END OF TERM EXAM

FORM FOUR MARKING SCHEME

AGRICULTURE
PAPER 1
TIME: 2 HOURS
SECTION A (30MKS)

1. List four practices carried out in ranching as an improved system of nomadic pastoralism (2mks)

Animals are reared in enclosed areas reducing movement from one place to another
Food and water are provided to the animals
Parasite and diseased control measures are carried out
Breeding practices are controlled
Soil and water conservation are carried out
Agriculture extension service are carried out easily
Pastures are improved to higher quality

2. State four ways by which government policy influences agriculture (2mks)

Government provide subsidy to local farmers on farm input reduce cost of production/ reduce taxation on input saving money for farmers
The government sets quality control laws to ensure local and foreign imported goods conform to international standard
Government imposed heavy taxation on imported agricultural goods making them more expensive then local goods protecting the local industry

3. Name four ways by which plants harness more light extensity (2mks)

Thinning
Pruning
Staking
Trellising
Propping
Removing shade

4. State four ways through which farmers reduce the effects of water shortage during crop production (2mks)

Irrigation to supplement available moisture
Mulching to conserve soil moisture/ prevent evaporation
Cover cropping to reduce water loss/ evaporation
Leaving land farrow to conserve moisture
Practice agro forestry providing shade to crops
Planting drought resistant crop
Timely planting to ensure maximum use of the little available rainfall
Planting early maturing crops during short rain

5. State four ways of improving a sandy soil for crop production **(2mks)**
Addition of organic manure to conserve water
Application to organic mulch to reduce corporation
Time to build soil fertilizer

6. State 4 effects of soil PH in crop production
Determine the availability of mineral nutrients/ promotes dissociation of mineral nutrients to absorbable form/ phosphorous is not available in acid soil
Provide optimum enzyme condition in crops determines crops grow in a place
Encourage discourage growth/ increase of soil pathogen / pests/ nematodes increase in alkaline soils
Increase microbial activities/rhizobium bacteria work best in neutral and slightly alkaline soils

7. Advantages of using farm yard manure instead of straight fertilizer.
- Supplies a variety of plant nutrients
- Has a longer residual effect
- Promotes microbial activities in the soil
- It is locally/ easily available
- Moderates the soil pH/ increases aeration exchange capacity
- Farm yard manure improves soil structure/ improves soil water holding capacity. (½ x 4=2mks)

8. Methods of reclaiming land
- Draining the land
- Controlling of soil erosion
- Irrigation
- Afforestation/ re- afforestation
- Control of tsetse flies (½ x 4= 2mks)

9. Benefits of land consolidation
-There is proper supervision of the farm
- Reduces costs on travelling
- Rotational program can be easily affected
- Mechanization is possible because the areas are large
-Easy to get extension services
- Allows good farm planning
- It enhances proper pests, diseases and weed control
- Encourages long term investments (½ x 4= 2mks)

10. Factors that determine spacing of maize crops.
- Soil moisture content
- Soil fertility
- Machinery to be used
- Intended use of the crop
- Prevalence of pests and diseases
- Cropping system used
- Number of seeds per hole. (½ x 4= 2mks)

11. Factors affecting quality of hay
- Stage at which the grass is cut/ harvested
-Efficiency in preparation / how well the grass is dried/ turned

- Methods of storage/ storage conditions
- Species/ type of forage crop/ nutritional composition of forage
- Length of drying period/ extent of drying
- Weather conditions during drying period (½ x 4= 2mks)

12. Factors affecting effectiveness of a pesticide

- Concentration of the pesticides
- Weather conditions during application
- Stage of development of the pesticide
- Rate of application of pesticide
- Mode of action of the pesticide. (½ x 4= 2mks)

13. Importance of agroforestry

- Remedy for deforestation/ source of firewood
- Source of income when timber/ fodder/ poles/ fruits are sold
- Aesthetic value/ beauty
- Labour saving
- Environment benefits/ control soil erosion/ improve water retention/ enrich soil through leaf litter and nitrogen fixation/ improve water catchment.

(½ x 4= 2mks)

14. Natural factors that influence soil erosion

- Amount of rainfall/ rainfall intensity
- Slope/ topography
- Type of soil
- Size of water shed/ catchment
- Length of the slope
- Vegetation cover
- Wind velocity/ strength of the wind
- Soil depth (½ x 4= 2mks)

15. Conditions observed when harvesting cotton

- Do not pick the lint when it is wet
- Pick on weekly basis
- Avoid dry twigs or leaves contaminating the cotton
- Do not use sisal bags to hold cotton as the sisal fibres may contaminate lint. (½ x 4= 2mks)

SECTION B 20 MKS

16. (a) The practice used to prepare the seed potato above for planting

Sprouting or chitting

(b) The procedure followed in preparing the seed potatoes for planting

(i) Dust the tubers using the appropriate insecticide to control pests
(ii) Arrange the tubers in a store with rose-end facing upwards
(iii) Tubers are arranged 2-3 layers deep
(iv) Allow diffuse light through the store
(v) Sprinkle some water on the tubers if the conditions are dry

17. (a) type of erosion

Rill erosion

(b) How the type of erosion shown above occur

The velocity of running water dislodges the soil particles and is carried to different location leaving small channels called rills

(c) How planting of grass help to control the type of erosion

The grass roots hold soil particles together making them firm
The grass reduces the velocity of the running water thus reducing the erosive power

18. (a) Method of irrigation illustrated above

Furrow/canal irrigation

(b) Advantages of using the above method of irrigation

(i) Reduces fungal attack to crops
(ii) It is cheap compared to sprinkler irrigation

(c) Two maintenance practices carried out on the above method of irrigation

(i) Remove the weeds from the canals/furrows
(ii) Repair damaged furrow banks
(iii) Remove silt from the furrows/canals

19. (a) Identity the practice

Coppicing

(b) Other methods used in harvesting agroforestry trees

Pollarding
Lopping
Felling trees

(c) Sites where agroforestry trees are planted

Along the boundaries
Homestead
Along river banks

SECTION C 40 MARKS

20. a) Outline seven roles of a good farm manager (7mks)

- Making quick decision/short- term planning when crops/livestock are diseased
- Making decision linked to the future/Long term planning and operations on the farm eg constructing stores
- Gathering of information related to the enterprise eg price threads, markets, varieties of crops
- Comparing the standards of one's enterprise with the set standards
- Detecting weaknesses and constraints in farming and finding means of overcoming them
- Keeping up to date farm records and using them in the day to day the running of the farm
- . Implementing farm decisions and taking responsibility.

b) Explain problems encountered in the marketing of cabbages. (9mks)

•Seasonality; its production is seasonal and it is only available in plenty at harvest periods.
.Perishable; they are highly perishable and deteriorate in quality rapidly.
•Bulkiness; Cabbages are highly bulky, occupy a large space and have low value per unit weight compared to non-agricultural commodities. This creates storage and transportation problems.
•Poor transportation system. Where cabbages are grown, the roads are poor or encounter inadequate means of transport. This makes the farmer not to take the produce to the market and therefore, get spoilt before reaching the market.
•Storage
• Change in market demand
• Lack of market information
• Change in supply
• Limited elasticity of demand
• Increased in quantity of supplied does not necessarily result in an increase in food consumed.

c) Explain four factors that make weeds propagate successfully. (4mks)

•They have the ability to produce large quantities of seeds
•They can remain viable in the soil for a long time waiting for conducive germination conditions
•Most weeds are easily and successfully dispersed by wind or animals
•Some weeds have the ability to propagate vegetatively e.g. couch grass.

21. a) agricultural practices that pollute water

Watering livestock in water bodies
Faming/ cultivating near the river bank
Washing tool/ equipment near water bodies
Overgrazing/ over stocking

b) Factors that determine a crop rotation programme in crop production

1. Crop nutrient requirement-Heavy/gross feeders should come early in the rotation program.
2. Pest and disease control-Crops of the same families should not follow each other in the rotation program because they are affected by the same pests and diseases.
3. Soil fertility- Legumes should be included in the rotation program to fix atmospheric nitrogen hence improve fertility.
Crop root depth- Deep rooted crops should be rotated with shallow rooted crops (to ensure maximum utilization of nutrients).

5. Weed control- Cover crops should be included in the rotation program to smother weeds. Crops with associated weeds should not follow each other in the program.

6. Soil structure- Grass ley should be included in the rotation program to hold soil particles together hence improving soil structure.

c) Advantages of overhead irrigation

Water is every distributed / atomised into five droplets
Less water is wasted compared to furrow/ basin irrigation
It can be practiced on sloppy ground
Foliar fertilizers can be applied together with irrigation water thus reducing the cost of labour
Sprinkler systems can easily be moved from one place to another

b) Disadvantages of communal land tenure

No individual has responsibility of taking care of the land/ development on the land
Poor yields are obtained as land is higher exhausted
Poor pest, parasite and pathogen control as animals are herded together
Soil erosion and denudation take place /no soil and water conservation measure

22.a)i) **-Land preparation**

-Prepare the land before the onset of the rain.
-Clear to remove any vegetation present
-Plough the land deeply/ carry out primary cultivation to get rid of perennial weeds
-Harrow the land to a medium tilth. (4×1=4mks)

ii) **-Planting**

-Plant at the onset of rains
-Plant at a depth of 2.5-10cm deep
-Plant at a spacing of 23-30 ×75-90cm
-Plant one or two seeds per planting holes
-Planting can be done manually or mechanically
-Apply DSP at 100-150kg/ hectare during planting
-Plant healthy and certified seeds (4×1=4mks)

22. b) Sphysical methods used in pest control (6mks)

.Use of lethal temperatures -use of extreme temperature to control pests
.Use of physical barriers-use of materials that prevent pests from getting to the crops eg metal plates
.Proper drying of produce-drying makes crops too hard for pests to penetrate and discourage the growth of moulds
. Flooding-Army worms and cutworms will drown if flooded; also controls underground pests - moles
. Suffocation-use of carbon (IV) oxide to suffocate pests
. Physical destruction-Done through hand picking;
. Trapping pests followed by killing them
Use of scare crows-use of structures in the field to frighten birds and large animals
.Use of electromagnetic radiation-Use of radio waves to deactivate enzymes in some pests thus killing them.

(6×1=6mks)

c) **post harvesting practices that should be carried out on cereals crop before storage**

-Drying – cereals should be dried to a moisture content of 12-12% to reduce attack by pest and growth of fungal

-Threshing/ shelling – separating grains from the cobs, heads and pods

-Cleaning/ winnowing – removing foreign materials

-Sorting and grading – selecting and classifying cereals into different grade, damage grains should be removed

-Dusting – application of chemical powders on grains to prevent attack by storage pest and diseases

-Packing – involves putting grains into sacks/ containers for storing and easy transportation

-packaging – involves putting process cereals in to small containers to enhance easy handling (6×1=6mks)