MARKING SCHEME

TEACHER.CO.KE

OPENER TERM 1 EXAMS 2022

443/1

AGRICULTURE

PAPER 1

FORM 4

SECTION A (30 MARKS

Answer all question in this section in the space provided

1. Name **four** branches of agriculture. (2 marks)
   Crop production
   Livestock production
   Soil science
   Agriculture economic
   Agriculture engineering

2. Name **four** soil constituents. (2 marks)
   Mineral matter
   Organic matter
   Air
   Water
   Living organism

3. State **four** different methods of clearing land before primary cultivation. (2 marks)
   Tree felling
   Burning
   Slashing
   Use of chemicals

4. Name four type of pumps used to lift water from its source. (2 marks)
   Centrifugal / rotardynamic pumps
   Piston / reciprocating pumps
   Semi-rotary pumps
   Hydram pumps

5. What are the characteristic of fertile soil? (2 marks)
   Good depth

Proper drainage
Good water holding capacity
Adequate nutrient supply

6. State **four** factors of production. (2 marks)
   Land
   Capital
   Labour
   Management

7. Name **four** elements required by plants in large quantities. (2 marks)
   Carbon
   Hydrogen
   Oxygen
   Nitrogen
   Phosphorus
   Potassium
   Sulphur
   Calcium
   Magnesium.

8. Name **four** factors to consider when selecting a nursery site. (2 marks)
   Nearness to water source
   Type of soil
   Topography
   Previous cropping
   Security
   Well sheltered place

9. Give **four** characteristics of a good grain store. (2 marks)
   Rat or vermin proof
   Well ventilated
   Easy to load and off load
   Pest-free
   Leak proof
   Well-secured to minimize theft
   Cool conditions to prevent overheating that would crack the grains

10. Name **four** categories of vegetables (2 marks)
    Leaf vegetables
    Root vegetables
    Fruit vegetables
    Pod vegetables
    Stem vegetables

Bulb vegetables

11. Name **four** land reform programs. (2 marks)
    Land tenure reform.
    Land consolidation.
    Land adjudication and registration.
    Settlement and resettlement

12. State **four** type of soil erosion by water. (2 marks)
    Splash/raindrop erosion
    Sheet erosion
    Rill erosion
    Gully erosion

13. Give **four** methods weed control in a crop farm . (2 marks)
    Chemical weed control
    Mechanical weed control
    Cultural weed control
    Biological weed control
    Legislative weed control

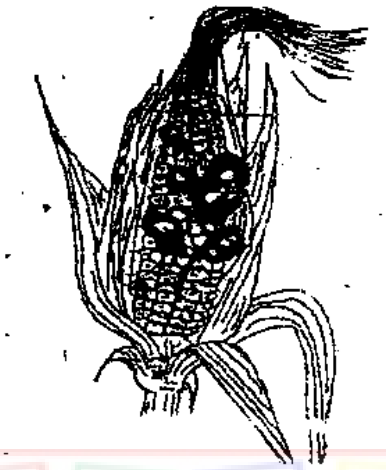
14. Name four factors affecting the efficiency of pesticides. (2 marks)
    Concentration of pesticides
    Timing of application
    Weather conditions at the time of application
    Persistence

15. Name **four** advantages of silage making. (2 marks)
    More nutrients are preserved
    It has few field losses
    It is less dependent on weather conditions
    It can be preserved for prolonged periods with minimum loss of nutrients
    Once ensiled there are no storage problems
    It can be fed directly without liquid additives

SECTION B (20 MARKS)

Answer all the questions in this section in the spaces provided

16. The diagram below illustrates a maize cob attacked by a disease. Study it carefully and answer the questions that follow.



a) Identify the disease. (1 mark)

Smuts /ear smut

b) Apart from maize give **four** other crops that may be attacked by the disease. (2 marks)

Sugarcane,

wheat,

sorghum,

barley,

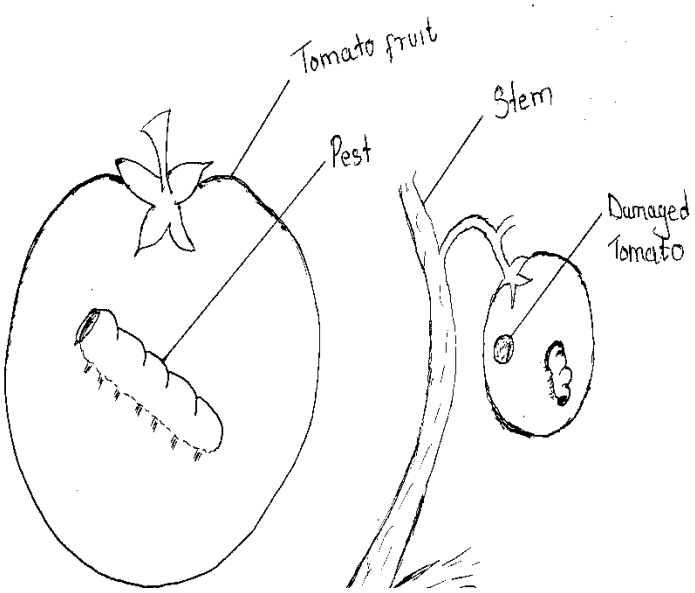
oat,

millet

c) State **four** methods of controlling the disease. (2 marks)

Plant certified seed
Crop rotation close season
Field hygiene/ destroy crop residues
Hot water
Rogueing
Use of resistant variety

17. The diagram below is an illustration a tomato crop pest . Study it and answer the question that follow.



a) Identify the pest. (1mark)

American ballworm (Heliothis amigera)

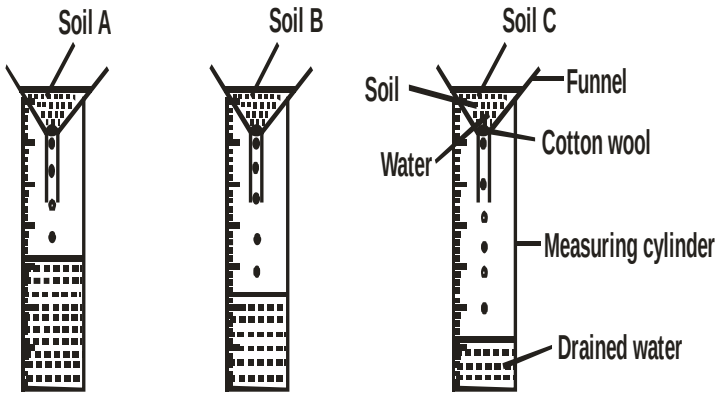
b) How can a farmer control the pest named in (a) above. (1 mark)

By spraying the tomato with insecticides.

c) Name other **three** minor tomato pest. (3 marks)

Cutworm
Red spider
Mite
nematode

18. The diagrams below show a set-up of an experiment to study an aspect of soil. Study it and answer the question that follow.



a) State the aim of the experiment. (1 mark)

To compare porosity/ drainage water holding capacity of different soil

b) If the volume of water illustrated in the measuring cylinder was observed after one hour identify the soil sample labelled A and B.

Soil sample A. (1 mark)

Sandy soil

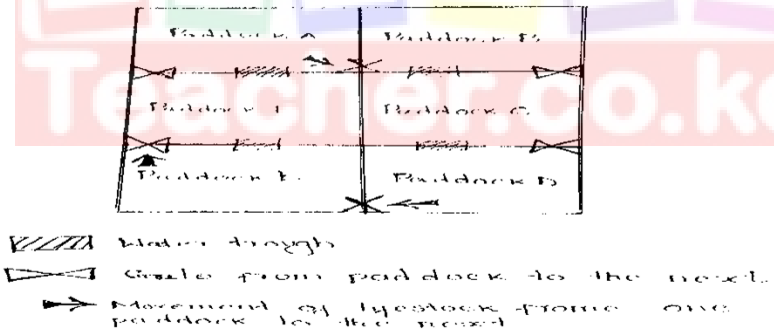
Soil sample B. (1 mark)

Loam soil

c) State **two** ways in which the soil structure of the sample labelled C above can be improved.(2 marks)

Adding organic matter/ manure
Liming
Sub soiling
Draining away excess water

19. The diagram below illustrates a grazing system. Study it carefully and answer the questions that follows.



a) Identify the grazing system illustrated above (1mark)

Paddocking/ rotational grazing

b) State **four** advantages of the grazing system illustrated above. (4 marks)

Reduce build up of parasite and diseases/prevent spread of parasite and diseases.
Allows pasture to regrow before being grazed again
Manure is evenly distributed
Excess pasture can be conserved
Allows management practices on ungrazed portions e.g reseeding, fertilizer application/weed control/ irrigation/pest and disease control/cutting back.
Ensure maximum utilization of pasture.

SECTION C (40MARKS)

Answer any two questions in this section in the spaces provided

20. (a) Describe the cultural methods used to control pest in the farm. (10mks)

Observing field hygiene
Destruction of alternate host
Planting resistance varieties of crops
Proper land preparation
Timely planting
Use of clean planting material
Practicing closed season
Crop rotation
Pruning
Proper spacing

(b) State and explain five biotic factors influencing agriculture. (10mks)

Pathogens – they cause diseases to livestock, crop causing death of both livestock and crops
Pest- reduces quality and quantity of agricultural products.
Pollinators – They aid in pollination thus contributing to the development of new varieties of crops.
Predator – Animals that prey on others, some help to control pests by feeding on them.
Nitrogen fixing bacteria – help in fixation of nitrogen in the soil.

21. a) Explain why settlement schemes were established in Kenya soon after independence. (10 marks)

To transfer land from European to Africans to enable the Africans to own land
To settle the landless by transferring landless/ squatters to new land allocation.
To make use of underutilized idle land so as to increase production
To create employment by working on the farm given to produce crops and keep livestock
To increase agricultural production through foreign market through exports which earned foreign exchange?
To ease population pressure on land by transferring people from over populated areas to scarcely populated areas

b) State the uses of farm records (10 marks)

- *They help to determine the value of the farm in terms of assets and liabilities*
- *They are used in income tax assessment*
- *They are used for reference/show history of the farm*
- *They help in planning and budgeting*
- *They help to determine the credit worthiness of a farmer*
- *They help to determine losses and detect theft on the farm*

- *They assist when sharing profits and losses in partnerships*
- *They help to settle disputes among heirs*
- *They help to support insurance claims*
- *They provide labour information like terminal benefits, NSSF remittances and SACCO dues*
- *They help in proper management of routine livestock and crop management practices*
- *They are used to compare the performance of different enterprises in the farm*

24 a) Explain the factors considered in choosing seed rates (8mks)

- *Number of seeds per hole- When 2 or more seeds are planted per hole, higher seed rate is required than when only one seed is planted per hole*
- *Spacing- At closer spacing, more seeds are used than at wider spacing*
- *Germination percentage – less seed id used when its germination percentage is higher. Seed of lower germination percentage is required in larger amounts.*
- *Seed purity – when planting seed which is pure or with a high germination percentage, less seed is required. More seeds are required wnen using impure /mixed seed.*
- *Purpose f the crop – crop for silage making is spaced more closely than one meant for grain production. This would require use of more seeds. Maize to be used for silage making requires more seeds than one for grain production*

c) Describe the production of cabbages under the following sub headings

i) Nursery establishment and management (6 marks)

- *Site cabbage nursery in an area where Brassica family crops have not grown for the last 3 years*
- *Prepare nursery bed to fine titlh.*
- *Remove all roots/ stones/ perennial weeds during preparation*
- *Make shallow drills 10cm apart and drill in seeds evenly and cover with soil*
- *Apply mulch and remove when seedlings emerge*
- *A thin shade is constructed over the nursery*
- *Water seedlings regularly when dry*
- *Harden off seedlings 2 weeks before transplanting*

ii) Transplanting (6marks)

- *Seedlings are ready for transplanting one month after sowing*
- *Healthy / vigorously growing seedlings are selected*
- *Lift seedlings with a lump of soil around the roots*
- *Water the nursery bed 48 hours before transplanting*
- *Plant seedlings at the same depth as they were in the nursery*
- *Firm soil at the base of each seedling*
- *Transplant early in the morning / late in the evening/ during a cloudy day*