END OF YEAR 2025 EXAM (OCTOBER) TIME: 2 HOURS

AGRICULTURE FORM 3 PAPER 1 M/SCHEME

SECTION A

1.

-shortage of labour in the farm

-increased cost of labour

-poor agricultural development due to lack of capital

-shortage of skilled man power

-Lack of incentive to invest due to prospect death

-Reduced agricultural product

2.

-to kill weeds

-To incorporate manure and other organics matter into the soil

-to aerate the soil

-to encourage penetration of plant roots into the soil

-to destroy pest and other diseases causing organism

-to promote water infiltration

-to make subsequent operation easer

3.

-tilling of land

-constraction of farm structures

-measuring of distance

-operating machines

-Crop harvesting

-Feeding animals

-marketing agricultural products

4.

-crop rotation

-Timely planting

-use of clean seed/planting material

-proper spacing

-Clean seedbed

5.

-irregular watering

-too much nitrogen in early stage of growth

-calcium deficiency in yang fruit

6.

-weed control

-Top dressing

-re-seeding

-Pest control

-controlled grazing

7.

-because it induces forking of the carrot tubers/reduces crop quality

8.

- smoothens the weeds

-reduces evaporation of soil moisture

-moderate soil temperature

-reduce speed of runoff/increase water infiltration/control soil erosion

-Enhance minimum tillage

- organic mulching add nutrient and organic matter into the soil after decomposition

-in tomato production it prevent rotting of fruits and promote production of clean fruit

9.

-predators

-decomposers

-pollinators

-pathogens

-parasites

-pest

-nitrogen fixing bacteria

10.

-increase the rate of evaporation i.e. soil moisture

-causes lodging/damage to crops

-causes soil erosion

Increase spread of diseases and pest

-increases everpostraspiration rate in crops

11.

-crop nutrient requirement

-weed control

-pest and disease control

-soil fertility

12.

-Proper supervision of land uder one holding

-save on transportation cost

-extension officers can provide advises at ease

-possible to make a sound farm planning

-long term enterprise can be undertaken

-fencing and long term structure can be made

-it is economical to operate land under a large single unit

13.

-to introduce nitrogen fixing bacteria, to fix nitrogen for the plan

14.

-big loses may occur in case of mismanagement

-encourage monopoly in production

-benefit may be siphoned to the mother country

-encourage social problems/ social evils

15.

-fine texture/poor aerted

-poorly drained/high water holding capacity

-cracks when dry and sticky when wet

-have high capillarity

-have high nutrient holding capacity/not easly leached

16.

-improve soil structure

-increase microbial activity

-acts as a pH beffer

-add nutrient to the soil

17.

-is form of land use which combines tree growing, pasture and food crop as well as keeping animals in the same piece of land.

SECTION B

18.

a) –amount of SA required is equals to 10 X 120kg = 1200kg

b) –amount of Nitrogen to be applied is equal to 120 X 21/100 kg =252kg of Nitrogen

c) –number of bags to be bought is equal to 1200/50 kg =24 bags of Sulpate Ammonia

d) –amount of money to be spend is equal to 24 X sh.1200 =28,800/=

19.

a) - plant population = area of land /spacing of crop

Area of land 4.5 X 10,000m^2 = 45000 m^2

Spacing 0.75m X 0.3m =0.225m^2

Therefore, plant population = 45000m^2/0.225m^2

= 200,000 maize plants

b)

–type of machine to be used

-soil fertility

-variety of maize

-moisture availability

-use of the cop

20.

a) –nursery bed

b)

–protect the seedling from direct heat of the sun

-protect the seedling from direct rain drop

-to reduce light intensity

c) - to harden the seedlings before transplanting/to prepare the seedling to the condition in the main field.

d)

-root system of the seedling may be damage during transplanting

-poor handling may affect the growth of the seeling

- seedling take time to recover from the shock they get when they are uprooted

21.

a) –soil sampling

b)

-A -traverse method

-B -zigzag method

c)

-dead furrows

-terraces stand

-old fence line

-old manure heap/compost pits/old boma

-near trees/ bounderies

-near swampy areas/water logged/eroded areas

-burned site

-Ant hills

-Recently fertilized far

-between slopes and furrow bottom

SECTION C

22. a)

-altituted of between 0-2100m above sea level

-temperature ranging from 24^0 c to 29^0c

-minimum rainfall of 750mm distributed throughout the year

-well drain fertile soil/loam soil

b)

-land is prepared during the dry season

-vegetation is cleared and all stumps removed

-primary cultivation is done and all perennial weeds removed

-The land is harrowed to produce medium tithe

-furrows are made to a spacing of 90-100cm/holes are dug at a spacing 90-100cm by50 cm

-apply 7-10tones of well rotten manure/ha

-select desirable variety of Napier grass depending on the ecological contion

-use cuttings/splits

-cutting should have 2-3 nodes

-planting should be done at the onset of rains

-stem cutting are placed in the furrow/planting holes in a slanting manner

-compound fertilizer/N:P:K 20:20:0 is applied in the planting furrow/hole at the rate of 200kg/ha

-the cuttings are covered with enough soil where two nodes are covered undergroug and one above the ground.

c)

-cut and fed to animals when stems are (0.8-1.5)m high / 3-5 months old

-cut the stem (2.5-5.0)cm above the soil surface to facilitate faster regrowth

-cut the stem with a sharp panga/machete to avoid destroying the stem

-excess Napier grass should be used for silage making

-the cut Napier grass should be chopped into smaller pieces by use of a chaff cutter/sharp panga before use

-dried Napier grass is used as mulching material

23. a)

-seed sorting/cleaning- done to remove unwanted type and foreign materials

-seed dressing - selected seed are coated with chemicals to control seed borne and soil borne pest and diseases

-seed selection –select the recommended variety for the area

-seed inoculation - coating leguminous seed with a nitro culture/inoculant to encourage nodulation

b)

-early establishment lead to withstand completion with weeds

-better use of the available rainfall

-crop escape attack by pest and diseases

-better use of nutrient i.e. nitrogen flush before it is leached

-good market price /sell easely when supply is low

-reduce completion for labour with other operations/give time for other practices

c)

-destruction of soil organism – beneficial soil organism die due to too much heat and poisonous gases from fumes

-Destruction of organic matter – this are decomposed dead plants and animal which useful to soil and are destroyed by high heat

-destruction of soil structure – soil partical become loose and pliable due to loss of moisture which bring about adhesion of pertical hence easy erosion

-result to soil erosion – light and loose/pliable particals are easly washed away by water and carried away by wind.

-Loss of soil nutriet/fertility – volatile nutrient are chenched to gaseous state by heat and escape to the atmosphere

-accumilation of some compouds/nutrient to toxic leval – some plant nutrient such as potassium increases in the soil to a leval that pnhibit absorbtion of other nutrients

24.

a) –land tenure is the nature of the right to own and use land whereas land reform is any deliberate/organized action with the purpose of improving land ownership and land use,

b)

-shifting cultivation – individual own several pieces of land in process of clearing and shifting to new ground after soil exhaustion

-customary low of land ownership – land is fragmented to several pieces to facilitate inheritance by the heirs

-population increase – people are forced to by several pieces of land in different places due to population pressure

-Accumulation of land by money lenders – privet money lender accumulate land/repay themselves with pieces of land if an individual farmer is unable to pay.

-traditional use of land – land may be offerd to settle depts. Or as apresent to newly weds and others. This make an individual to have several fragments of land.

c)

-time wasting traveling around scattered fragment of land

-difficult to provide proper and effective weed, pest and disease control due to constant movement

-difficult to develop and follow a sound farm plan

-Difficult to supervise the scattered fragment

-result to low productivity leading to low standard of life

-difficult to make use of agricultural extension advices since the fragments are not easily reached

-restricted grazing in one holding is not possible due tooverstocking, leading to land degeneration and denudation

-soil conservation measures are difficult to carryout