

TE MOCK 2019

AGRICULTURE (MARKING SCHEME)

SECTION A (30 MARKS)

Answer all the questions in this section in the spaces provided.

1. A teacher is preparing a lesson plan on a given topic.

(a).State four characteristics that the introduction of the lesson should have (2 marks)

- Should motivate the learner
- Should create a linkage between the lesson being planned and the previous lesson/knowledge
- Should indicate the objectives/contents of the lesson
- Should indicate the importance of the topic
- Should indicate the method/activities to be carried out (**First 4 X 1= 4 marks**)

(b).The teacher plans to use teaching aids for the lesson. State any three qualities that the teaching aids should have (3 marks)

- Relevance to instructional objectives/content
- Should be simple for the learner to understand/should inspire
- Appeal to senses of the learner/attractive
- Should be flexible to changes in the learning environment
- Ability to be seen/clear
- Should contain enough information/precise (**First 3 X 1= 3 marks**)

(c).If the teacher has decided to use questioning technique during the conclusion of the lesson, outline the procedure that the teacher should follow (2 marks)

- Ask pupils to close their books
- Teacher to clear the blackboard
- Ask each question at a time
- Pause to give pupils time to think
- Call on one pupil /point at one pupil
- Listen to the pupils' answers
- Emphasise the correct answers (**Any correct 4 x ½ = 2 marks**)

2. A teacher plans to conduct a practical on hand planting of beans

(a).Identify the activities the teacher should involve the pupils in during the lesson(2 marks)

- Measure and mark the spacing between the rows
- Measure and mark the string for inter-row spaces
- Dig the holes to the required depth/dig furrows
- Measure and place the right quantity of fertilisers in each hole
- Mix fertilisers/manure with soil
- Place the right number of seeds in holes/along furrows
- Cover the seeds with soil (Any correct 4 x ½ = 2 marks)

(b)List the teaching resources which would be required for this lesson. (2 marks)

- Jembe
- Containers
- (Phosphatic) fertilisers/manure
- Pegs
- Strings
- Rulers/tape measures

- Man of measuring fertilisers e.g. spoon
- Seeds
- Markers for strings (**Any correct $4 \times \frac{1}{2} = 2$ marks**)

(c).Sate how the teacher would organize the pupils for the practical (2 marks)

- Divide the class into manageable groups
- Assign group leaders
- Supervision
- Assign tasks to be performed during the lesson
- Provide materials (**Any correct $4 \times \frac{1}{2} = 2$ marks**)

3. State six desirable practices a teacher should adopt when using the chalkboard (3 marks)

- Large/ bold writing that is legible from every part of the classroom
- The teacher should stand aside when explaining a point on the board
- The teacher should choose/;[.p appropriate colours of chalk to use
- The teacher should write horizontally
- The teacher should start with a clean board/clean the board
- The teacher should use the board in a logical sequence/divide the board in portions and start from left to right
- Use appropriate cleaning materials to clean the board
- Use a pointer when necessary (**First $3 \times 1 = 3$ marks**)

4. (a).A teacher is planning to teach the topic fish farming to standard pupils

(i).State any three factors the teacher should consider when preparing a scheme of work for this unit (3 marks)

- Objectives to be achieved
- Teaching methods to be employed
- Pupils' and teacher's activities
- Teaching materials and facilities
- Topics and subtopics into which the units will be subdivided
- Time available to teach the unit
- Number of pupils
- Assessment/evaluation method (**First $3 \times 1 = 3$ marks**)

(ii).List six subtopics into which this unit may be subdivided (3 marks)

- Sources of fish/fingerlings/stocking of fish pond
- Siting fish pond
- Constructing fish pond
- Type of fish to be kept
- Fish feeding
- Problems of fish farming
- Harvesting fish
- Marketing fish
- Importance of fish farming
- Preserving fish (**First $6 \times \frac{1}{2} = 3$ marks**)

(b). Give four advantages of using group discussion method of teaching (4 marks)

- involves the entire class /encourages participation by the whole class
- stimulates critical thinking
- allows learners the opportunity to arrive at a group consensus/it is democratic

- improves self-expression /even shy ones are enticed to speak/self confidence
 - promotes leadership qualities
- (First 4 X 1= 4 marks)**

5. (a).Give two advantages and two disadvantages of using photographs as teaching aids in science (4 marks)

Advantages

- easy to use i.e. do not require sophisticated equipment
- easy to take/make photographs
- can show minute details of objects
- available from many sources e.g. books
- easy to store **(First 2 X 1= 2 marks)**

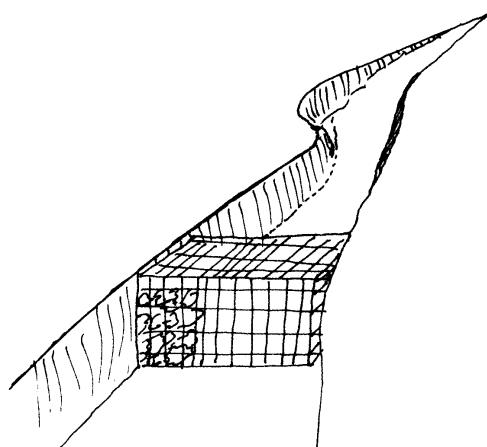
Disadvantages

- may be too small
- show two dimensions only
- do not show motion **(First 2 X 1= 2 marks)**
- costly/expensive

SECTION B (40 MARKS)

Answer all the questions in this section in the spaces provided.

6. The illustration below shows a structure used for controlling soil erosion. Study it carefully and answer the questions that follow:



(a) Identify the structure

(1mark)

- Gabion/porous dam

(b) Explain two ways in which the structure helps to control soil erosion.

(2marks)

- Slows down the spread of water thus reducing its erosive power.
- It traps the detached soil particles.

7. State two ways in which agriculture contributes directly to the development of industries (2 marks)

- Provide raw materials used in industries
- Provide market for industrial goods
- Source of income to start industries **(First 2 X 1= 2 marks)**

8. Give two condition under which the opportunity cost is zero in a farming enterprise (2 marks)

- If there is no choice
- When resources are free / unlimited
- Gifts/ donation (**First 2 X 1= 2 marks**)

9. Give three reasons for timely weed control in crop production (3 marks)

- Prevents weeds from establishing in the fields
- Reduce the cost of production
- Reduce multiplication and spread of the weeds
- Reduce spread of pests and diseases for which weeds acts as alternative hosts
- Reduce competition between weeds and the crop
- Avoid contamination of crop with weed seeds
- Prevent injury to the farmer/ livestock (**First 3 X 1= 3 marks**)

10. Give three ways of improving farm labour productivity (3 marks)

- Proper training of the labour force
- Mechanizing farm operations
- Proper supervision
- Giving incentives to motivate the workers
- Assigning specific tasks to the labour force (**First 3 X 1= 3 marks**)

11. State any three desirable characteristics that should be considered when selecting a heifer for milk production (3 marks)

- Level of production
- Health/growth rate/age
- Fertility rate/mothering ability
- Body conformation
- Disease resistance
- Temperament / adaptability (**First 3 X 1= 3 marks**)

12. State four factors to consider when siting farm structures. (4 marks)

- Location of the homestead.
- Relationship between structures.
- Accessibility
- Farmer's taste and preference.
- Security drainage
- Proximity to amenities.
- Direction of the prevailing wind
- Topography of an area. (**First 4X 1= 4 marks**)

13. Give four factors that influence the type of irrigation to be used in a farm (4marks)

- Topography
- Soil type
- Amount of water available
- Technology available
- Distance of the source of water to the field
- Capital available
- Hills available
- Climate factors of the area (**First 4X 1= 4 marks**)

14. State four disadvantages of Natural method of mating (4 marks)

- High chances of in breeding or in breeding is not controlled.
- High chances of breeding disease transmission ie brucellosis or parasites such as

Trichomonas spp

- Males require extra pasture to feed on.
- Large males can injure small females.
- A lot of semen is wasted as single ejaculation produce semen that can serve several cows.
- It is cumbersome and expensive to transport a bull to hot areas to serve cows.

(First 4X 1= 4 marks)

15. A school has allocated a half a hectare of land for agriculture demonstration plots and a crop museum

(a).Give three factors should the teacher of agriculture consider when planning for the use of the land? (3 marks)

- The syllabus requirements/teaching resources needed
- Number of classes to be carried out
- Security of the activities and projects in the garden
- Community farming activities
- Availability of capital
- Environmental factors e.g. climate, soil
- Market **(First 3 X 1= 3 marks)**

(b).State three benefits of establishing a crop museum (3 marks)

- Source of teaching materials/aids
- Pupils use a crop museum to observe rare crops and their growth
- Demonstration can be carried out in the museum
- It saves time and money for travelling to far off places in search of rare crops

(First 3 X 1= 3 marks)

16. Give three reasons for keeping livestock healthy (3 marks)

- to prolong production life of the animal
- to obtain high quality products which fetch good price
- to grow fast and reach maturity early
- avoid spread of infectious diseases /parasites to other animals and human beings
- reduce cost of production
- to obtain high yields
- to produce safe products for consumption **(First 3 X 1= 3 marks)**

17. Name the part harvested for each of the following crops: (3 marks)

- (a) Onions** - bulb/ leaves
- (b) Carrots** - roots
- (c) Coffee** - berry/ cherries/ fruits **(1 x 3 = 3 marks)**

SECTION C (40 MARKS)

Answer any three questions from this section in the spaces provided

18. Explain the factors that influence seed rates in crop production (10 marks)

- Intended use of the crop eg fodder maize requiring high seed rate than grain maize
- Germination percentage – high seed rate to require for seeds with low germination percentage
- Methods of planting- broad casting requires high seed rate than raw planting
- Number of seeds per hole – two or more seeds per hole requires more seed rate than one seed per hole
- Soil fertility – poor/ infertile soil requires low seed rate because crops are widely spaced compared to fertile soils
- Growth characteristic of the crop – tall/ tillers/ indeterminate varieties requires low seed rate compared to short/ less tillering / determinate varieties
- Spacing- high seed rate is required to closer spacing than wider spacing
- Seed purity –impure seeds containing chaff and other foreign materials will lead to high seed rate compared to pure seeds
- Pure/ mixed stand- high seed rate for pure stand, low seed rate for mixed stand

5 x statements x 1 mark= 5 marks

5 x explanations x 1 mark= 5 marks

Total =10 marks

19. (a).State the reasons for using farm yard manure instead of the straight fertilizer (5 marks)

- F.Y.M improve soil structure
- Improve water holding capacity
- Supplies a variety of plant nutrients
- Has a longer residue effect
- Promotes microbial activities in the soil
- It locally/easily available
- Modulates the soil PH
- Increases cation exchange capacity (**Any 5 x 1=5 marks**)

(b). State the importance of using mulch in crop production (5 marks)

- Conservers soil moisture
- Modifies soil temperature
- Control soil erosion
- Controls weeds by suppressing their growth
- On decomposing adds materials to the soil
- On decomposition increases activities of the soil organisms (**Any 5 x 1=5 marks**)

20. Name the appropriate hand tools which can be used to construct a wooden rabbit hutch, and give the use of each tool named (10 marks)

- hand saw/rip saw/cross-cut saw/tenon saw for cutting wood/timber into appropriate sizes
- chisel for cutting grooves/joinery work
- plane/rasp/wood file for smoothing surfaces of work
- tape measure/rule for measuring appropriate lengths of timber
- combination square/square/try square for measuring/layout of angles
- marking gauge/scriber/mortise gauge for marking lines on timber after measuring
- G clamp for holding work securely during specific operations
- hand drill/brace and bit for boring holes on wood
- screw driver for driving in/out screw nails
- claw hammer for driving in/out nails
- mallet for hitting the chisel during work
- spoke shave used to make curved surfaces on wood smooth

10 names x 1/2= 5 marks

10 uses x 1/2= 5 marks

Total =10 marks

21. Describe the body conformation features of a dairy heifer.(5 marks)

- Straight topline.
- Have large and well developed udder with large teats.
- Have large stomach which makes them heavy feeders
- Have prominent milk veins.
- Have less flesh on their bodies/lean bodies.
- Have well set hind quarters to allow room for large udders.
- Prominent pin bones.
- Wedge shaped.
- Long thin neck. (**Any 5 x 1=5 marks**)

(b). Disadvantages of live fences (5 marks)

- May take long to establish into an effective fence.
- Not effective in sub-dividing land into paddocks/occupies a large space.
- May harbour pests.
- May create hiding places for thieves, wild animals and vermin.
- May be labour demanding to trim and infill regularly.
- May have shading effects on crops/competition for nutrients, moisture.
- May leave gaps which allow animals and thieves to pass through.
- Some may injure both livestock and the farmer. (**Any 5 x 1=5 marks**)