AGRICULTURE PP1 MS

SECTION A 30 MARKS

ANSWER ALL QUESTIONS IN THE SPACES PROVIDED

1. State four biotic factors that affect agriculture positively (2marks)

- ✓ Decomposers
- ✓ Pollinators
- ✓ Nitrogen fixing bacteria
- ✓ Some predators

2. Name four methods of harvesting field crops (2marks)

- ✓ Picking
- ✓ Plucking
- ✓ Lifting
- ✓ Stoking
- ✓ Dehersking
- ✓ Unearthing

3.(a) Differentiate between thinning and rogueing (1mark)

- ✓ Thinning is the removal of excess plants of seedlings from planting hole to reduce competition of water, nutrients and space
- ✓ Rogueing is the removal and destruction of plants that have been attacked by pests and diseases to minimize their spread to healthy crops

(b) State four ways in which cover crops help in soil and water conservation (2marks)

- ✓ They reduce the speed of the surface run off
- ✓ They trap soil in the surface run off
- ✓ They reduce the rate of evapotranspiration of water from the soil
- ✓ They reduce percolation of water into the soil.

4. State four factors a farmer should consider when purchasing a pipe for water conveyance in the farm (2marks)

- ✓ Durability of the pipes
- ✓ Size of the pipes
- ✓ Thickness of the pipes
- ✓ Amount of water being conveyed
- ✓ Colour of the pipes

5. State four importance of selecting planting materials for food production (2marks)

- ✓ To ensure uniformity of establishment is achieved in the field
- ✓ To achieve vigorous growth

- ✓ To achieve the expected plant population per given area of the land
- ✓ To reduce disease incidence in the field as planting materials are clean

6. Name the branch of agriculture which deals with;

a) Growing of crops in a cultivated land (1mark)

- ✓ Arable Farming

(b) Allocation of scarce resource for Agricultural Production (1mark)

- ✓ Agricultural Economics

7. State four limitations of using organic manure in the farm. (2marks)

- ✓ Can easily lose nutrients if not properly stored
- ✓ Can introduce pests or weeds seeds in the farm
- ✓ Laborious to prepare
- ✓ Bulky to apply

8. Give four reasons for keeping health records in the farm (2marks)

- ✓ Enables selection of animals to be culled
- ✓ Enables tracing of the history of a disease for effective treatment
- ✓ Facilitate selection of livestock for the purposes of breeding
- ✓ Can show the most prevalent disease in an area
- ✓ Shows the health condition of an animal

9. State four objectives of the million-acre scheme (2marks)

- ✓ Solve unemployment problems
- ✓ To increase Agricultural production
- ✓ To transfer lands from white settlers to Africans
- ✓ To reduce population pressure in an area
- ✓ To settle former employees of European farmers and squatters

10. Give one use of each of the two types of labour records kept by the farmer (2marks)

Type of Labour Record	Use
Muster roll	Show names of individual workers, days worked and amount of money paid
Analysis on the use of labour	Shows the man-days, names of workers and payment involved

11. Give four reasons why phosphatic fertilizers are applied during planting time (2marks)

- ✓ Less soluble in soil water
- ✓ Promote root development
- ✓ Have a slight scorching effect
- ✓ Have a long residual effect

- ✓ Not easily leached

12. Give four reasons why farmers should plant trees in the farm (2marks)

- ✓ Trees are a source of wood fuel
- ✓ Trees can be sold to earn income
- ✓ Leguminous trees fix nitrogen in the soil
- ✓ Trees help in the soil and water conservation
- ✓ Some trees are a source of raw materials for paper industry
- ✓ Trees are a source of fencing poles and timber

13. Distinguish between flood irrigation and basin irrigation (1mark)

- ✓ Flood irrigation is allowing water to flow over the save of the land
- ✓ Basin irrigation water is enclosed in a depression

14. Name four types of legumes grown in medium attitude areas as forage crops (2marks)

- ✓ Silver leaf desmodium
- ✓ Green leaf desmodium
- ✓ Lucerne
- ✓ Siratro

15. Give four reasons for carrying out secondary cultivation in a seed bed (2marks)

- ✓ Remove weeds that might have come up after primary tillage
- ✓ Reduction of soil clods to an appropriate tilth
- ✓ Mix organic matter with the soil
- ✓ Level the land in order to have uniform planting depth

SECTION B (20 MARKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED

16. An agriculture student was advised to apply a complete fertilizer 40:30:10 in a plot of land measuring 20m by 10m at a rate of 400kg per hectare.

(a) Calculate the amount of P_2O_5 in the complete fertilizer. (2marks)

Total ratio = 40+30+10= 80

30 ✖ 100 = 3000/80 = 37.5%

(b) Calculate the amount of fertilizer the student would require for plot (3marks)

1 ha = 10,000 m^2

Area of plot = 20m×10m = 200m^2

10000 m2 requires 400kg of fertilizer

1m2 will require 400÷10000m2

200m2 will require 400×200÷10000 = 8 Kg

The plot therefore requires 8kg of complete fertilizer

17. The diagram below shows a method of budding

DIAGRAM

(a) Identify the method of budding (1marks)

- ✓ T-budding

(b) Name two methods of budding apart from the one illustrated above (2marks)

Patch budding

- ✓ Top budding

(c) Give two reasons why farmer May prefer using the budding method illustrated above (2marks)

18. The diagram below shows a field crop affected by certain pests

DIAGRAM

(a) Identify the pest (1mark)

- ✓ Maize stalk borer

(b) Name two cultural methods for controlling the pest (2marks)

- ✓ Planting clean planting materials
- ✓ Rogueing the affected plants

(c) Name two other pests that attacks crop in the field

- ✓ Maize weevil
- ✓ Aphids

19. A farmer has four plots of land. Each plot has an agronomic problem as shown below

P1 Infested with bacterial wilt Maize	P2 Deficient with nitrogen Ground nuts
P3 Infested with grass (*Striga spp*) Tomatoes	P4 Prone to soil erosion Rhode Grass

(a) A farmer intended to grow maize, tomatoes, ground nuts and Rhodes grass. Design a rotation programme for the first year of the crop rotation system (2marks)

(b) Account for the reason of the crop selected in (a) above for plots P1, P3 and P4 (3marks)

- ✓ P1 maize crops are not affected by bacterial wilt disease
- ✓ P3 tomatoes are not infested with striga weed
- ✓ P4 Rhode grass hold the soil together controlling soil erosion

SECTION C (40 MARKS)

ANSWER ONLY TWO QUESTIONS FROM THIS SECTION IN THE SPACES PROVIDED AFTER QUESTION 22

20. (a) Describe the production under the following sub headings

(i) Variety (2marks)

- ✓ Dry beans varieties (accept specific varieties)
- ✓ Green beans varieties (accept specific varieties)

(ii) Field Practices (5marks)

- ✓ Weeding using pre-emergence herbicides
- ✓ Weeds controlled through cultivation
- ✓ Weeding should be avoided at flowering stage to avoid knocking down flowers
- ✓ Propping: Supporting climbing beans plant with sticks
- ✓ Pest control: using appropriate chemical to control pests such as American boll-worm
- ✓ Irrigation: done to supplement rainfall especially for green leaves varieties
- ✓ Disease control: Disease such as anthracnose controlled by spraying with appropriate fungicide

(b) Explain any six physical methods of pest control (6marks)

- ✓ Flooding: some pests such as moles are suffocated through flooding
- ✓ Use of lethal temperature i.e. extremely high or low temperature to kill the pest
- ✓ Suffocation: commonly used in grain stores where bait trap are used
- ✓ Creation of physical barriers: such as rat bafflers, and use of sticky materials on the tree trunk
- ✓ Proper drying: this makes the cereal grains too hard to be destroyed by pests
- ✓ Use of scaring devices: especially in rice plantation to control birds
- ✓ Use of explosives: thrown at the breeding places pests to kill them or scare them away

(c) Give seven ways in which plants morphology and anatomy affect selectivity and effectiveness of herbicides. (7marks)

- ✓ Leaf angle or leaf inclination
- ✓ Nature of the leaf surface; presence or absence of the cuticle
- ✓ Presence or absence of underground structures
- ✓ Crop differential height

- ✓ Location of the growing points
- ✓ Nature of the rooting system
- ✓ Size of the leaf lamina; broad leaved or narrow leaved

21. (a) Explain six cultural methods of disease control in crop production

- ✓ Proper pruning in order to destroy micro environment of crop disease
- ✓ Use of disease free planting materials/certified planting materials
- ✓ Proper spacing to control diseases such as rosette disease in groundnuts and damping off in cabbage
- ✓ Use of disease resistant crop varieties
- ✓ Crop rotation to interfere with life cycle of pests which acts as vectors
- ✓ Heat treatment to control ratoon stunning disease
- ✓ Field hygiene by rogueing and burning of plant remains
- ✓ Proper seedbed preparation to expose soil borne pathogens to sun which kills them as well as their predators
- ✓ Proper drying of cereals to prevent growth of fungus that produce aflatoxin
- ✓ Timely planting

(c) State four treatments that can be used to improve the quality of pasture of grazing land (4marks)

- ✓ Weeding
- ✓ Pest and disease control
- ✓ Pest and disease control
- ✓ Topping
- ✓ Application of both organic and inorganic manure
- ✓ Harvesting at the right stage of growth
- ✓ Watering during dry periods

(d) Give four reasons a farmer should carry out earthing up in crop production (4marks)

- ✓ To promote expansion of tubers
- ✓ To promote production of seeds in groundnuts
- ✓ To provide support in maize to prevent lodging
- ✓ Improve drainage around the plant tobacco
- ✓ Enables easy harvesting of tubers

Describe the harvesting of pyrethrum under the following sub-headings

(i) Harvesting procedure (3marks)

- ✓ Harvesting is done by picking
- ✓ Only flowers whose 2-3 disc florets have opened and petal have taken a horizontal position are picked
- ✓ Picking is done at intervals of 14-21 days
- ✓ Picking of flowers is done through twisting

(ii) Precaution taken during harvesting (3marks)

- ✓ Avoid compacting the flowers after picking
- ✓ Use woven basket
- ✓ Wet flower should not picked
- ✓ Avoid harvesting flowers with twigs

22. Describe five ways in which each of the following affects agriculture

(i) High level of education and technology (5marks)

- ✓ Enable a farmer to make rational production decisions
- ✓ Enable the farmer to do appropriate timing of agricultural production activities
- ✓ Educated farmers can easily access and adopt newly developed technologies through agricultural extension officers
- ✓ Right types and amounts of inputs are applied
- ✓ Inputs are applied at the appropriate places and targets
- ✓ Enhances good interpersonal relationships between the farm manager and his junior

(ii) Poor health (5 marks)

- ✓ Increased cost of living to the patients and their relatives
- ✓ Money used to control diseases and treatment of patients can be used in productive agricultural projects
- ✓ Scarcity of farm labours making the available labour very expensive
- ✓ Affected people lose hope living hence reduced motivation to invest in farming with reduced production
- ✓ Reduced production which has led to low food hence poverty that has increased criminal activities

(b) Outline five physical methods of soil and water conservation (5 marks)

- ✓ Use of diversion , use of bunds; heap of soil built along the contours
- ✓ Use of stonelines; stones are lined along the contours to reduce the speed of run off
- ✓ Use of trashline ; cut vegetative materials are lined along the contour to trap eroded soil.
- ✓ Ditch/ cut off-drains; constructed in steep slope in such a way that it slopes down gently and has an embankment of heaped soil on the lower side. This ensures that the water flows slowly and is directed to a water run way
- ✓ Terraces; physical barrier constructed along the contour to intercept the water as it flows down the slope
- ✓ Gabion/ porous dams/ check dams; consist of galvanized wire mesh forming boxes which are filled with stones and built across the gullies

(c) State five advantages of using seeds as planting materials in the farm (5 marks)

- ✓ Planting can easily be mechanized
- ✓ Require less labour since they are less bulky
- ✓ Seeds are easily available making them cheap planting materials
- ✓ Seeds can easily be mixed with fertilizer during planting
- ✓ Seeds can easily be mixed with treated against soil borne pests and diseases

- ✓ It is possible to develop new crops variety through cross pollination
- ✓ Seed can be kept for long time awaiting for better conditions without losing their viability
- ✓ Seeds are easy to handle hence less time used during planting