



Dr. Blosa Science

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The Science Foundation College
Uganda East Africa
Senior one to senior six
+256 778 633 682, 753 802709
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UACE P515/1 Principles and practices of agriculture 2010

SECTION A (30 MARKS)

Write the letter corresponding to the correct answer

- High soil pH can be corrected by application of
 - lime
 - single super phosphate fertilizer
 - compound fertilizer
 - Sulphate of ammonia fertilizer
- Which one of the following is not a characteristic of nematode
 - Have piercing and sucking mouth parts
 - Are round with unsegmented bodies
 - Lack legs
 - Are hermaphrodites
- Scarification of seed is done to
 - protect them from soil borne diseases
 - inoculate them
 - allow easy germination
 - improve their storage life
- Which one of the following factor does not affect the price of a commodity?
 - Government policy
 - Sex of a customer
 - Cost of implement
 - Marketing cost
- Which one of the following diseases is controlled by slaughtering of affected animal
 - Foot rot
 - Foot and mouth disease
 - African swine fever
 - Black quarter
- Tomato fruits become yellow or reddish on ripening because
 - There is a breakdown of chlorophyll
 - There is a reduction in nutrient flow into the fruit

- C. Green pigments are oxidized to yellow
 - D. There is more iron uptake causing reddening
7. Genes are said to be linked when they
- A. are situated on the same chromosomes
 - B. express themselves in homozygous form
 - C. do not show independent assortment
 - D. are located on homozygous chromosome
8. The ability of a material to extend in all directions when subjected to compressive force is its
- A. hardness
 - B. ductility
 - C. malleability
 - D. toughness
9. The major reason for adding sand to clay soil for crop production is to
- A. decrease acidity
 - B. improve drainage
 - C. improve water retention capacity
 - D. decrease alkalinity
10. Which one of the following is a control measure for trypanosomiasis in cattle?
- A. Dipping
 - B. Vaccination
 - C. Spraying bushes with pesticides
 - D. Isolating animals
11. Which one of the following is the correct order of treating hides
- A. Flaying → washing → fleshing → draining → trimming → preservation
 - B. Flaying → fleshing → draining → washing → trimming → preservation
 - C. Flaying → trimming → fleshing → washing → draining → preservation
 - D. Flaying → draining → fleshing → washing → trimming → preservation
12. Supply of excess nitrogen macronutrient to plant may cause
- A. Browning of leaves and premature drop off
 - B. Chlorosis
 - C. Delayed maturity
 - D. Production of pigment other than chlorophyll
13. A test cross refers to crossing
- A. an individual with the parent to determine the genotype
 - B. an individual with a homozygous recessive one to establish the genotype
 - C. two individuals to determine the dominant character
 - D. two individuals to determine compatibility
14. Maize streak is characterized by
- A. dark brown patches on underside of leaves
 - B. papery lesion on leaves
 - C. narrow yellow stripes parallel to leaf veins
 - D. sooty appearance on the cob

15. The method used in castrating animals depends on the following **except**
- A. tools available
 - B. skills available
 - C. type of animal
 - D. age of animal
16. The process of creating enough space for seedling to grow before transplanting may be achieved by
- A. Hardening off
 - B. Staking
 - C. Pricking out
 - D. pruning
17. Which one of the following conditions may make a cow fail to show signs of estrus?
- A. Secretion of adrenalin
 - B. Persistent corpus luteum
 - C. Low level of progesterone hormone
 - D. Absence of a bull
18. Which one of the following is **not** a characteristic of a good agro-forestry tree species?
- A. Having light canopy to allow sunlight penetration
 - B. Being deep rooted
 - C. Being easy to establish
 - D. Being able to compete with crops
19. Keeping animals in collecting yard before dipping is done to
- A. Ensure orderly entrance of animals
 - B. Ensure that all animals are present before dipping
 - C. Rest the animal before dipping
 - D. Assess the level of tick infestation
20. Price mechanism in agriculture assists farmers in the following **except**
- A. Deciding on production alternatives
 - B. Improving productivity
 - C. Deciding on production combinations
 - D. Guiding on choice of market
21. Which one of the following sets of minerals and vitamins combat rickets in animals?
- A. Magnesium, manganese, vitamin D
 - B. Vitamin D, phosphorus, Sulphur
 - C. Vitamin B, calcium, phosphorus
 - D. Calcium, vitamin D, phosphorus
22. Intramuscular injection in cattle is best administered in the
- A. hump
 - B. neck
 - C. rump
 - D. shoulder
23. One cotton pest controlled by growing the hairy cotton variety is
- A. Cotton stainer

- B. American bollworm
 - C. Jassids
 - D. Spiny bollworm
24. In vegetable production frocking out refers to removing
- A. excess plant and transferring them to another bed
 - B. diseased plant from the nursery and burying them
 - C. soil to facilitate planting seeds in a nursery
 - D. excess plant from a nursery and throwing them away
25. Absorption bank conserve water and soil by
- A. Holding soil particle together
 - B. Retaining water and soil
 - C. Increasing surface roughness to reduce the speed of run off.
 - D. Preventing run off
26. Which of the following may be a result of inbreeding?
- A. Improved fertility
 - B. Increased mutation rate
 - C. Accumulation of lethal genes
 - D. Polyploidy
27. Silage is not recommended for feeding calves because
- A. it is contaminated with harmful microorganisms
 - B. calves cannot digest silage efficiently
 - C. it is not palatable to calves
 - D. it contains chemicals which are harmful to calves
28. The value of assets minus debts on a farm, is referred to as the
- A. Profit
 - B. Capital
 - C. Gross margin
 - D. Net worth
29. The function of the differential lock mechanism in a tractor is to
- A. allow a tractor to turn in a narrow space
 - B. allow a tractor to break efficiently
 - C. protect a tractor against robbery
 - D. connect the shaft to the rear wheel
30. It is not necessary to apply nitrogen fertilizers to a mixed grass-legume pasture because
- A. Nitrogen suppress uptake of phosphorus
 - B. Nitrogen may reach toxic levels in the legume
 - C. Grass may overgrow to suppress legumes
 - D. Legume fix nitrogen to the pasture

SECTION B

31. (a) Give the meaning of the following as applied in pesticide use
- (i) Pre-harvest period (01mark)
 - (ii) Lethal dose 50(LD50) (01mark)
- (b) Explain four characteristics that make pests successful in nature (04marks)
- (c) State four qualities of a good biological agent for pest control. (04marks)
32. (a) Suggest four characteristics of a good site for dip construction. (04marks)
- (b) Explain six precautions taken during the dipping of farm animals. (06marks)
33. (a) State two other forces that aid the movement of water up the stem of a plant other than transpiration full. (02marks)
- (b) Give three ways in which transpiration is important to plant. (03marks)
- (c) Give five roles of water in plant growth. (05marks)
34. (a) Outline five conditions which would encourage a farmer to mix animal feeds on the farm. (05marks)
- (b) A farmer would like to mix a ration containing 18% CP using maize bran which is 8% CP and cotton cake which has 40% CP
- (i) Using Pearson square, show the proportions of maize and cotton cake which would be mixed to make the ration. (03marks)
 - (ii) Explain two ways by which the nutritive value of the ration in (b)(i) may be improved. (02marks)
35. (a) Suggest five factors to be considered when planning a settlement scheme. (05marks)
- (b) Explain five ways in which settlement and resettlement increase agricultural production.

Suggested answer

1D 4B 7A 10C 13B 16C 19B 22B 25C 28D
2A 5B 8C 11C 14C 17B 20B 23C 26C 29D
3C 6A 9B 12C 15D 18D 21D 24B 27A 30D

Comments

3. Scarification is a pretreatment of seeds that aims to break seed dormancy and accelerate the occurrence of uniform germination.
11. flaying is skinning

20. The price mechanism refers to the way price change in response to changes in demand and supply so that a new equilibrium position is reached. It is importantly a method of allocating and rationing resources in free market economy.
22. Intramuscular injection in cattle should be given in the muscle of the **neck to avoid blemishes in more variable carcass cuts**, regardless of the age. Do not give i.m injection in the rear led or over the rump.
23. Cotton leafhopper (jassids) cannot feed on hairy cotton.

SECTION B

31. (a) Give the meaning of the following as applied in pesticide use

(i) Pre-harvest period (01mark)

Pre-harvest period: it the duration/length of time which must elapse before crops sprayed with agricultural chemical can be consumed

(ii) Lethal dose 50(LD50) (01mark)

Lethal dose (LD50) is the dose of agricultural chemical that will kill 50% of the pest in a test population.

(b) Explain four characteristics that make pests successful in nature (04marks)

- Have high rate of multiplication e.g. lay very many eggs.
- Most of them are small making it easy to hide
- They resemble the host crop for easy camouflage
- Have hard cuticle to protect them from adverse conditions
- Most fly leading fast dispersal
- Have defense mechanisms such as production of offensive smell
- Undergo metamorphosis such that different stages occupy different ecological niches to reduce competition
- Develop resistance to pesticides
- Have alternative source of food
- Have modified mouth parts to feed on crops such as mandibles for cutting and proboscises for sucking

(c) State four qualities of a good biological agent for pest control. (04marks)

- Must have high searching ability
- Should be adaptable to wide range of environments
- Should be host specific
- Should have ability to multiply in order to control the target organism
- Should not cause a lot of damage to crops and animals
- Should be easily raised artificially

- Should be easy to distribute/apply

32. (a) Suggest four characteristics of a good site for dip construction. (04marks)

- Topography: the site should be gentle sloping, free from flooding and erosion
- Soil type: the soil should be firm to prevent dip from collapsing
- Accessibility: the site should be easily accessible
- Water supply: the farm site should be able to access water
- Must be big enough to accommodate the dip and accessories

(b) Explain six precautions taken during the dipping of farm animals. (06marks)

- Test the strength of the Acaricide before dipping exercise
- Ensure that the collecting yard floor is made of concrete to reduce mud into the dip
- Fill the footbath with clean water to ensure that mud is removed from the animal feet.
- Sedimentation sump should be provided to sieve the dip wash so as to remove dirt from dip wash.
- Provide the animals with water to prevent them from drinking Acaricide
- Sick and pregnant animals should not be dipped
- Seal off all the entrances into the dip to stop animals from entering before the right time
-

33. (a) State two other forces that aid the movement of water up the stem of a plant other than transpiration pull. (02marks)

- root pressure
- capillarity

(b) Give three ways in which transpiration is important to plant. (03marks)

- absorption of water
- absorption of mineral salts
- cooling of the plants.

(c) Give five roles of water in plant growth. (05marks)

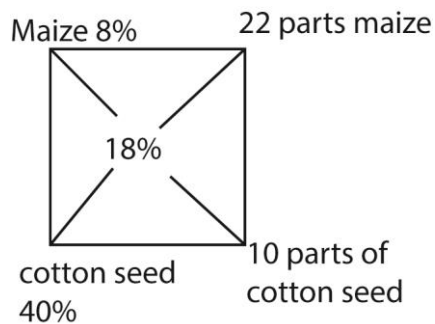
- Aid seed dispersal
- Provide support to herbaceous plants
- Breaks up the testa of a seed during germination
- Reagent in photosynthesis
- Loss of water through the leaves cools the plant.
- Medium of fertilization

34. (a) Outline five conditions which would encourage a farmer to mix animal feeds on the farm. (05marks)

- Nutrition tailored to the needs of specific animal(s)
- Reduce feeding cost such as of packaging,
- Reduction of wastage
- A farmer may get some of the inputs from the farm
- Ensure ingredient safety
- Mixing feeds in affordable quantities

(b) A farmer would like to mix a ration containing 18% CP using maize bran which is 8% CP and cotton cake which has 40% CP

(i) Using Pearson square, show the proportions of maize and cotton cake which would be mixed to make the ration. (03marks)



(iii) Explain two ways by which the nutritive value of the ration in (b)(i) may be improved. (02marks)

- Add vitamins
- Add fibers

35. (a) Suggest five factors to be considered when planning a settlement scheme. (05marks)

- Accessibility
- Size of the area whether it can accommodate

(b) Explain five ways in which settlement and resettlement increase agricultural production. (05marks)

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Thanks

Dr. Bbosa Science

