



Dr. Blosa Science

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UACE P515/1 Principles and practices of agriculture 2006

SECTION A (30 MARKS)

Write the letter corresponding to the correct answer

1. Which of the following are products of microbial fermentation in rumen?
 - A. Fatty acids and glycerol
 - B. Volatile fatty acids and ammonia
 - C. Peptones and peptides
 - D. Glucose and alcohol
2. During phototropism,
 - A. auxins are activated on the illuminated side of the shoot
 - B. more auxins are distributed to the dark side of the shoot
 - C. auxins are destroyed on the light side of the shoot
 - D. more auxins move to the illuminated side of the shoot
3. A bird that is producing a watery, yellowish white droppings, with an offensive smell and thick mucus from the mouth is most likely affected by
 - A. fowl cholera
 - B. fowl typhoid
 - C. Newcastle disease
 - D. Coccidiosis
4. The following are activities involved in decision making in farm management:
 - (i) Collection of information
 - (ii) Problem recognition
 - (iii) Analysis of alternatives
 - (iv) Taking action
 - (v) Making a decision

Which one of the following is the correct order of the activities?

- A. (i), (iii), (ii), (iv) and (v)
- B. (iv), (ii), (i), (iii) and (v)
- C. (ii), (i), (iii), (v) and (iv)

- D. (ii), (i), (v), (iii) and (iv)
5. Which one of the following soil types is determined by climate?
 - A. Zonal soil
 - B. Azonal soil
 - C. Intrazonal soil
 - D. millisols
 6. Which one of the following is not a factor of production?
 - A. Management
 - B. Labour
 - C. Capital
 - D. Transport
 7. Gross National Product (GNP) is the
 - A. total values of all goods and services produced both internally and externally
 - B. total value of all goods and services produced excluding external earning
 - C. gross internal income less the variable costs
 - D. difference between total earnings and total expenditure
 8. Which one of the following is an indicator of farming efficiency?
 - A. Increase in the rate of investment in new enterprises
 - B. Percentage increase in capital investment
 - C. Increase in man hours spent in production
 - D. Increase in returns to capital and land investment
 9. Which one of the following pairs of diseases is caused by protozoa?
 - A. Foot and mouth disease and rinder pest
 - B. Rinder pest and heart water
 - C. Red water and trypanosomiasis
 - D. Red water and Anaplasmosis
 10. Initial uptake of water by seeds during germination is a result of
 - A. active absorption involving expenditure of energy
 - B. imbibition due to dried out cells and cell walls in the seed coat
 - C. osmotically active substances within the seed
 - D. mass flow through the micropyle
 11. Which one of the following maybe a result of inbreeding in a population
 - A. Polyploidy
 - B. Improved fertility
 - C. Increased mutation rate
 - D. Increased homozygosity
 12. The ability of an enzyme to act on a specific substance depends on the enzyme's
 - A. Molecular weight
 - B. Protein nature
 - C. Activation energy
 - D. Surface configuration
 13. One way of ensuring that crop make use of available rain water is by

- A. Constructing water reservoirs
 - B. Planting early
 - C. Pruning the crops
 - D. Panting in rainy season
14. Best quality hay is obtained by
- A. Cutting grass at flowering stage
 - B. Complete drying of grass in the sun
 - C. Cutting grass at the stage of maximum vegetative growth
 - D. Baling grass immediately it is cut
15. Which one of the following pairs of hormones is responsible for milk-let down?
- A. Oxytocin and prolactin
 - B. Estrogen and progesterone
 - C. Prolactin and estrogen
 - D. Oxytocin and progesterone
16. Which one of the following herbicides would you advise a farmer to apply on growing maize crop infested with coach grass?
- A. Selective, translocated, pre-emergence herbicide
 - B. Selective, translocated. Post-emergence herbicide
 - C. Contact, post emergence, non-selective herbicide
 - D. Translocated, post-emergence, non-selective herbicide
17. The reason for aligning nursery seed bed along a north-south direction
- A. allow for even distribution of light in the nursery seed bed
 - B. protect the seedling from strong winds
 - C. minimize transpiration of seedlings
 - D. ease nursery bed operation
18. White smoke coming out of a tractor's exhaust is indication of
- A. Too much fuel in the combustion chamber
 - B. Worn out bearings
 - C. Presence of water vapour in the engine
 - D. Incomplete combustions
19. Which one of the following explains why plucked tea leaves should be delivered to the factory immediately? Because it
- A. minimizes incidences of fermentation
 - B. minimizes effects of uncontrolled withering which affects quality
 - C. maintains high moisture content
 - D. minimizes hardening of leaves
20. The function of a brass float in the chamber of a carburetor is to
- A. break down fuel into tiny droplets and mix it with air
 - B. control the amount of air coming into the float chamber
 - C. work together with the choke valve in regulating the amount of air coming into the chamber
 - D. control the amount of fuel coming into the float chamber
21. Plant growing under humid condition lose excess water by

- A. transpiration
 - B. cuticular transport
 - C. guttation
 - D. use of lenticels
22. Which one of the following describes the word ration as used in animal feeding?
- A. The amount of food required to keep the animal alive
 - B. The palatability of the feed
 - C. A mixture of feeds that meets an animal's body requirement in a day
 - D. The amount of feed eaten by an animal in a day
23. Which one of the following is not a reason for allowing sunlight into animal house?
- A. Lighting up the houses
 - B. Raising temperature in the house
 - C. Killing pathogenic organisms
 - D. Encouraging fast growth in your animal
24. Which one of the following methods of identification is best for a dairy herd?
- A. Branding
 - B. Ear notching
 - C. Ear tattooing
 - D. Ear tagging
25. Which one of the following affects the quality of sugar cane?
- A. The part of the cane used for planting
 - B. The time of planting
 - C. The age of the cane
 - D. The method of harvesting
26. The function of the governor in an engine is
- A. Regulation of engine speed
 - B. Controlling the opening and closing of valves
 - C. Ensuring the smooth running of the engine
 - D. Starting and stopping the engine.
27. Which of the following groups of organisms in an ecosystem contains the greatest amount of energy?
- A. Decomposers
 - B. Herbivores
 - C. Omnivores
 - D. carnivores
28. Which ones of the following does not increase traction in a tractor
- A. Addition of weight
 - B. Ballasting
 - C. Increasing tyre pressure
 - D. Increasing the number of rear tyres.
29. One advantage of using a spray race over dipping is that
- A. The Acaricide can be applied to pregnant and sick animals.

- B. There is better wetting of animals with the Acaricide
 - C. It requires less attention from operator
 - D. It is cheaper
30. Agricultural products have an inelastic demand because they
- A. are produced seasonally
 - B. are complemented by synthetics
 - C. cannot be stored too long
 - D. are a necessity

SECTION B

Do all numbers

31. (a) Give **three** major forms of nitrogen in the soil (03marks)
 (b) Outline **five** uses of nitrogen to crops. (05mark)
 (c) State **two** factors that affects leaching in the soil. (02marks)
32. (a) Give **four** ways in which digestion in ruminants is more beneficial to the animal than digestion in non-ruminants? (04marks)
- (b) Describe two symptoms of bloat (02marks)
- (c) Suggest two ways of
- (i) preventing bloat (01mark)
 - (ii) treating bloat (01marks)
- (d) Explain the following terms as used in animal nutrition (02marks)
- (i) digestibility
 - (ii) production ration
33. (a) State **two** types of cooling systems for internal combustion engines (02marks)
 (b) State the uses of the following parts of the cooling system of a tractor. (04marks)
- (i) fan
 - (ii) thermostat
 - (iii) impeller
 - (iv) radiator
- (c) Give **four** reasons why water is popularly used as a coolant in internal combustion engines. (04marks)
34. (a) Outline **five** ways in which agricultural activities affect ecosystem. (05marks)
 (b) Give **five** characteristics of sustainable agriculture. (05marks)
35. (a) Give the meaning of the following terms
- (i) Profit and loss account (01marks)

- (ii) Gross margin (01mark)
- (iii) Complete budget. (01marks)

(b) State **four** types of information required to make a farm budget. (04marks)

(c) Give **three** constraints farmers face in making farm budgets. (03marks)

Suggested answer

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

Comments

9. Foot and mouth disease is caused by a virus
- Rinder pest is a viral disease
- Red water is caused by a protozoan called babesia
- Anaplasmosis is caused by a bacteria anaplasma phogocytophilum
- Trypanosomiasis is caused by a protozoa

SECTION B

31. (a) Give **three** major forms of nitrogen in the soil (03marks)

- Nitrate
- Nitrite
- ammonium

(b) Outline **five** uses of nitrogen to crops. (05mark)

- It's necessary for the formation of chlorophyll
- It improves the quality and quantity of leaf crops such as cabbages, dodo, etc.
- It is a constituent of plant proteins.
- It facilitates in cell division and therefore responsible for growth
- Controls the use of phosphorus and potassium in the plants
- Regulates availability of P and K.

(c) State **two** factors that affects leaching in the soil. (02marks)

- Rainfall intensity
- Soil texture
- Amount of nutrients available in the soil
- irrigation

32. (a) Give **four** ways in which digestion in ruminants is more beneficial to the animal than digestion in

non-ruminants? (04marks)

- Ruminants are able to digest cellulose due to presence of microorganism
- Ruminants have stomachs with very strong walls to pound food
- Microorganisms make proteins for ruminants from non-protein nitrogen compound like urea
- Microorganisms synthesize vitamins (K, C, B) that are utilized by ruminants
- Ruminants have efficient absorption due to very long intestines

(b) Describe two symptoms of bloat (02marks)

- Loss of appetite
- Distention of the abdomen,
- Feeling fullness, pressure, uncomfortable/distress
- Rectal protrusion.
- Difficulty breathing due to pressure on the diaphragm.
- The animal stands with its legs spread wide apart and its head extended forward
- The animal lies down and fails to stand up due to distress.

(c) Suggest two ways of

(i) preventing bloat (01mark)

- control the amount of succulent feeds and younger pastures fed to the animals
- exercising the animal
- avoid giving the animal cassava, excess grain and protein concentrate

(ii) treating bloat (01marks)

- carry out drench using any vegetable oil
- use stomach tube to release gas from the stomach
- drenching using anti-bloat drugs, cooking oil or beer to stop production of acids
- use of trocar or cannula to puncture the lumen to allow escape of gases
- Use of broom stick method i.e. wooden rod is inserted across the mouth to keep the mouth open to allow escape of gases from the rumen

(d) Explain the following terms as used in animal nutrition (02marks)

(i) digestibility

It is the proportion of the feed absorbed by the animal's body or the difference between the amount of feed ingested and amount of feces produced

(ii) production ratio

It is the amount of feed an animal need to produce products such as milk, meat, eggs and offspring in addition to the maintenance ration required for basic functions.

33. (a) State **two** types of cooling systems for internal combustion engines (02marks)

- water cooling system
- air cooling system

(b) State the uses of the following parts of the cooling system of a tractor. (04marks)

- (i) fan: blow air through the radiator to cool the coolant/engine
- (ii) thermostat: regulates temperature of the coolant
- (iii) impeller: distributes coolant throughout the cooling system
- (iv) radiator: provides large surface area that promote cooling of coolant.

(c) Give **four** reasons why water is popularly used as a coolant in internal combustion engines. (04marks)

- Has high specific heat capacity
- Has high boiling point
- Has low freezing point
- Has high specific heat of vaporization

34. (a) Outline **five** ways in which agricultural activities affect ecosystem. (05marks)

- Encroach animal and plants
- Use of fertilizers, pesticides and herbicides pollutes water bodies leading to death of fish
- Reduce biodiversity
- Causes deforestation and climate change
- Reclaim swamps lowering water tables
- Bush burning kills wild animals and plants
- Overgrazing causes soil erosion and silting of water bodies

(b) Give **five** characteristics of sustainable agriculture. (05marks)

Sustainable agriculture practice is described as one that is capable of maintains productivity and usefulness to society indefinitely. Its characteristics are

- Builds healthy soil and preventing erosion
- Minimizes air and water pollution
- Promotes biodiversity
- Manages and conserve water.
- Conserves energy and natural resources
- Produces safe products for the consumer
- Continuous education on sustainable use of land
- Innovation to reduce post-harvest losses
- Pest and disease control
- protect the environment from climate change
- Profit oriented and customer satisfaction
-

35. (a) Give the meaning of the following terms

(i) Profit and loss account (01marks)

It is a statement that summarizes the revenues, costs, expenses and profits/losses of a firm during specified period.

(ii) Gross margin (01mark)

Gross margin is the percentage of farms revenue that is retained after direct expenses such as labour and material have been subtracted.

(iii) Complete budget. (01marks)

It is a financial statement outlining the anticipated revenue and expenditure for the whole farm in the fourth coming financial period

(b) State **four** types of information required to make a farm budget. (04marks)

- **Scheduled expenditure**
- **Scheduled income**
- **Planned expansion**
- **Results from research station which show expected production of an enterprises.**
- **Data** on input-output relationship i.e. production functions

(c) Give **three** constraints farmers face in making farm budgets. (03marks)

- Lack of skill
- Illiteracy of among farmers in developing countries
- Lack of information on prices and sources of inputs
- Price instability
- Risks and uncertainties
- budget making is tedious
- limited funding sources
- Failure to follow the proposed budget

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Thanks

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