


MARKING SCHEME AGRICULTURE FORM 3 PAPER 1

1.
 - ✓ High yields due to application of high level of managerial skills and advanced technologies.
 - ✓ Enables production of high quality productions.
 - ✓ Available land is maximumly utilized. ($\frac{1}{2}$ Ⓞ = 2 mks)
2.
 - ✓ Delayed maturity.
 - ✓ Too much vegetative growth
 - ✓ Blossom end rot.
 - ✓ Cracking of fruits before maturity. ($\frac{1}{2}$ Ⓞ = 2 mks)
3.
 - ✓ Practice crop rotation.
 - ✓ Destruction of infested crop residues.
 - ✓ Closed season.
 - ✓ Rogueing /uprooting and burning infected crops.
 - ✓ Timely planting / early planting.
 - ✓ - Intercropping with a crop that deters the pests. ($\frac{1}{2}$ Ⓞ = 2 mks)
4.
 - ✓ Size of the farm.
 - ✓ Weather conditions.
 - ✓ Type of irrigation system used.
 - ✓ Soil type.
 - ✓ Type of enterprise carried out in the farm.
 - ✓ Source of the water.
 - ✓ - Presence of water conservation measures. ($\frac{1}{2}$ Ⓞ = 2mks)
5.
 - ✓ Nearness to the water source
 - ✓ Types of soil
 - ✓ Topography
 - ✓ Previous cropping
 - ✓ Security
 - ✓ Well sheltered place ($\frac{1}{2}$ Ⓞ = 2mks)
6.
 - ✓ Shifting cultivation
 - ✓ Traditional system
 - ✓ Population pressure on a limited area of land
 - ✓ Accumulation of land holdings
 - ✓ Offering of land to settle debts ($\frac{1}{2}$ Ⓞ = 1½mk)
7.
 - ✓ Serrentive / compound layering.
 - ✓ Tip layering.
 - ✓ Trench layering.
 - ✓ - Aerial / marcotting layering. ($\frac{1}{2}$ Ⓞ = 2mks)
8.
 - ✓ Ability to produce many seeds
 - ✓ Seeds remain viable in the soil for a long time awaiting conducive germinating conditions
 - ✓ Easily dispersed
 - ✓ Ability to propagate vegetatively
 - ✓ Elaborate extensive rooting system
 - ✓ Ability to survive in less nutrient supply
 - ✓ Short life cycle ($\frac{1}{2}$ Ⓞ = 2mks)
9.
 - ✓ No soil and water conservation.
 - ✓ Overcharging by the tenant.
 - ✓ No long term investment if lease period is through.
 - ✓ - No incentive to develop land with no written/formal agreement. ($\frac{1}{2}$ Ⓞ = 2mks)
10.
 - ✓ Master roll.
 - ✓ Labour utilization analysis. ($\frac{1}{2}$ Ⓞ = 1mk)
- 11.

- a prevent soil borne pests and diseases attack. (½mk) b) To
) increase nodulation / to enhance nitrogen fixation. (½mk) c) To
T break dormancy in tubers / encourage sprouting in tubers (½mk)
o

12.

- ✓ Thinning
- ✓ Gapping
- ✓ Desuckering
- ✓ Pruning

(½  = 2mks)

13.

- ✓ Burrowing animals they dig on soil hence break it to small bits of rock particles.

- ✓ Large animals as they move over rocks they exert pressure causing them to break.
- ✓ Man activities e.g. mining.
- ✓ Plant roots penetrate through the rock cracks exert pressure on wall hence they break.
- ✓ - Plants decay to produce organic acid which corrode with rock minerals. (½ = 2mks)

14. To suppress weeds.
 ✓ To control pests like rodents. (½ X 2=1mks)

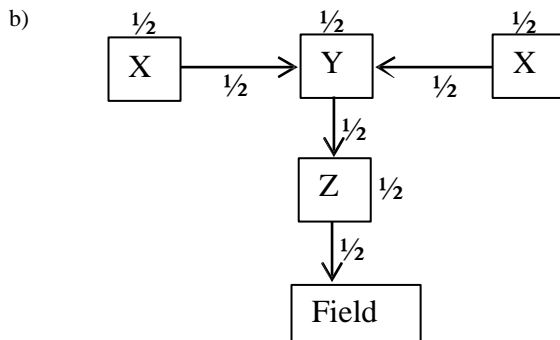
- 15.
- ✓ Regulate bearing.
 - ✓ Remove old / unwanted branches.
 - ✓ Ensure air circulation to create micro-climate unfavourable for pests or diseases.
 - ✓ Regulate the weight for easy harvesting.
 - ✓ Control fruit leaf ratio
 - ✓ - Open the crop for easy spraying / economise chemical spray. (½ = 2mks)

16. Facilitate soil aeration.
- ✓ Improves water infiltration.
 - ✓ Brings leached nutrients near the soil surface for the crop benefit.
 - ✓ - Facilitates root penetration. (½ = 2mks)

17. Avoid addition of organic manure to the soil. (1 = 1mk)
 a) Earthing up the shoulders of the carrots. (1 = 1mk)

SECTION B: (20MKS)

18. a) Four heap system / stalk method. (1 = 1mk)



(½ = 4mks)

NB: Mark on arrows if the letters are well identified.

19. a) A- cutworm
 B- Maize stalk borer. (1 x 1=1mk)

- b)
- ✓ Burrow tunnels in the stems and growing tips destroying transport system.
 - ✓ Eats leaves and reduce photosynthetic surfaces.
 - ✓ Bores holes on maize cobs reducing the yields. (1 x 2=2mks)

- c)
- ✓ Timely planting
 - ✓ Crop rotation
 - ✓ Close season
 - ✓ Trap cropping
 - ✓ Field hygiene. (2x2=2mks)

20. a) A - Double thorn (*Oxygonumsinuatum*) (1 = 1mk)
 B - Stinging nettle (*Urticamassaica*) (1 = 1mk)

- b) .Irritating effect to the farmer
 ✓ Cause injury. (1 x 2 = 2mks)

- c)
- Source of food / vegetable.
 - ✓ Medicinal value.
 - ✓ Upon decomposition add nutrients into the soil (1 x 2 = 2mks)

21. a) T – budding (1x1=1mk)
b) A – Scion
B – Rootstock (1 x 2 = 1mk)
b)
- Plants with desirable root characteristics but with undesirable products can be used and improved to be better producers. ;
- Changing the top of the tree is possible / top working. ;
- More than one type of fruit or flower can be propagated on the same tree. ;
- Some clones can only be propagated in this manner. ;
- Maturity period of crops is shortened. (1 x 2 = 2mks)
22. a) Topography
- Crop to be irrigated
- Type of soil
- Water availability
- Capital availability

- b) Stone lines - Are stones heaped along contour to trap soil that is being washed away /check run off.
- ✓ Trash lines - Train or crop residues are heaped along contour to trap soil before it is washed away.
 - ✓ Cut-off drains / diversion ditches - They are channels that divert water run off from cultivated slopes into areas where it can cause erosion.
 - ✓ Gabions/porous dams - Are boxes made of wire mesh and filled with stones. They are built across slopes - dry valley or gullies to trap soil and reduce speed of run off.
 - ✓ Ridging - ridging ridges constructed along contours of the field to slow down run-off and trap eroded soil.
 - ✓ Bunds - Heaps of soil on earth built on sloping land along contours trap.
 - ✓ Dams - Reduce its speed / run off speed.
 - ✓ Terraces - constructed on hilly areas by excavating soil throwing uphill. (fanyajuu terrace) or down (fanyachini terrace) hence slow down surface run-off and divert water away from cultivated. (2 ⌚ = 10mks)
23. a)
- ✓ Mulching - apply light mulch on the nursery bed after sowing to conserve moisture.
 - ✓ Watering - water regularly twice a day.
 - ✓ Weed control - uproot weeds to prevent competition against growth factors.
 - ✓ Shading - provide shade to avoid direct sun heat that would result in high evapotranspiration.
 - ✓ Pest control to ensure vigorous and healthy growth.
 - ✓ Diseases control - control using appropriate method to enhance healthy growth.
 - ✓ Picking out - remove overcrowded seedlings thus ensure healthy growth.
 - ✓ Fertilizer application to supplement nutrients in the soil.
 - ✓ Hardening off - reduce watering frequency to enable seedlings acclimatize to the normal conditions in the field.
 - ✓ Root pruning- to make lifting of the seedlings easier, encourage short, dense and strong Rooting system.(1 ⌚ = 10mks)
- b)
- Reduce cost of production.
 - ✓ Control soil erosion.
 - ✓ To maintain soil structure.
 - ✓ To prevent disturbances of roots.
 - ✓ Prevent exposure of humus to adverse conditions e.g. sun's heat hence volatilization of nitrogen. (1 ⌚ = 6mks)
24. a)
- Use of open ditches/channels/furrows
 - ✓ Use of underground pipes
 - ✓ French drains
 - ✓ Cambered beds
 - ✓ Mechanically pumping
 - ✓ Sub soiling
 - ✓ Planting trees (5x1=5 mks)
- b) Rainfall amount
- ✓ Attitude
 - ✓ Expected yield/yield potential
 - ✓ Maturity period
 - ✓ Farmers preference and choice(5 x 1=5 mks)
- c)
- ✓ Increase the rate of evaporation of moisture from the soil
 - ✓ Causing lodging in cereals and damage to crops
 - ✓ Blowing away and bringing rain bearing clouds
 - ✓ Agent of seed dispersal
 - ✓ Agent of soil erosion
 - ✓ Increases evapo transpiration rate
 - ✓ Increasing spread of pests and diseases
 - ✓ Destroying farm structures
 - ✓ Brings cooling effect.
 - ✓ Aids in spreading pathogens
 - ✓ Causes stress by chilling of young livestock and crops. (10 x 1=10 mks)