

SECTION B (20MKS)**1.**

- a) i) Inducing part of a stem to produce root while still attached to the mother plant (1mk)
 ii) Trench layering (1mk)
- b) - Produces pathogen free plants
 - Mass production of propagules
 - Its fast
 - Requires less space
 (4x ½=2mks)

2.

- a) Solifluction/ mass wasting (1mk)
- b) i) Water
 ii) Wind
 iii) Human beings
 iv) Animals

*Each 1mk (4x1=4mks)***3.**

- a) To compare porosity/ drainage water holding capacity of different soil (1mk)
- b) Soil sample **A-** Sandy soil
 B- Loam soil
- c) i) Adding organic matter/ manure
 ii) Liming
 iii) Sub soiling
 i) Draining away excess water

*Any (2x 1=2mks)***4.**

- a) Smuts / maize/ ear smut *Any 1 x 1 = (1mk)*
- b) Sugarcane, wheat, sorghum, barley, oat, millet
 Any (4x ½=2mks)
- c) i) Plant certified seed
 ii) Crop rotation close season
 iii) Field hygiene/ destroy crop residues
 iv) Hot water
 v) Rogueing
 vi) Use of resistant

Any (4x1=4mks)

SECTION C

5.

- a)
 - i) prevents water evaporation thus maintaining moisture in the soil for crop use
 - ii) act as an insulator thus modifies/ regulate soil temperature
 - iii) controls soil erosion by reducing the speed of running water intercepting rain drops and increasing the rate of infiltration
 - iv) controls the weeds by suppressing their growth
 - v) organic materials are decomposed by soil micro-organism resulting into humus that improves soil structure and water holding capacity.
 - vi) organic materials improve soil fertility by releasing nutrients after decomposition

Any 6 x 1 = 6mks

b)

- i) Nearness to water source – for easy watering
- ii) Topography on gentle slope to prevent flood and erosion
- iii) Type of soil: well drained deep and fertile
- iv) Security – well protected from theft ad destruction by animals
- v) Well sheltered place wind breaks are necessary to prevent strong winds
- vi) Previous cropping avoid areas where the same crop species had been planted to avoid buildup of pest/ diseases.

Stating ½ mk

Explanation ½ mk

Total 6 mks

c) *Pest*

- Feed on plant parts
- Transmit crop diseases
- Injure plant exposing the plant to secondary infection
- Increase cost of production

Parasite

- Suck blood from animals
- Cause irritation
- Increase cost of production

Decomposer

- Break down plant and animals materials to form manure

Pathogen

- Cause diseases in livestock
- Reduce quality and quantity of agricultural products

Predators

- Kill and feed on other animals
- Some reduce pest population

Pollinators

- Helps in pollination of crops.
- Nitrogen fixing bacteria
- Convert nitrogen from air into nitrates for plant use

Stating -1 mk each

Explanation 1mk each

(4x2=8mks)

6.

a)

- Controlling soil erosion
- Through crop rotation
- Controlling/ moderating soil PH
- Proper drainage
- Controlling weeds
- Inter cropping/ mixed cropping
- Use of manure
- Use of inorganic fertilizers

Any (6x1=6mks)

b)

- Cheap hence good for small scale farmers
- Earthing up is done during tillage and this encourages root growth
- Incorporates crop residue into the soil
- Opens up soil hence allows water infiltration

(4x1=4mks)

c)

- Stomach poisons
- Contact poisons
- Anti feedants
- Systemic poison
- Suffocants
- Repellants

Any (4x1=4mks)

d)

- Do capping at a height of 53cm to stimulate development of strong/ lateral branches
- Select a strong shoot allow it to grow vertically
- Do second copying when the crop is 114cm high
- Select a strong shoot and allow it to grow vertically
- Third copying is done when the crop is 168cm high
- Maintain coffee bush between 150-180cm. (procedure must be followed. 6x1=6mks)

7.

- Is more palatable than pure grass
- Farmer has security against total loss due to attack by pest/ diseases or bad weather
- Mixed pasture yields more per unit area of land than pure grass pasture
- It is more nutritious / has a higher nutritive value than pure grass pasture

- Mixed pasture makes maximum use of soil nutrients because of different nutrient requirement
- Mixed pasture has better weed control effect than pure grass pasture
- Increases soil fertility because of nitrogen fixation
- There is economy in use of fertilizers in mixed pasture
- There is better distribution of growth i.e a mixture of early late maturing species can be include in the mixture

(6x1=6mks)

b)

i) Land preparation

- Clear land and remove stumps
- Cultivate and harrow land to a fine tilth
- Prepare land early during dry season before rains
- Ensure that land is free from weeds
- Firm the seedbed using rollers before planting
- Select desirable variety of seed grass for the ecological zone of the area.

Any (3x1=3mks)

ii) Planting

- Use certified seeds/healthy seeds
- Plant/row the seeds at the onset of rains just before rains. During planting/ early planting.
- Apply phosphatic fertilizer at planting time at appropriate rates
- Drill or broadcast the seeds evenly on the seedbed
- Use recommended seed rate for the variety chosen
- Use twigs or gunny bags to cover the seeds
- Lightly cover the soil or plant 3-5 times the diameter of seed depth
- Firm the seed using rollers after sowing /planting

Any (4x1=4mks)

iii) Field management practices

- Control weeds by uprooting/ applying appropriate selective herbicides
- Apply nitrogenous fertilizers about 6 weeks after germinating in split application.
- Avoid grazing when pasture is too young
- Irrigate in dry season
- Cut back/ practice light grazing in initial place of establishment to encourage lateral growth
- Control pest e.g moles
- Use the correct stocking rate to avoid overgrazing

(7x1=7mks)