certain crops, affects drainage, requires terrace farming

- b) Two challenges of using land type C/Marshy land (2 marks):
- Waterlogging/poor drainage
- Swampy conditions/wet most of the time

- Unsuitable for most crops
 - Disease prevalence (malaria)
 - Access difficulties
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- c) One method to improve marshy land (1 mark):
 - Install drainage systems/make drainage channels
 - Raise the land/make raised beds
 - Use swamp-tolerant crops like rice or lettuce

QUESTION 4 (6 MARKS)

- a) How altitude affects land productivity (2 marks):
- Higher altitude = lower temperatures = unsuitable for some crops
- Lower altitude = warmer = suitable for tropical crops
- Affects crop selection and growth rate
- Influences rainfall patterns

- b) How climate affects land productivity (2 marks):
- Rainfall determines water availability for crops
- Temperature affects growth rate and crop type selection
- Wind may cause damage and increase evaporation
- Sunshine hours affect photosynthesis

- c) How biotic factors affect productivity (2 marks):
- Pests destroy crops reducing yield
- Diseases reduce plant vigor and productivity
- Weeds compete with crops for nutrients and water
- Beneficial organisms improve soil fertility

QUESTION 5 (4 MARKS)

- Four soil properties affecting crop growth:
- Soil texture (sandy, loamy, clayey)
- Soil structure (arrangement of soil particles)
- Soil pH (acidity or alkalinity)
- Soil fertility (nutrient content)

- Water-holding capacity
- Organic matter content
- Soil depth

QUESTION 6 (6 MARKS)

- Three ways to improve soil productivity:
 - i) Add manure/compost: Increases organic matter and nutrients
 - ii) Practice crop rotation: Maintains soil fertility, prevents disease buildup
 - iii) Apply fertilizers: Replenishes lost nutrients
- Accept also: Avoid erosion, control weeds, practice agroforestry, reduce compaction

QUESTION 7 (3 MARKS)

- Three objectives of land preparation:
 - Break up soil to make it loose for root penetration
 - Incorporate manure and organic matter
 - Remove stones and weeds
 - Create favorable soil conditions for seed germination
 - Level the land to prevent waterlogging

QUESTION 8 (5 MARKS)

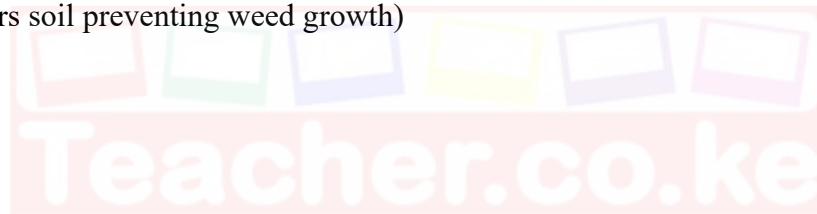
- a) What is crop rotation? (1 mark)
- Growing different crops in sequence in the same piece of land/field

- b) Two benefits of crop rotation (2 marks):
 - Improves soil fertility/maintains nutrient balance
 - Reduces pest and disease buildup
 - Breaks pest life cycles
 - Maintains soil structure

- Reduces need for chemical fertilizers
- c) Two crops to rotate with maize (2 marks):
 - Beans/legumes (nitrogen-fixing)
 - Kale/other vegetables
 - Squash/gourds
 - Cassava

QUESTION 9 (4 MARKS)

- a) Two methods of weed control shown (2 marks):
 - Manual weeding (hand pulling, hoeing)
 - Chemical control (herbicide spray)
 - Mulching (covers soil preventing weed growth)
 - Crop rotation



- b) How mulching helps in weed control (2 marks):
 - Mulch blocks sunlight preventing weed seed germination
 - Creates physical barrier between soil and air
 - Smothers existing weeds
 - Reduces need for manual weeding labor

QUESTION 10 (3 MARKS)

- Three reasons why field management practices are important:
 - Maintain soil fertility for high crop yields
 - Control pests and diseases protecting crops
 - Prevent soil erosion and degradation
 - Ensure sustainable agricultural production
 - Improve crop quality and marketability

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SECTION B: (30 MARKS)

QUESTION 11 (3 MARKS)

- a) Livestock breed:
- A group of animals with similar characteristics/traits passed from parents to offspring
- Accept: Animals with similar appearance and production qualities

- b) Animal production:
- The farming of animals/livestock for products like meat, milk, eggs, hides
- Accept: Rearing animals for economic benefit

QUESTION 12 (4 MARKS)

- a) One dairy cattle breed and characteristic (1 mark):
- Holstein-Friesian: High milk production
- Jersey: Rich milk (high butterfat)
- Sahiwal: Adapted to tropical conditions

- b) Advantage of indigenous breeds (1 mark):
- Adapted to local climate/environment
- Disease resistant
- Lower feed requirements
- Lower initial cost

- c) One poultry breed for eggs (1 mark):
- Kenya Landrace
- Leghorn
- Rhode Island Red

- d) Reason for keeping different breeds (1 mark):
- Different breeds suit different purposes (meat, eggs, milk)
- Different breeds have different adaptability to climate

QUESTION 13 (5 MARKS)

- Five safety measures when handling livestock:
- Use proper equipment (ropes, harnesses) for control
- Approach animals calmly and confidently
- Avoid sudden movements/loud noises that frighten animals
- Know animal behavior and temperament
- Have proper facilities (crush pens, loading ramps)
- Wear protective clothing where necessary
- Never stand directly behind animals
- Work with an assistant for dangerous animals

QUESTION 14 (4 MARKS)

- Four signs of disease in livestock:
- Loss of appetite/reduced feed intake
- Weight loss/poor body condition
- Fever/high body temperature
- Diarrhea/abnormal droppings
- Reduced milk production/laying
- Lethargy/lack of activity
- Nasal discharge/coughing
- Isolation from group/abnormal behavior

QUESTION 15 (3 MARKS)

- Vaccination:
- Introducing weak/inactive virus/bacteria to stimulate immune system
- Prevents specific diseases
- Given once or as boosters

- Drenching:
- Administering liquid medicine orally down the throat
- Controls internal parasites/worms

- Given more frequently than vaccination

QUESTION 16 (3 MARKS)

- Three advantages of beekeeping:
- Produces honey for sale (source of income)
- Produces beeswax for candles/polish
- Produces royal jelly and propolis (medicinal)
- Low capital investment required
- Requires minimal labor
- Improves pollination in neighboring crops
- No feed costs (bees are self-sufficient)

QUESTION 17 (4 MARKS)

- Four conditions for successful animal rearing:
- Adequate shelter/housing suited to animal type
- Good quality feed and clean water
- Disease prevention through vaccination and hygiene
- Proper breeding (good genetics)
- Skilled management/labor
- Good marketing facilities
- Veterinary services access

SECTION C:(25 MARKS)

QUESTION 18 (4 MARKS)

- a) Hoe:
 - A tool with a flat/blade-like head used for weeding and breaking soil
- b) Panga:
 - A curved cutting tool used for clearing vegetation and cutting branches
- c) Rake:
 - A tool with teeth used for leveling soil and gathering loose material
- d) Mattock:
 - A digging tool with a pick and adze, used for breaking hard ground

QUESTION 19 (3 MARKS)

- Three advantages of improved agricultural equipment:
 - Increases work efficiency/saves time and labor
 - Improves quality of work
 - Reduces physical strain on farmers
 - Increases productivity/yield
 - Reduces production costs per unit

QUESTION 20 (3 MARKS)

- Value addition definition:
 - The process of increasing the value of agricultural produce through processing or enhancement
 - Accept: Converting raw agricultural products into finished product

- Two examples of value-added products:
 - Maize → maize flour/cornmeal
 - Tomatoes → tomato sauce/paste
 - Milk → cheese/yogurt
 - Sugarcane → sugar/molasses
 - Coffee → roasted and ground coffee
 - Fruits → jams/juice

QUESTION 21 (6 MARKS)

- Three requirements for establishing agricultural enterprise:
- i) Capital/funding: Money to purchase inputs, equipment, and cover operational costs
- ii) Land/resources: Adequate land or facilities for the enterprise
- iii) Knowledge/skills: Technical knowledge of the enterprise and management skills
- Accept also: Market availability, labor, good location, government support

QUESTION 22 (4 MARKS)

- Four marketing channels for agricultural produce:
- Direct selling to consumers (farm gate)
- Local markets/farmers markets
- Wholesale traders/middlemen
- Supermarkets/retail shops
- Cooperatives/producer groups
- Exporting to other countries
- Processing industries

QUESTION 23 (2 MARKS)

- Two advantages of composting:
- Improves soil structure and water-holding capacity
- Adds organic matter and nutrients to soil
- Reduces need for commercial fertilizers (saves money)
- Recycling of farm waste
- Improves soil microorganism activity
- Environmentally friendly/sustainable

QUESTION 24 (3 MARKS)

- CALCULATION QUESTION - MAIZE PLANTING POPULATION
- Given: Land area = 2 hectares = $2 \times 10,000 \text{ m}^2 = 20,000 \text{ m}^2$

- Row spacing = 75 cm = 0.75 m
- Plant spacing = 30 cm = 0.3 m
- Solution:
- Area per plant = row spacing \times plant spacing = 0.75 m \times 0.3 m = 0.225 m²
- Number of plants = Total area \div Area per plant
- Number of plants = 20,000 m² \div 0.225 m² = 88,889 plants (approximately 88,900 plants)
- Marking guide:
- 1 mark: Correct conversion of hectares to m²
- 1 mark: Correct conversion of cm to m and calculation of area per plant
- 1 mark: Correct final answer with proper calculation

QUESTION 25 (5 MARKS)

- DIAGRAM QUESTION - SOIL PROFILE
- Mark allocation:
- 1 mark: Correct drawing of 5 soil horizons
- 1 mark: Correct labeling of all horizons (O, A, B, C, R)
- 1 mark: Correct naming of horizons (Organic matter, Topsoil, Subsoil, Parent material, Bedrock)
- 1 mark: Correct showing of depth/thickness differences
- 1 mark: Clear, neat presentation with appropriate shading/colors
- Marking guidance:
- Award marks for accuracy of representation
- Diagram must show soil horizons in correct order from top to bottom
- O-horizon should be thinnest, C and R horizons thicker
- Accept any clear representation that shows understanding
- Color shading is optional but helps clarity
- Acceptable diagram features:
- O-horizon: Dark brown color (organic matter)
- A-horizon: Brown/tan (topsoil with minerals and organics)
- B-horizon: Lighter color (mineral-rich subsoil)
- C-horizon: Lighter tan (weathered parent material)
- R-horizon: Gray/hard rock (bedrock)