**FACTORS WHICH INFLUENCE AGRICULTURE**

1. two roles of humus in the soil that are beneficial to crops

* Provide nutrients
* Increase water holding capacity
* Increase soil temperature

Neutral soil PH

2. a) five activities that may be undertaken in organic farming

* Mulching
* Apply manure
* Use medicinal plants to control parasites and diseases
* Crop rotation
* Rear livestock on natural organically grown pasture
* Physical/ cultural/ biological/ pests, weeds and disease control

3. four effects of temperature on crop growth

Low temp-slow growth rate

-increase incidence of negative infection e.g. CBD

-improve quality of some crop

High temp-cause wilting

-increase growth rate

-improve quality of some crops

-increase pest and disease incidences (1/2x4=2mks)

4. four ways by which wind affects the growth of crops.

- Causes physical damage to crops.

- Cause rapid spread of diseases/ pests/ weeds.

- Can cause water stress as a result of evaporation.

- Causes stress of crops due to chilling caused cold winds.

- Encourage transpiration hence water and mineral uptake.

5. Two factors related to light that affect crop production and distribution in Kenya:-

* Light intensity
* Light duration

- Light wavelength

6. The environmental conditions that may lead to low crop yields

* Poor soil fertility /infertile soil
* Damage by hailstorms
* Less rainfall/unreliable/drought
* Poor soil type resulting into leaching or water logging
* Inappropriate soil PH
* Inappropriate temperature (too low or high)
* Excessive wind leading to increase in water loss from the soil
* Extreme relative humidity
* Extreme of light intensity
* Topography / some attitudes e.g. very high may limit crop growth ( 1mk x any 7pts = 7mks)

7. - Rainfall

* Soil
* Topography
* Light
* Wind

8. One physical characteristic used in classifying soil is:

* Colour,
* Texture,
* Structure

9. Four advantages of organic farming

* Environmental friendly
* Products do not have organic farming
* Products do not have organic chemical residue
* Improve soil structure
* Replenishes nutrients in the soil as it uses organic manure
* Enhances soil water retention
* Provides food for soil microbes
* Enhances soil water infiltration ( 4x ½ = 2mks)

10. (a) The aim of the experiment was:- to show presence of living organisms in the soil

(b) observations were:

* Flask D - Limewater turns milky/turbid (1mk)
* Flask E – Lime water remains clear (1mk)

(c) The reason for the observation in flask D is:-

Carbon dioxide which turns water milky in flask D would have been produced only during the respiration of living organisms present in fresh soil

11. - It may have hard pan which interfere with water infiltration

12. a) - Light duration

* Light intensity
* Light wave length ( ½ x3=1 ½ mks)

b) Evapotranspiration

* Presence of pest

13. a) - E – Single grained structure

- F – Granular structure (1x1=1 mk)

b) i) Humus with clay (1x1=1 mk)

ii) Air space (1x1=1 mk)

c)- Colour affects soil texture and hence micro- organisms in the soil √

- Texture – affects drainage, aeration and capillary

- Structure – affects aeration and root penetration

14. three physical characteristics of soil (1 1/2mks)

* Soil structure
* Soil texture
* Soil colour

15. a) State merits of horizon A

* source of plant nutrients
* support/anchor the crops
* store of water for the crops
* sources of soil micro organism

b) State distinct features of horizon B

* deficient of humus(nutrients)
* contain leached nutrients
* contains more compact soil particles
* presence of hard pans in some soils

c) Transitional zone-this is a zone bordering two adjacent layer of soil profile

i)Weathered rock

Importance

* Give rise to sub soil
* Source of minerals
* Determine mineral content of soil and type of soil

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* Low temperatures encourages crop diseases such as leaf rust
* Low temperatures may increase or lower the quality of farm produce
* High temperatures hastens maturity/ improves the quality/ lower the quality
* Increases the rate of evapo transpiration which may result loss plant moisture/ leading to wilting of crops

17.

* Movement of animals in large numbers
* Decomposition of plant and animal remains by soil micro- organisms
* Physical breaking of rocks by roots of higher plants
* Man’s activities e.g. cultivation, mining and road construction
* Mixing up of soil by animals e.g. earth worms and

18. - Temperature/ Altitude

- Soil type;

- Prevailing winds;

- Rainfall; (4x ½ =2mks)

19. - It influences the movement of the weathered materials hence affecting the depth of soil development;

22. two importance of parent’s material in soil profile

* Determine soil characteristics
* Determine soil depth

Determine soil nutrients

23. four ways of modifying soil temperature in crop production

* Mulching
* Pruning
* Shading of crops
* Irrigation (4x ½ mks)

24. a) two factors that affect selectivity of herbicides

* Stage of plants growth
* Plants morphology and anatomy
* Mode of action
* Environmental factors (2x1=2mks)

b) Name two farming practice that cause water pollution

25. four factors that influence soil formation

* Parents rock material
* Climate
* Topography
* Biotic/organic/living organism

26. - Drainage

-Aeration

-Water-holding capacity

-capillary

27. -large animals e.g. Buffaloes

-Man activities e.g. farming

-Root pressure of plants

-Burrowing animals e.g moles, termites