OPENER EXAMINATION – TERM 2 2024

AGRICULTURE
FORM 4

Instructions: Answer all Question in A and B

1. Explain the following terms as used in Agriculture
   i.   Agricultural economics.   (½ mk)

This is minimizing the scare resource to realizes maximize profit realization

   ii.   Agricultural Engineering.   (½ mk)

   Is branch of agriculture that deals withj operation of machines and maintenance and also building/construction of farm structure.

2. State two methods that can be used to detect mineral deficiency in crops.   (1mk)

Soil sampling /sampling
Use of PH meter

3. State two conditions under which shifting cultivation is favorable .   (1mk)

Where land is owned communally
Where land is abundant

4. State two conditions under which seeds are seeded at high rate.   (2mks)

Where seed used is not pure
Where germination percentage is low

5. How do trees help in maintaining soil fertility.   (2mk)

It help in compacting the soil, reducing soil erosion
The leaves decomposes to increase soil fertility
Act as wind breakers that help in controlling soil erosion

6.
   i.   Explain the meaning of opportunity cost.   (1mk)

Opportunity cost Is the value of forgone good/alternative

   ii.   Outline condition at which opportunity cost is zero.   (2mks)

where goods are given for free
where there is no alternative
where good are scarce

7. Give three causes of hard pan in soil. (2mks)

Caused by cultivating at the same depth for long time.
Working on wet soil.
Using heavy machines after onset of rain.

8.
   i. Explain the meaning of additives as used in animal feeds. (1mk)
There are feed component added to feed to increase the palability of feed in animals.

   ii. What are the role of additive in making silage. (2mks)

Make feed more palatable
Increases the appetite in animals

9. Give four advantages of diversification in farming as a method of farming.(2mks)

Mixed farming help in utilization of small piece of land.
The farmer benefits from another enterprise if one fails.
There is mutual benefit among the two existing enterprise.

10. Give reasons why Agriculture is regarded as Science. (2mks)

Agriculture involve study of intomology
Breeding techniques/genetics
Farm machinery operations
Soil analysis
Control of pest and diseases.

11. Differentiate between Extensive farming system and intensive farming system.(2mks)

Extensive farming –this is a system whereby large tracts of lands are used with low investment while intensive farming is a system is system of farming that involve use of small pieces of land with high capital investment.

12. Why should top dressing be done on pasture. (2mks)
To increase the rate of regeneration of pasture
To increase the palatability of pasture

13. Give reasons for innoculating legume seeds before planting. (1mk)

Inoculation of seed made it to have nitrogen and also prevent attack from soil-borne diaseases.

14.

      i.   Outline the classification of pasture.   (1mk)

Pure stand pasture

Mixed stand pasture

      ii.   Name four practices carried out to improve and maintain permanent pasture .

                          (2mks)

Top dressing

Weeding

Removal of foreign crops

    15. Name four advantages of tissue culture procedure in plant species.   (2mks)

Give rise to pure crop free-from diseases

Increase the rate of maturity to crop

Facilitate production of many plantlets

Good characteristics can be develop from single plant

    16. Outline four mechanical method used in control of weeds.   (2mks)

        Mechanical weeding

        Hand uprooting of weeds

        Slashing

        Digging weeds out

SECTION B

    17. The diagram below shows a set of apparatus for finding the % of humus in the soil by heating.

    a. Label the apparatus.   (2mks)

    i.   **Desiccator**

   ii. **Burnt soil**

  iii. **Wire gauze**

  iv. **Tripod stand**

   v. **Bunsen burner**

    b. Explain the steps followed in carrying out the illustrated experiment.   (3mks)

Obtain fresh soil in the farm
Weigh the soil
Burn the soil
Record the weight after burning

18. Explain why it is difficult to control weeds that have rhizoid roots. (1mk)
The rhizoid root can remain viable even long period of dry conditions awaiting the start of rains.

19. Outline the practices that are used to train weak stem plants. (3mks)

Staking
Propping
Threlishing

20. Study the diagram below then annwer the question that follows.

   a. Identify the method of drainage above. (1mk)
   Cambered bed drainage system

   b. State other method used in draining a swampy area. (3mks)
French drain
Use of pipe
Planting of certain tree types

21. Study the process of chemical water treatment below and answer the question

   a. Identify the labeled parts   A   **Intake tank** (½ mk)

           B   **coagulation tank** (½ mk)
           C   **sedimentation tank** (½ mk)
           D   **Control tap** (½ mk)
   b. Mention two substances added at B and give the function. (2mks)

Alum and its function is to enable sedimentation of dirts

   c. Give three uses of water in crop production. (3mks)
Hydration of plant cells

Turgidity in plant
Act as a medium of metablic reaction in plant

d. Outline two source of water. (2mks)
Rain water source
Sub surface sources(borehole)
Surface sources(dam,rivers lake etc)

SECTION C(Select only two question)

22.
i. Explain what is planting. (½ mk)
Planting is placing the seed into the soil for the purpose of germinating and growing into a new plant.

ii. Outline the materials used in planting. (3mks)
Seeds
Vegetative materials
Stem cutting
Tubers

23.
i. Explain five factors that affects rooting of cutting. (10mks)
Temperature ×2
Relative humidity×2
Light intensity×2
Oxygen supply×2
Chemical treatment×2
Leaf area.Explain×2

ii. Outline and explain factor that must be considered when selecting planting materials. (10mks)

Suitability to the ecological conditions
Purity of the planting material germination percentage
Certified seeds×2 For any explanation

24.
i. Explain what is meant by the term seed dorminancy. (2mks)
Seed dormancy is period in which seed cannot germinate even if all the required conditions are made available.

ii. Outline four methods of breaking seed dorminancy and explain them briefly. (8mks)
Heat treatment method
Mechanical treatment method
Chemical treatment method
Soaking water
Scarification method explanations ×2

iii. Explain five factors that should be considered in choosing seed rate. (10mks)

The amount of nutrients in the soil
The germination percentage of seed
The purity of the seed

25.

i. Discuss production of guatemala (trypsacum laxum) under the following sub-topics.

    a. Ecological requirement. (2mks)

Guatemela requires high altitude areas but affected by extreme cold.
Ecology of altitude above 2000m above sea level/
Rainfall 900mm/year and should be well distributes

    b. Establishment and management. (6mks)

Preparation of land should be done early enough before on set of rains
Harrow the land to get medium tilth
Remove all perennial weeds
Planting stem cutting are used /splits seeds can also be used to establish
Plant them ½ meter apart within the row. planting should be done during inset of rains.
Apply fertilizer during plantation NPK 20:20:0 150kg/ha
Top dressing should be done using nitrogen
Weeding should be done to keep the land weed free

    c. Harvesting. (2mks)

The grass should be harvested early enough when the quality is still good.

ii. Discuss methods of sowing in pasture. (10mks)

    Direct sowing
    Undersowing
    Oversowing.Explanantion×2