

THE UNITED REPUBLIC OF TANZANIA  
NATIONAL EXAMINATIONS COUNCIL  
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION 1994

034

AGRICULTURAL SCIENCE

TIME: 2 ½ Hours.

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INSTRUCTIONS

1. This paper consists of 35 questions in two sections, A and B.
2. Answer ALL questions.
3. Read the instructions under each section carefully.
4. You are advised to spend 30 minutes on section A and 120 minutes on section B.
5. All answers must be written in the answer book provided.
6. Write your centre and index number as indicated on the right hand corner of every page of your answer book.

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SECTION A

Nature of questions	=	multiple choice
Marks allocated	=	20 marks (20%)
Time allocated	=	30 minutes.

Answer ALL questions in this section. Under each of the questions below, only one of the four answers provided is the most correct. Write down the letter bearing the most correct answer in the answer book provided.

1. The following are among the major preharvest principles of crop production EXCEPT
  - A Seed selection
  - B Spacing and thinning
  - C Winnowing
  - D Field pests control
2. A free market in agricultural production may arise as a result of
  - A monopoly
  - B pure competition
  - C monopsory
  - D oligopoly.
3. A good example of a compound fertilizer is one of the following
  - A A.S.N.
  - B C.A.N.
  - C N.P.K.
  - D T.S.P.
4. All of the following are varieties of oranges EXCEPT
  - A Emperor
  - B Washington navel
  - C Valencia
  - D Hamlin.
5. The following groups of farm animals are ruminants EXCEPT
  - A Donkey, duck, rabbit
  - B Cattle, pig, turkey
  - C Sheep, goat, water buffalo
  - D Rabbit, pig, duck
6. When oxen are used to pull a plough or a cart, a harness has to be fixed on them. Such a harness is called
  - A Skey
  - B Yoke
  - C Tool bar
  - D Drawbar.

7. Which method would you use to control Blossom end rot on tomatoes in the school garden?
  - A Planting resistant varieties
  - B Fumigating the soil
  - C Regular watering
  - D Applying copper fungicides.
8. All of the following are heavy breeds of poultry EXCEPT
  - A White leghorn
  - B Light sussex
  - C New Hampshire
  - D Rhode Island Red.
9. If the annual depreciation of a nine year old agricultural tool is shs.50/= while its salvage value is 50/=-, what was the original cost of the tool?
  - A 100
  - B 450
  - C 500
  - D 550
10. The major portion of the soil by volume is occupied by
  - A Water
  - B Air
  - C Organic matter
  - D Mineral matter.
11. All of the following are varieties of tomatoes EXCEPT
  - A Money maker
  - B Early long purple
  - C Early beauty
  - D Marglobe.
12. An effective vaccination programme is suitable for controlling the following livestock diseases
  - A Foot and mouth disease and rinderpest
  - B Trypanosomiasis and red water
  - C Rinderpest and East Coast Fever
  - D Foot and mouth disease and mastitis.
13. When drenching a cow, which of the following farm structures is most suitable for restricting the movement of the cow in every direction?
  - A Prenching crate
  - B Prenching race
  - C Crush
  - D Service crate

14. The practice of continuously growing one annual crop after the same type of crop has been harvested is called:  
A continuous cropping  
B monoculture  
C relay cropping  
D monocropping
15. Which of the following terms describes the practice of feeding ewes on better pasture or forage for 2 to 3 weeks before mating?  
A Docking  
B Flushing  
C Steaming up  
D Raddling.
16. Which one of the following groups of drugs is MOST SUITABLE for eradicating parasitic, bacterial and fungal diseases in a fish pond?  
A Amprol, zioline, sulphonamide  
B Bromex, zioline, gamma BHC  
C Malachite-green, copper sulphate solution, diptrex  
D Copper sulphate solution, bromex, gamatox.
17. Which of the following pesticides is most suitable for controlling the larger grain borer in a grain store?  
A Permethrin  
B Kynakil  
C Phostoxin  
D Warfarin
18. In order to promote growth and reproduction of fresh water fish in a pond it is advisable to do all of the following EXCEPT  
A Apply lime in the pond  
B Apply compost in the pond  
C Apply local beer wastes in the pond  
D Apply sulphate of ammonia in the pond frequently.
19. Which of the following is LEAST influenced by forests?  
A Erosion  
B Leeward rains  
C Drainage  
D Catchment areas
20. Which of the following is non-pressure method of applying preservatives on wood?  
A Lowny process  
B Reeping process  
C Diffusion process  
D Bettle process.

SECTION B

Nature of questions = short answer type  
Marks allocated = 80 marks (80%)  
Time allocated = 120 minutes.

Answer all questions. Credit will be given for answers which are precise, brief and to the point.

21. (a) Briefly describe what you understand by the term mulching.  
(b) State any four advantages of applying mulch in the field after you have transplanted tea or coffee seedlings.  
(c) State any four problems which can be expected to occur in a tea/coffee field which is mulched.
22. Imagine that your school projects committee decides that onions, among other vegetable crops, be raised in the school garden for generating income. Using the headings given below, describe the activities to be undertaken in raising the onion crop.  
(a) Land preparation  
(b) Weeding  
(c) Fertilizer application  
(d) Pest control
23. What are the uses of each of the following survey instruments?  
(a) Tripod level  
(b) Levelling staff  
(c) Odometer  
(d) Ranging pole  
(e) Compass
24. Indicated in the first column of the table shown below are five breeding stages in pig production. Complete the table by:  
(a) filling in column two the duration of each breeding stage in days/weeks or months  
(b) filling in column three the stages from which each breeding stage begins (e.g. from mating/furrowing/weaning).

Breeding stage	Time duration (Days/weeks/months)	Stage which each breeding stage begins
Mating		from _____
Gestation period		from _____
Furrowing		from _____
Weaning		from _____
Culling and selection		from _____

25. (a) List any six differences between the use of animal power (oxen) and tractor power on the farm.  
(b) A team of two oxen costs a farmer shs. 10,000/= and he expects to use oxen for seven years. At the end of eight years he will sell the oxen for a total of shs. 6,000/=. How much will it cost him to replace the oxen? Show clearly how you get your answer.
26. Assume that you are going to do a soil survey on your farm. List any ten apparatus/tools that you will need in order to carry out the soil survey work thoroughly.
27. (a) Define the term crop pest.  
(b) Mention any our broad categories of crop pests.  
(c) Describe any FOUR methods of controlling crop pests in the field.
28. Assume that you are about to establish a vegetable garden in a rural area. List any ten (10) tools which you will need to buy in order to facilitate good crop husbandry in your garden.
29. (a) List any FOUR breeds of dairy cattle.  
(b) Briefly explain how any three named factors affect dairy production in Tanzania.
30. (a) What do you understand by the term WEED as it is used in crop production.  
(b) Briefly describe any four mechanical methods of weed control.
31. Trypanosomiasis, foot and mouth disease, rinderpest, East Coast Fever and New Castle Disease are important diseases of livestock in Tanzania.  
(a) State the causative agent of each of the five diseases.  
(b) State one method of controlling each of the five diseases.
32. Briefly explain what you understand by each of the following terms:  
(a) Demand schedule  
(b) Fixed costs  
(c) Law of comparative advantage  
(d) Pastral budget  
(e) Wholesale price.
33. (a) Define a plant disease.  
(b) State any four causative agents of plant diseases.  
(c) Describe the visible signs (symptoms) of each of the following plant disease.  
(i) Rusts  
(ii) Smuts
34. (a) List any two breeds of each of the following types of goats:  
(i) Dairy goats  
(ii) Meat goats  
(iii) Hair goats.  
(b) Explain what is meant by each of the following terms as they are used in goat husbandry.  
(i) Topping  
(ii) Raddling

35. The curves below show hypothetical production functions of an agricultural product. Study the curves and answer the following questions.
- State the names of the curves labelled OA, OB and OC.
  - Explain the relationship between one curve and another.
  - In which region is production of the agricultural product the most profitable?

