

Name:.....Signature:.....

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AGRICULTURE
August, 2024
2 Hrs : 30 Min



MEBU EXAMINATIONS CONSULT
Uganda Advanced Certificate of Education
Principles and Practices of Agriculture.

Paper 1

INSTRUCTIONS TO CANDIDATES.

*This paper consists of sections **A** and **B**. Answer **all** questions in both sections.
Write answers to section **A** in the boxes provided.
Write answers to section **B** in the spaces provided.*

SECTION A (30 MARKS)

Write the correct alternative in the box provided

1. Whip holes are necessary in foundation of farm wall fence in order to;

- A Minimize erosion
- B Maintain good drainage
- C Enable animals see each other
- D Reduce wall joints.

2. Which one of the following is not a source of energy to a ruminant animal?

- A Acetic acid
- B Propionic acid
- C Butyric acid
- D Ascorbic acid.

3. Which one of the following is an advantage of drip irrigation over sprinkler irrigation?

- A Covers a large area in a short time.
- B Can conveniently be used on delicate plants in nurseries.
- C Economizes water used as it's only applied to root zone of crop.
- D Requires delicate pipes as compared to those in sprinkler.

4. A lever with mechanical advantage 4 was used to lift wood up a building in one minute, if its
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velocity ratio was 6, what was its efficiency?

- A 41
B 67
C 33
D 150

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5. Substrate for oyster mushrooms growing fermented to;

- A Provide optimum PH for mushroom growth
- B Encourage early sprouting
- C Increase resistance of mushrooms to pest attack
- D Increase nutrient availability.

6. A dominant allele is that which can best express itself only in'

- A F₁ generation
B Homozygous stage
C Heterozygous stage
D Both heterozygous and homozygous stages.

7. Which of the following characteristics make wood a suitable construction material?

- | | | |
|------------------------|------------------|---|
| i) It is light | iii) | It is stronger per unit weight than metal |
| ii) It can last longer | iv) | It can be worked easily |
| | A (i) and (iv) | C) iii) and (i) |
| | B (ii) and (iii) | D) (ii) and (iv) |

8. Which one of the following is a non – cultural method of soil and water conservation?

- A. Crop rotation
- B. Minimum tillage
- C. Mulching
- D. Contour ploughing

3

9 The front axle of a four-wheel drive of a tractor has 120 teeth while that of the propeller shaft that drives it has 60 teeth. The velocity ratio of the wheel is;

- A. 4 8 2 3
B. C. D.

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10. The success levels of artificial insemination in cattle will be greatly determined by;

- A. Early detection of heat
- B. Regular mating of animals
- C. Proper disease control
- D. Use of speculum

☐

11. Humus contributes greatly to the buffering capacity of soil because

- A Has high content of bases
- B Holds excess soil nutrients
- C Cannot be broken down any further
- D Has high carbon exchange capacity

☐

12. Why do inseminator carry out thawing of semen before using in cows is?

- A To ease the insemination process
- B To active sperm cells
- C To prolong the life of sperm cells
- D To dilute the semen for more dozes to appear

☐

13. Which one the following damages is caused by piercing and sucking pests?

- A Destruction of growing points of the plants
- B Boring tunnels in plant stems
- C Introduction of disease - causing organisms into plants
- D Destruction of growing points of plants.

☐

14 A soil sample was weighed and was 80g. When it was dried in an oven its mass became 60g. What is the percentage composition of water in the soil?

- A. 20%
- B. 25%
- C. 30%
- D. 50%

☐

15. Draught technology has remained popular in Eastern Uganda because of;

- A. Absence of tse - tse fly infestation
- B. Adequate training given to farm animals
- C. Availability of cheap animals for ploughing
- D. Presence of light sandy soils

☐

16 Which one of the following may lead to the formation of hard pans in the soil?

- A. Failure to fallow land
- B. Using heavy farm machines
- C. Frequent movement of animals on farm lands
- D. Frequent ploughing at the same depth

17. Which one of the following is **not** a benefit of being a member of a cooperative society?

- A. Selling agricultural commodities at a fair price
- B. Accessing agricultural inputs at reduced prices
- C. Getting a higher profit due to low marketing costs
- C. Using the society as a collateral to access loans

18. One major advantage of rearing birds using deep litter system is that

- A. Reduce chances of vices like cannibalism and egg eating
- B. Food and water contamination with droppings are reduced
- C. There is little danger of worms and coccidiosis attacking poultry
- D. It can be adopted for all stages of growth of birds.

19. Which of the following conditions will lead to delayed maturity of Cereals;

- A. Deficiency of nitrogen in the soil
- B. Deficiency of phosphorus in the soil
- C. Excessive nitrogen in the soil
- D. Deficiency of potassium in the soil

20. The exit race of a cattle dip slant back-wards in order to;

- A) Allow animals move in a single file
- B) Clean the animal hooves
- C) Allow acaricides from animals flow back into the dip tank
- D) Slow down the speed of animal exit from the dip

21. Which one of the following strategies can improve the quantity of milk produced by a cow?

- A. Increasing the milking interval
- B. Allowing the calf to suckle before milking
- C. Cleaning the udder before milking.
- D. Restraining the animal well during milking

Samples	Colour of the soil	No. of millipedes	No. of earth worms
A	Brown	04	40
B	Black	07	70
C	Red	01	05

From the results given above, state the soil samples with;

a) Highest activity of living organisms (01 mark)

b) Lowest activity of living organisms. (01 mark)

b) Explain the reason why the level of millipedes and earthworm content in the three soil samples vary from one another. (04 marks)

c) State any four factors which can influence the level of living organism activity in the soil. (04 marks)

END

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b) Give **four** factors that influence the strength of concrete (04 marks)
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c) In what ways can mixed concrete be used on animal farm? (04 marks)
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35a) Outline the characteristic of a perfect market. (03 marks)
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b) Why should agricultural products should be advertised? (03 marks)
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c) Suggest the ways of improving marketing of farm products (04 marks)
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36a) Explain how a properly designed drainage race facilitates the dipping process. (06 marks)
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b) Explain the maintenance practices carried out on a dip. (04 marks)
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37a) An experiment was carried out to investigate the number of earth worm and millipedes. A summary of results can be shown as follows.

22. Calf weaning is done as a gradual process in order to
A) Allow calves feed on less milk.
B) Reserve more milk for sale.
C) Encourage introduction of other feeds to calves.
D) Reduce up-setting effects of weaning.

23. Which one of the following occurs to food when passed to the reticulum in a ruminant?
A It is ground into fine particles.
B It is mixed with cellulose from the rumen.
C Volatile fatty acids are squeezed out of the food.
D Coarse particles are separated from fine ones

24. Which one of the following represents hybridization in crop breeding?
A Crossing plants of a recessive trait with those of a dominant trait.
B Crossing high yielding crop varieties with disease resistant varieties.
C Multiplying plants with desirable qualities.
D Crossing a plant with a known genotype with that of unknown genotype.

25. The predators in the top trophic levels in a food chain are most severely affected by persistent pesticides because
A Their systems are highly sensitive to chemicals.
B They have rapid reproductive rates.
C They cannot store the pesticides in their tissue
D The pesticides become concentrated in their prey.

26 A likely response when the price of the product is set below the equilibrium is that
A. The price of the product continues to fall
B. Sellers hoard the product and raise the price of the commodity
C. Buyers become reluctant to buy the product
D. Product floods the market

27 Which one of the following activities can be done in a fish pond to ensure continuous supply of oxygen?

- A Removing water weeds from the pond
- B Making the pond floor to be smooth
- C Regular refilling of the pond with fresh water

D Planting grass on the pond walls

28 In formulation of rations for farm animals, the following factors will be considered except

- A Amount of feed given to each animal
- B Health status of the animal
- C Physiological state of the animal
- D Productivity level of the animal

29 Which one of the following is not a benefit of being a member of a cooperative society?

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30 Which one of the following is the main reason for adding molasses to materials being processed in silage?

- A It acts as an additive in the feed.
- B It is sweet so liked by the animal.
- C It increases carbohydrate level of the materials.
- D It increases the nitrogen content of silage.

SECTION: B (70 MARKS)

31a) Outline four benefits that ruminants derive from possession of rumen. (04 marks)

b) What conditions enable survival of microbes in the rumen? (04 marks)

c) State two roles of Omasum in food digestion of ruminant animals (02 marks)

32a) Outline four functions of worker bees.

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b) Define the following terms as used in bee production. (03 marks)

(i) Swarming

(ii) Absconding

(iii) Requeening

c) Suggest the conditions that may encourage bees to enter a new hive (03 marks)

33a) What is meant by germination? (02 marks)

b) Describe the process that takes place during germination of planted seed. (04 marks)

c) What conditions may reduce germination efficiency of planted seeds. (04 mark)

34a) Explain the meaning of the following terms? (02 marks)

Lean concrete

Strong Concrete

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