AGRICULTURE FORM TWO

OPENER EXAM TERM 2 2023

MARKING SCHEME

TIME; 2HRS

INSTRUCTION

- **This paper has two section A and B**
- **Answer all questions in these sections in the spaces provided after the questions.**

SECTION A(70MKS)

1. **Reasons for organic farming**

- **Helps to balance features of fertile soul e.g. organic matter and soil micro organisms**
- **Use of local materials**
- **Lessens skills in preparation e.g. green manure**
- **Affordable and cost effective** **½ x2 = 1 mark**

2State main categories of parasites (1mk)

- **External/ecto parasites**
- **Internal/endo parasites**

3State four importance of water treatment. (2mks)

- **To kill disease causing micro-organisms**
- **To remove chemical impurities**
- **To remove smells and bad taste**
- **To remove sediments of solid particles**

4Mention 3 major sources of water on the farm. (11/2mks)

- **Surface**
- **Ground**
- **Rain**

5State four ways in which nitrogen is removed from the atmosphere (2mks)

- **Nitrogen fixation by lighting**
- **Nitrogen fixation by Nitrogen fixing bacteria**
- **Nitrification**
- **The herber-Bosch process**

6State the intermediate hosts of the following parasites. (2mks)

(i) Tapeworm(Taenia spp) **cattle or pigs**

(ii) Liver fluke **Fresh water snails**

7State 3 forms of soil water. (11/2mks)

- **Superfluous**
- **Capillary**

- **hygroscopic**

8State four vector-borne diseases affecting farm animals. (2mks)

- **East coast fever**
- **Redwater**
- **Anaplasmosis**
- **Heart water**
- **Trypanosomiasis**

9 State the plant part used for vegetative propagation in the following plants. (2mks)

i) Pyrethrum- **splits**

ii) Sisal – **Bulbils/suckers**

iii) Pineapples- **crowns, slips, suckers**

iv) Tea - **cuttings**

10 State four pests commonly found in tomatoes. (2mks)

- **American bollworm**
- **Cutworms**
- **Red spider mites**
- **Nematodes**

11 -High germination percentage / be viable

- **Be healthy / be free from diseases and pests**
- **Have high vigour**
- **Have no physical damage**
- **Be pure / no impurities / clean**
- **Be uniform in size / colour / shape**
- **Suitable to ecological conditions** **½ x 4 = 2**
- **Control sol born pests of diseases**

12- Consume soil / prevent soil erosion

- **Ensure maximum utilization of soil nutrients**
- **Help in weed control**
- **Improve soil structure**
- **Improve soil fertility**
- **Offer security incase of crop failure** **½ x 4**

13 State any four post-harvest practices in crop production. (2mks)

- **Threshing/shelling**
- **Dusting**
- **Packaging**
- **Sorting and grading**
- **Clearing**
- **Drying**
- **Processing**

14Differentiate between soil texture and soil structure (2mks)

Soil texture

Fineness or coarseness of soil

Soil structure

Physical appearance of soil according to the way individual soil particles are arranged

15State four factors influencing soil formation.
(2mks)

- **Parent material**
- **climate**
- **Topography**
- **Living organisms**
- **Time**

16 List four factors that influence the rate of respiration in an animal. (2ms)

- **Body size**
- **Amount of exercise done by the animal**
- **Degree of excitement**
- **Ambient/environmental temp**

17 State four factors that influence crop rotation
(2mks)

- **Soil structure**
- **Crop nutrient requirement**
- **Weed control**
- **Pest and disease control**
- **Soil fertility**
- **Crop root depth**
-

18 Give the term used to describe the following livestock. (4mks)

(i) Mature male cattle **bull**

(ii) Mature castrated male cattle- **Bullock**

(iii) A mature female pig after first parturition **sow**

(iv) Mature female bird- **Hen**

19 Differentiate between gapping and rogueing
(2mks)

Gapping- **replacement of dead seedlings in a field**

Rogueing- **uprooting and destroying infected plants in the field to prevent disease/pest spread**

20 State four characteristics of plants used as green manure. (2mks)

- **Fast growth rate**
- **Have high nitrogen content**
- **Fast decomposition**
- **Hardy**
- **Highly vegetative/leafy**

21 Differentiate between over-sowing and under-sowing. (2mks)

Over-sowing

- **Introduction of a pasture legume in an existing grass pasture.**

Under- sowing

- **Establishment of pasture under a cover crop**

22 State four factors that determine spacing in crop production (2mks)

- **Type of machinery to be used**
- **Soil fertility**
- **The size of the plant**
- **Moisture availability**
- **Use of the crop**
- **Pest and disease control**
- **Growth habit of the crop**

23 State four divisions of livestock farming. (2mks)

- **Pastoralism**
- **Fish farming/ aquaculture/pisci culture / pisci-culture**
- **Bee keeping/apiculture**
- **Poultry farming**

24 (a) State the two classes of phylum Arthropod a with most ecto- parasites (2mks)

- **Insect**
- **Arachnida**

(b) State four characteristics of an effective acaricide (2mks)

- have ability to kill ticks
- Be harmless to human and livestock
- Be stable
Effective even after fouling with dung/mud/hair

(c) Name two types of labour records. (2mks)

- **Muster roll**
- **Labour utilization analysis**

(d) Name two minor pests in tomato production (1mk)

- **Cutworms**
- **Nematodes**
- **Red spider mites**

25 State the causal organism of the following diseases. (2mks)

a) Mastitis- **bacteria**

b) Rinderpest- **virus**

c) Red water – **protozoan**

d)Foot and mouth - **virus**

26 a) State four methods of fertilizer application

- **placement method**
- **side dressing**
- **broadcasting**
- **foliar spraying**
- **drip**

b) Define the term agriculture. (1mk)

- Art and science of crop and livestock production.

d) State four factors that determine the type of irrigation (2mks)

- **Capital availability**
- **Topography**
- **Type of soil**
- **Type of crop**
- **Water availability**

e) Differentiate between seed dressing and seed inoculation (2mks)

Seed dressing- **Coating of seeds with fungicide/insecticide to prevent soil-borne pests and diseases.**

Seed inoculation- **coating legume seeds with an inoculant to promote nitrogen fixation**

27 A) Differentiate between mixed farming and agroforestry (2mks)

Mixed farming- **Growing of crops and rearing livestock on the same piece of land.**

Agroforestry- **Growing of trees crops and keeping livestock on same land**.

b) State four factors within the animal that may pre-dispose it to a disease. (2mks)

- The colour of the animal
- The species
- The sex
- The age
- The breed

c) State the lacking mineral in the following disorders. (2mks)

(i) Anaemia in piglets

Iron

(ii) Osteomalacia

phosphorus

(iii)Milk fever

Calcium

(iv)Swayback in lambs

copper

SECTION B (30MKS)

28 A farmer with one hectare of land requires 40kg of n in his farm. He applied CAN which costs shs 35 per kg. CAN contain 20kg N.

(a) Calculate the amount of C.A.N the farmer requires (2mks)

100kg CAN **20KG N**

? **40KG N**

$$= \frac{100 \times 40}{20} = 200KG \text{ CAN}$$

(b) How much will a farmer with one and a half hectares spend to apply in his farm? (1mk)

- **I hac requires 200kg CAN** **1kg=kshs 35**
- **1.5 hac requires ?** **300 x 35=10,500/-**

=1.5 x 200= 300kg CAN

(c) Name two types of compound fertilizers used by farmers. (2mks)

Di-Ammonium phosphate

Mono Ammonium phosphate

Nitrophos

29 Study the diagrams below of farm tools and equipment and answer the questions that follow.

a) Identify tools O and N (2mks)

O - Mason's trowel

N- Hard saw

b) State the function of tool P (1mk)

- **Measuring square ness and right**

c) State two maintenance practices of tool Q. (2mks)

- **Sharpening**
- **Lubricating**

- **Cleaning**

30 The diagram below shows a livestock parasite

a) Identify the above parasite. (1mk)
A tick

b) Name any two diseases transmitted by the parasite. (2mks)
EFC
Red water
Aneplasmosis
Heart water

c) State the four main stages in its life cycle. (2mks)
- **The egg**
- **The larva with six legs**
- **The nymph with eight legs**
- **Adult with eight legs**

31 Study the diagram below and answer the questions that follow.

a) What is the experiment set up above designed to study. (1mk)
Capillarity

b) Name the three types of soil. ($1^1/_2$mks)
A – Sand
B – Loam
C- clay

c) State 3 characteristics of soil A above. ($1^1/_2$mks)

- **Well drained**
- **Coarse textured**
- **Low water holding capacity**
- **Moderately fertile**
- **Low capillarity**
- **Slightly acidic**

d) State one method of improving soil C above. (1mk)
- **Drainage**

32)a) it is a process of taking small quantities of soil from the field to act as a representative sample of soil in that particular field

b)(i) - traverse methode

1 x3 = 3 mks

ii) -zigzag method

- (iii) dead furrows
    - Terrace stands
    - Old fences lines
    - Old manure heaps
    - Swampy areas
    - Near trees and boundaries
    - Between slops and bottom lands

1 x2 = 2 mks