**CROP PRODUCTION I (LAND PREPARATION)**

1. three factors that determine depth of ploughing during land preparation

* Crop to be planted
* Implement available

Type of soil

2. Four reasons for cultivating land before planting.

 - To improve soil aeration.

 - To improve germination.

 - Destroy weeds.

 - Destroy weeds.

 - Incorporate organic matter in the soil.

 - Increase water infiltration.

3. (a)Is a situation in which least possible cultivation operations are carried out in crop

 production.

 (b) - Clearing the land / bush clearing.

 - Using appropriate chemicals to kill the existing vegetation.

 - Weeding using herbicides.

 - Planting / drilling seeds directly into the stubble of previous crop.

4. (a) - Harrow the land to a fine filth;

 - Harrow during the dry or before the rains;

 - Make the seed be weed – free / ensure clean seed bed;

 - Firm the seed bed using rollers after sowing;

 - Select a desirable variety of seed for the ecological zone,;

 - Sow seeds at the onset rains/ early planting;

 - Apply phosphatic fertilizers at appropriate rate of 200 – 300 kgs/ ha at planting time;

 - Drill or broadcast the seeds evenly;

 - Use a recommended seed rate for the variety / seed rate of 1.5 – 2.0 kh/ha pure seeds;

 - Bury seeds at 2 ½ times their diameter;

 - Control weeds by uprooting/ apply a suitable herbicide;

 - Apply nitrogenous fertilizers about 6 weeks after germination in split application.

 - Avoid grazing when the pasture is too young.

 - Practice light grazing in the field phase of pasture establishment. (10 x 1 = 10 mk)

 (b) - Select seeds of the same size, variety, age and free from pests and diseases.

 - Plant seeds at the same time.

 - Prepare the whole field to required uniform tilth.

 - Plant at the right moisture content of the soil / irrigation uniformly.

 - Treat seeds before planting i.e. break dormancy.

 - Plant at the correct depth. (5 x 1 = 5 mks)

 (c) - Soil moisture content.

 - Type of soil.

 - Cost of operation.

 - Size of seed/ type of planting material/ type of crop.

 - Type of machinery available / use of tractors.

 - Topography / gradient of the land/ liability of soil erosion.

 - Skills of the operator.

 - Initial conditions of the land/ the cropping history of the land.

 - Time available to carry out the operation before planting.

5. Four physical conditions of the seedbed that need to be changed to facilitate

 Germination

* Size of soil clods (clods (made small or medium size
* Appropriate soil depth
* Soil looseness
* Should be weed free

- Soil moisture content improved

6. Four importance of sub soiling as a tertiary operation

* Brings leached nutrients to the surface
* Breaks hard pans
* Promotes aeration of the soil
* Promotes water infiltration

- Ensures better root penetration

7. Four advantages of rolling in seedbed preparation are:

* Press the seeds against the soil moisture
* Controls soil erosion
* Ensure uniform germination
* Controls removal of small seeds by wind
* Breaks large soil cods

8. four disadvantages of minimum tillage

* The less porous surface increased soil erosion especially in heavily sols
* Difficulty in weed control
* Speed of planting to reduce due to large amount of residues in the soil and big clods

Leads to accumulating of soil borne pests and diseases

9. a) - ridging

b) (i) Encourage tuber expansion

* Allow easy harvesting of crop roots

(ii) Rolling

* + Leveling

10.

* Leads to timely planting
* Weeds are appropriately controlled especially the perennial such as couch grass
* Farmers take advantage of availability of labour reducing the cost of labour
* Control of soil borne pests

Gives time for better organic decomposition

11. - By repeated cultivation at the same depth;

 - Cultivating the soil when wet using heavy machinery;

12. - Type and size of planting material;

- Topography/slope f land;

- Soil moisture content;

- (Initial) condition of land/amount of vegetation on the land;

-Capital available

- Type of implement used;

13. It is the least number of cultivation operations either during preparation of the seed bed or

 during the management of the crops.

14.

* Market demand
* Type of crop to be planted
* Moisture condition of the soil and rainfall pattern
* Prevalence of pests and diseases
* Prevalence of weeds

15. two factors that determine the number of cultivation on a field before it is ready for planting

* purpose of crop
* moisture content
* concentration of desired chemical
* weather
* market demand

16. - Enables crop to benefit maximumly from available moisture

 -Crops make use of nitrogen flush available at that time

 -Crops fetch high market prices

 -Crops escape from pests and diseases

 -There is high vigour in crops that resist diseases

 -Ensures timely harvesting

17. - type of crop to be planted

 -Implements available

 -Type of soil

 -Climatic conditions