

## SECTION A

1. - Field crops cultivation – Horticulture

2. - Pests - predators - Parasites - pollinators - Decomposers - nitrogen fixing bacteria - Pathogens  
 $\frac{1}{2} \times 4 = 2\text{mks}$

3. - To give vegetation enough time to dry up and decompose into organic matter. - Allows carbon dioxide and other gases to diffuse out of the soil while being replaced with oxygen which is important for seed germination. - Give enough time to other subsequent operations to be done. - Give way to early planting.

4. - To break hard pan - To improve water infiltration. - For proper aeration. - To bring leached nutrients to soil surface.  $\frac{1}{2} \times 4 = 2\text{mks}$

5. - irrigation - tsetse fly control - drainage - terraces

6. - dry areas - during dry periods - in the growing of paddy rice

7. (a) onions – bulbs  $\frac{1}{2}$  mk (b) carrots – roots  $\frac{1}{2}$  mk (c) coffee – berries  $1/2\text{mk}$

8. - Oval high keeping quality. - High keeping quality.  $1\text{mk}$

9. - Legislative method/quarantine - Physical measures - Cultural methods - Biological pest control - Chemical pest control.  $2\text{mks}$

10. - Prices go up - Diamond is high  $1\text{mk}$

11. - Fertilizer grade: indicates the amount of each nutrient contained in a fertilizer. - Fertilizer ration: relative proportions of the three primary macro-nutrients (N.P.K.)

12. - Should be kept in dry conditions - Do not store in an open container. - Should not be stored in metal containers.  $1 \frac{1}{2} \text{mks}$

13. - Many sellers of the same product - Price of same product is the same all over.  $2\text{mks}$

14. (i) grading: sorting into uniform lots of certain qualities.  $1\text{mk}$

(ii) Standardization. Establishing some uniformity in quality and quantity of products  $1\text{mk}$

15. (i) spacing between the rows.  $1\text{mk}$

(ii) plant population = area of land  $\div$  Spacing of the crop  $\sqrt{\quad}$

Area of land =  $400\text{cm} \times 300\text{cm} \sqrt{\quad}$

Spacing of maize =  $75\text{cm} \times 25\text{cm}$

Therefore, plant population =  $(400\text{cm} \times 300\text{cm}) \div (75\text{cm} \times 25\text{cm}) = 64 \text{ plants.} \sqrt{\quad}$   
Total  $3\text{mks}$

*Agriculture pp1 marking scheme*

16. - The legal owner of the land has security of tenure and hence an incentive to invest and improve productivity. - A farmer can mortgage the land by offering land title certificate as a security to loaning agencies to secure capital to finance development projects. - If a farmer who cannot operate the farm, he can still earn income from it by leasing it. - Disputes concerning land boundaries and/or land ownership no longer arise. 2mks

17. - By construction of dams to regulate the flow of water.  
- By construction of dykes as in the case of river Nzoia to control flooding of Budalangi plains.  
- By planting trees along the river banks to hold soil together and hence reduce erosion.  
- By observing government regulations on leaving a sizeable strip of an uncultivated land along the river bank.

18.

- Aphids
- White flies
- Mealy-bug
- Nematodes
- Mites

**Section B**

19.

- i) Chitting/sprouting. (1x1 = 1mk)
- ii) Humidity/moist environment Diffuse light.(NB Avoid dark room). (1x2 = 2mks)
- iii) Ensure uniform growth after selection. To ensure growth commences immediately after planting. To break seed dormancy. (2x1 = 2mks)

20

- a) Condition illustrated - Blossom end rot in tomatoes 1 x 1 = 1mk
- b) Conditions that predispose tomatoes to the condition 2x1=2mks
  - Irregular application of water
  - Excess application of Nitrogen in the early stages
  - Deficiency of calcium in young fruits
- c) Possible ways of controlling the condition stated in above - Regular watering - Liming the soil/addition of calcium - Mulching to avoid moisture stress - Topdressing with enough nitrogen (2X1/2 = 2 mrks))
- d) Two categories of tomato varieties - Fresh market varieties - Processing varieties 2 x ½ = 2 mks

21.

- a) Identification of structure - Trench silo (1 x 1 = 1mrk)
- b) Form in which forage is presented as illustrated above - Silage 1x1 = 1mk
- c) Role played by:-
  - i) Polythene -keep the structure air-tight/ - Prevents rainfall from getting in (1 x 1 = 1 mrk)
  - ii) Drainage -Drain off rain water/prevents entry of water into the silage (1 x 1 = 1 mrk)
  - iii) Two other methods of forage conservation - Hay - Standing forage / hay (2 x 1/2 = 1 mrk)

*Agriculture pp1 marking scheme*

22. (a) Pests labelled P, Q, R and S. (2 marks)

- P – Locusts
- Q – Army worm
- R – Cut worm
- S – Bollworm

(b) Biting and chewing. (1 mark)

(c) Two ways in which pests can be categorised depending on their habitat. 2x1mk=2mks

- Field pests.
- Storage pests.

### Section C

23.

(a)

(i) It is the period when a viable seed cannot germinate even under favourable climatic conditions / stage of inhibited growth of a seed.

(ii) ☑ Mechanical – scratching the seed coat to make it permeable to water / scarification / knicking.

☑ Heat treatment; use of hot waer or burning the seeds lightly.

☑ Chemical treatment; seeds are dipped in some specific chemicals e.g. concentrated sulphuric acid for 2 minutes and then removed.

☑ Soaking in water – seeds soaked for 24 – 48 hours until they swell then removed and planted immediately. (the first four, well explained x 1 mark) (4 x 1 = 4mks)

(b)

☑ Purpose of the crop / use ☑ Market demand ☑ Concentration of he required chemicals. ☑ Weather conditions. ☑ Prevailing market price and profit margins. (5 x 1 = 5mks correctly explained)

(c)

(i)

☑ Materials carried by water damage the banks.

☑ It widens the riverbed by constantly eroding the bank / reduce potential size of cultivated land.

☑ Eroded soil is deposited downstream thereby causing sedimentation in dams and other bodies.

(first 3 points x 1 mark = 3mks)

(ii)

☑ Trash lines: crop residue such as maize stalk, grass etc are heaped along the contour.

☑ Storeline; stones heaped along the slope to trap soil.

☑ Bunds: heaps of soil along the contour.

☑ Cut-off drains / diversion ditches; open trench with an embankment on the lower side

☑ Terraces; reduce the surface flow of water and carry away excess water.

☑ Gabions / porous dams: Boxes of galvanized wire mesh filled with stones.

☑ Dams and reservoirs.

(7 points x 1 mark = 7mks)

24 (a)

- To remove weeds.
- To bury organic matter for easy decomposition.
- To facilitate water infiltration and aeration.
- To destroy soil-borne pests by exposing them to predators and sun.

*Agriculture pp1 marking scheme*

- To make subsequent operations easy. (5 points x 1 mark = 5mks)

(b) (i)

- ☑ Picked flowers should be put into an open woven basket to allow ventilation.
- ☑ Tins or polythene bags should not be used (leads to fermentation).
- ☑ Wet flowers should not be picked because they may host up and ferment.
- ☑ Don't compact flowers in the basket as this encourages heating up and fermentation lowering pyrethrin content. (5 points x 1 mark = 5mks)

(ii)

- ☑ Prevents water evaporation / maintains moisture in the soil.
- ☑ Acts as an insulator / modifies / regulates soil temperature.
- ☑ Control soil erosion by reducing the speed of running water.
- ☑ Controls the weeds by suppressing their growth.
- ☑ Organic materials decompose and improve soil structure.
- ☑ Organic materials improves soil fertility by releasing nutrients after decomposition. (5 points x 1 mark = 5mks)

(c)

- ☑ Remedy to deforestation
- ☑ Source of income
- ☑ Environmental benefits / protect soil from strong rains, sun and wind.

25. (a) Ways by which farmers minimize grain loses in store. (5 marks)

- Drying them before storage to make them hard for pest not to penetrate.
- Use of proper storage facilities e.g. free from leakage. - Dusting with appropriate chemical to kill pests.
- Removal of affected grains to reduce spread of pests/diseases to clean produce.
- Rear cats to control rodents/rats clear bush around the store to keep away vermin.
- Cleaning store before use to control contamination of grain.

(b) Roles of a farm manager. (8 marks)

- Gathering information e.g. market, labour trends and weather conditions.
- Decisions implementation/implementing farm decisions. - Short term planning e.g. when to till the land, when to plant, harvest etc. - Long term planning e.g. starting of a new enterprise. - Detecting weakness in farm operations. - Making comparison between his level of production and the set standards, - Bearing risks. - To hire and fire farm labour when need be and reward the workers appropriately. - To raise the financial and other resources through savings or borrowing. - To organize and supervise other factors of production such as labour, land and capital. - Purchase inputs required for the farm business.

(c) Importance of agroforestry. (7 marks)

- Source of energy/wood fuel.
- Source of food for human and animals (fodder).
- Source of income from the sale of by-products of the trees or trees themselves.
- They improve soil fertility by fixing nitrogen hence adding nitrates into the soil.
- Source of nectar and pollen for honey production.
- Trees help in soil and water conservation.
- The trees provide raw materials to industries.
- Trees on the farm saves on labour used by women and children in collecting firewood.
- Labour saving ☑ Aesthetic value. (5 points x 1 mark = 5mks)