

**G9 ECZ
AGRICULTURAL
SCIENCE
2020 SPECIMEN
PAPER 1
SOLUTIONS**

Grade 9 ECZ Agricultural Science 2020 Specimen Paper 1 (501/1)

2 hours 30 minutes | Section A: 20 MCQ (20 marks) | Section B: 8 structured questions x 10 marks (80 marks)

question paper appears first -- worked answers follow. Pages were found relocated in the scan (last 3 pages moved to the front); no content was lost

- (d) Name **two** components of soil other than water. [2]
- (e) Which soil fraction is responsible for high water holding capacity of soil? [1]

[Total marks: 10]

3 CROP PRODUCTION

- (a) (i) State **two** factors that make a site suitable for vegetable production. [2]
- (ii) What is the importance of handling vegetables correctly for marketing? [1]
- (b) Explain the importance of legumes in crop rotation. [1]
- (c) Give **three** ways in which weeds reduce yields of crops. [3]
- (d) What pest causes the staining of the lint and bolls of cotton? [1]
- (e) Why are farmers advised to destroy cotton plants soon after harvesting? [1]
- (f) Why do farmers dry maize to 10 – 12% moisture content before storage? [1]

[Total marks: 10]

4 FORESTRY AND CONSERVATION FARMING

- (a) (i) Give **two** sources of organic manure. [2]
- (ii) State **three** ways in which trees help to prevent soil erosion. [3]
- (b) How can a farmer make an organic pesticide using onion, green paper, a clove of garlic and soap? [2]
- (c) Explain the effect of mono-cropping on crop yields. [1]
- (d) Which **two** methods do farmers usually use to sow seeds under conservation farming? [2]

[Total marks: 10]

5 LIVESTOCK PRODUCTION

- (a) State the nutritional value of cattle. [1]
- (b) How can a farmer control black quarter disease in cattle? [3]
- (c) Why are some cows on certain farms unable to produce young? [2]
- (d) (i) Explain how castration is carried out on a young animal using burdizzo pincers. [2]
- (ii) Why is it important to carry out castration before calves are aged **three** months or before weaning? [2]

[Total marks: 10]

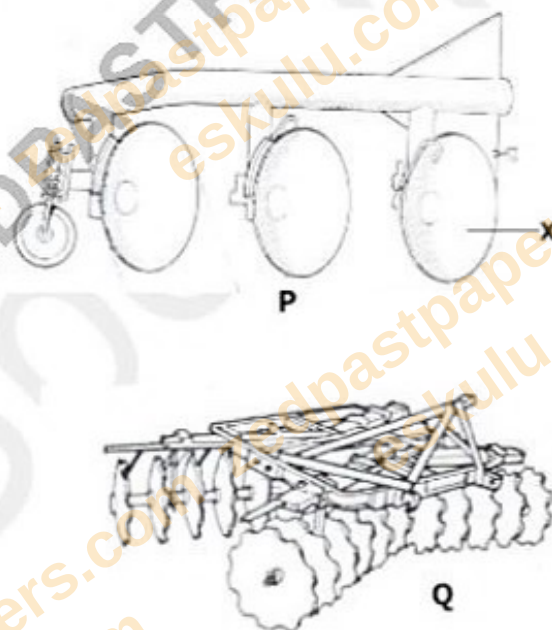
6 FARM STRUCTURES

- (a) (i) What is a crush pen? [1]
- (ii) Give **four** important operations that are easily carried out in a crush pen. [4]
- (iii) How does the crush pen make it easier to handle cattle? [1]
- (b) What happens to cattle as they pass through the following parts of a dip tank:
- (i) foot bath, [1]
- (ii) dip bath, [1]
- (iii) drainage race? [3]
- (c) State why cattle are regularly sprayed. [1]

[Total marks: 10]

7 FARM MACHINERY

- (a) The diagrams below show two tractor drawn implements. Study the diagrams carefully.



- (i) Identify the implements **P** and **Q** shown above. [2]
- (ii) State the functions of each of the implements **P** and **Q**. [2]
- (iii) How can the part labelled **X** be:
- prevented from rusting,
 - kept sharp?
- [2]

zedpastpapers.com

- (b) (i) Which part of a hand sprayer is moved in order for the spray to be released? [1]
- (ii) What precaution can be taken when spraying pesticides using a hand sprayer on a windy day? [1]
- (iii) What are the functions of the following in a hand sprayer;
- 1 Tank,
 - 2 Pump?

[2]

[Total marks: 10]

8 FARM MANAGEMENT

A Grade 9 learner carried out a chicken project in Agricultural Science. The learner made the following transactions:

A Purchases

- 1 2nd February 2019 bought 10 bags of starter and finisher mash at K200.00 per bag and chick formula at K50.00.
- 2 14th February 2019 bought 100 chicks at K5.00 each.

B Sales

- 1 28th March 2019 sold 94 chickens at K50.00 each and sold 20 bags of chicken manure at K25.00 each.

Enter the information on purchases and sales in the appropriate columns in the table provided.

[5]

Calculate the;

- (a) income,
- (b) expenditure,
- (c) profit or loss of the project.

[2]

[3]

[Total marks: 10]

zedpastpapers.com



EXAMINATIONS COUNCIL OF ZAMBIA

JUNIOR SECONDARY SCHOOL LEAVING EXAMINATION (GRADE 9) – 2020

Agricultural Science 501/1

Paper 1 Specimen

(INTERNAL & EXTERNAL CANDIDATES)

Time: 2 hours 30 minutes

Marks: 100

Instructions to Candidates

- 1 Pull out the Answer Booklet from the question paper.
- 2 Write your name, examination number, school/centre name and code on the Answer Booklet.
- 3 Answer **all** the questions.
- 4 There are **two** sections in this paper, **Section A** and **B**. In **section A**, four suggested answers are given **A, B, C** and **D**. Choose the best one and show it on the Answer Grid by marking it with a cross (**X**).

Example if the answer is D

A	B	C	D
---	---	---	---

- 5 For **Section B**, write your answers in the spaces provided in the Answer Booklet.
- 6 Hand in the Answer Booklet and the rest of the question paper separately.

zedpastpapers.com

Information for Candidates

Cell phones are not allowed in the examination room.

Calculators are not allowed in the examination room.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

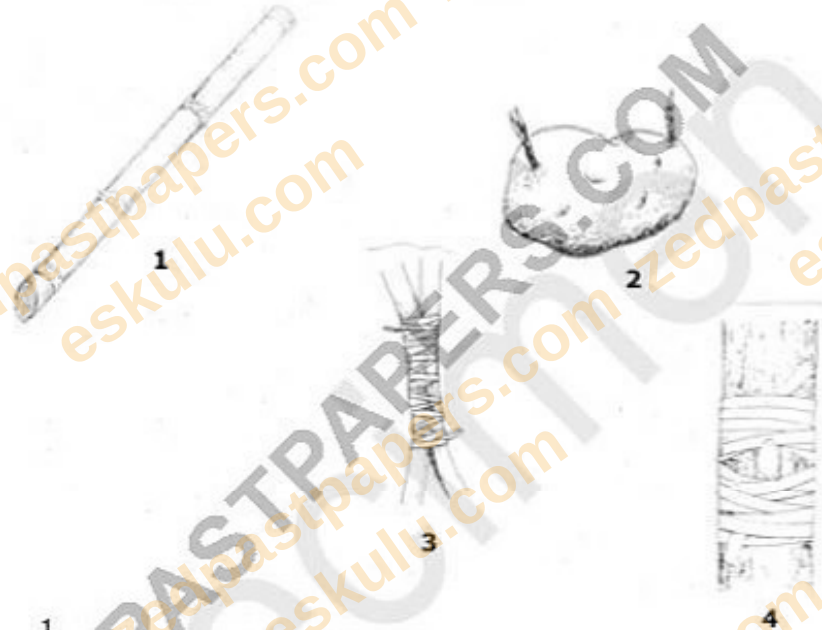
Section A [20 marks]

- 1** Which of the following is a major agricultural activity in Zambia?
 - A** Bee Keeping
 - B** Livestock production
 - C** Mushroom growing
 - D** Textile
- 2** Weathering is the breaking down of rocks to form...
 - A** all components of the soil.
 - B** cracks which allow air into the soil.
 - C** inorganic particles of soil.
 - D** organic matter of soil.
- 3** Cassava is propagated from ...
 - A** cuttings.
 - B** runners.
 - C** seeds.
 - D** tubers.
- 4** What is the best time to plant groundnuts?
 - A** At the beginning of the rains.
 - B** Before the end of the rain season.
 - C** During the period of heavy rains.
 - D** One month before the onset of the rains.
- 5** What is the use of an inventory?
 - A** Ensures that all the accounts of the farm are maintained in a single book.
 - B** Ensures that all the assets of the farm are accounted for.
 - C** Basis for calculating yields of farm enterprise.
 - D** Basis for calculating profit of the farm business.
- 6** Which of the following hand tools is used to break soil clods after digging a seed bed for cabbages?
 - A** Garden fork
 - B** Hoe
 - C** Rake
 - D** Spade

7 Green manure is made by ploughing ...

- A a growing crop into the soil.
- B animal waste into the soil.
- C compost manure into the soil.
- D crop residue into the soil.

8 Which of the materials in the diagrams below is a common planting material used to grow oranges in Zambia?



- A 1
- B 2
- C 3
- D 4

9 How can high soil acidity be corrected?

- A Aerating the soil
- B Adding agricultural lime
- C Adding manure
- D Applying inorganic fertiliser

10 Which of the following is the correct meaning of conservation tillage?

- A Method where crop residues are preserved.
- B Planting immediately after it has rained.
- C Preparation of soil for early planting.
- D The process of removing tree-stumps and bushes.

zedpastpapers.com

11 Which of the following implements is used for breaking up hard pans?

- A** Disc harrow
- B** Mould board plough
- C** Rotary cultivator
- D** Subsoiler

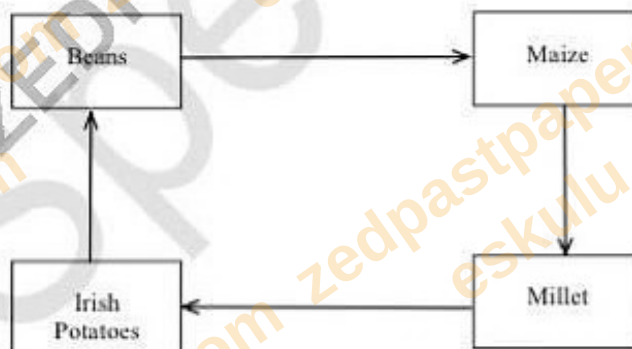
12 The recommended amount of fertiliser for groundnuts is 250kg/ha of single superphosphate.
How many 50kg bags are required for 5 hectares?

- A** 5 bags
- B** 10 bags
- C** 25 bags
- D** 50 bags

13 What behaviour of chicks acts as warning to the farmer about low temperature in the brooder house?

- A** Crowding under the lamp
- B** Opening of beaks and wings
- C** Pecking each other's feathers
- D** Scattering all over the brooder

14 Study the diagram of a crop rotation below carefully.



Which of the crops in the rotation above is wrongly placed?

- A** Beans
- B** Irish potatoes
- C** Maize
- D** Millet

15 Anaemia in piglets is prevented by giving them ...

- A** a ration rich in proteins.
- B** an injection of iron supplement.
- C** some mineral licks.
- D** vitamin supplements.

16 The main objective of Agribusiness is to ...

- A** create many jobs.
- B** feed the nation.
- C** make maximum profit.
- D** obtain foreign currency.

17 A farmer constructed a farrowing pen as shown in the diagram below.



The part labelled **T** was included to protect piglets from being ...

- A** attacked by wild animals.
- B** rolled over by the sow.
- C** soaked by heavy rains.
- D** stolen by thieves.

18 One of the reasons for dehorning calves is to make them ...

- A** easier to handle.
- B** grow very fast.
- C** more suited for work.
- D** produce quality product.

zedpastpapers.com

19 A sow that shows signs of heat after the 19th to the 23rd day after service should be ...

- A** culled and sold.
- B** mated again.
- C** moved to a farrowing pen.
- D** tested for pregnancy.

20 Farmers practice mixed farming to ...

- A** prevent crops from being attacked by pests.
- B** ensure that crops and livestock benefit from each other.
- C** prevent any losses on both enterprises.
- D** produce all cultural products on sale.

zedpastpapers.com

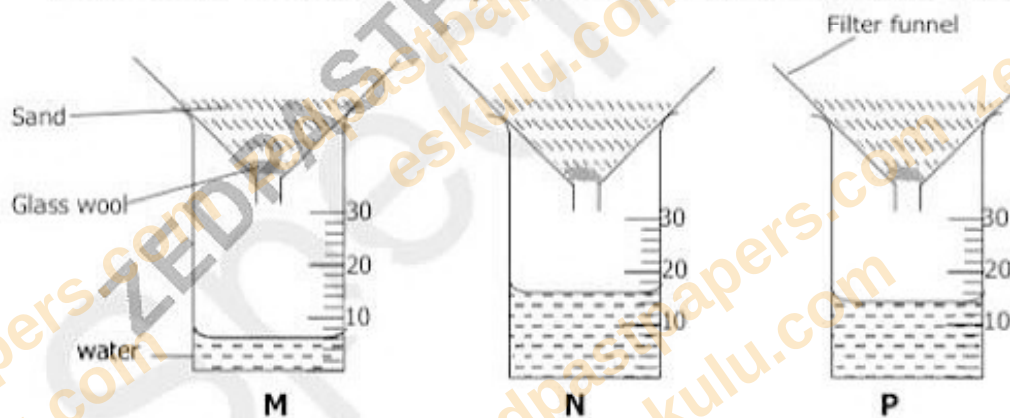
SECTION B**[80 marks]****1 AGRICULTURE IN ZAMBIA**

- (a) Give **three** reasons why most commercial farming takes place along the line of rail. [3]
- (b) Explain the importance of good roads in the development of agriculture. [3]
- (c) Why are farmers advised to diversify their crop production? [2]
- (d) Name one government agency that assists farmers in the marketing of agricultural produce. [1]
- (e) Which Ministry in Zambia provides agricultural extension services to farmers? [1]

[Total marks: 10]**2 SOIL SCIENCE**

A learner carried out an experiment on water holding capacity of soils.

The learner placed 10g of different samples of soil into the funnels and poured 20cm³ of water over each funnel. The result was as shown below.



- (a) (i) How much water was retained in **M** and **P**? [2]
- (ii) Which of the soils has the best water holding capacity? [1]
- (iii) What should a farmer do to the soil with water holding capacity such as sample **N**? [1]
- (b) State the importance of soil water to plants. [1]
- (c) Which of the soil samples would have;
- (i) high nutrient content available to crops, [1]
- (ii) high acidity? [2]

zedpastpapers.com

Question 1. Which of the following is a major agricultural activity in Zambia? (A) Bee Keeping (B) Livestock production (C) Mushroom growing (D) Textile

Answer: B -- Livestock production is a major agricultural activity practiced throughout Zambia.

Question 2. Weathering is the breaking down of rocks to form... (A) all components of the soil (B) cracks which allow air into the soil (C) inorganic particles of soil (D) organic matter of soil

Answer: C -- weathering physically and chemically breaks down parent rock into the inorganic (mineral) particles of soil.

Question 3. Cassava is propagated from... (A) cuttings (B) runners (C) seeds (D) tubers

Answer: A -- cassava is propagated from stem cuttings planted directly into the ground.

Question 4. What is the best time to plant groundnuts? (A) At the beginning of the rains (B) Before the end of the rain season (C) During the period of heavy rains (D) One month before the onset of the rains

Answer: A -- groundnuts are best planted at the beginning of the rains so they get the full rain season to mature.

Question 5. What is the use of an inventory? (A) Ensures that all the accounts of the farm are maintained in a single book (B) Ensures that all the assets of the farm are accounted for (C) Basis for calculating yields of farm enterprise (D) Basis for calculating profit of the farm business

Answer: B -- an inventory is a record ensuring all the farm's assets are accounted for.

Question 6. Which of the following hand tools is used to break soil clods after digging a seed bed for cabbages? (A) Garden fork (B) Hoe (C) Rake (D) Spade

Answer: C -- a rake is used to break down soil clods and level a seedbed after digging.

Question 7. Green manure is made by ploughing... (A) a growing crop into the soil (B) animal waste into the soil (C) compost manure into the soil (D) crop residue into the soil

Answer: A -- green manure is produced by ploughing a growing (usually leguminous) crop directly into the soil while still green.

Question 8. A diagram shows four planting materials (1: a stem cutting, 2: a seed/fruit, 3: a section of stem wrapped/bound at a join, 4: a wrapped root section). Which of the materials is a common planting material used to grow oranges in Zambia? (A) 1 (B) 2 (C) 3 (D) 4

Answer: C (item 3) -- judgment call: the wrapped join shown is a bud/graft union, and oranges (citrus) in Zambia are commonly propagated by budding/grafting onto rootstock rather than by seed or ordinary cuttings.

Question 9. How can high soil acidity be corrected? (A) Aerating the soil (B) Adding agricultural lime (C) Adding manure (D) Applying inorganic fertiliser

Answer: B -- agricultural lime neutralises soil acidity by raising the soil pH.

Question 10. Which of the following is the correct meaning of conservation tillage? (A) Method where crop residues are preserved (B) Planting immediately after it has rained (C) Preparation of soil for early planting (D) The process of removing tree-stumps and bushes

Answer: A -- conservation tillage is a method of soil preparation where crop residues are preserved/retained on the field rather than removed or burnt.

Question 11. Which of the following implements is used for breaking up hard pans? (A) Disc harrow (B) Mould board plough (C) Rotary cultivator (D) Subsoiler

Answer: D -- a subsoiler has a deep, narrow tine designed specifically to break up compacted hard pans below normal ploughing depth.

Question 12. The recommended amount of fertiliser for groundnuts is 250kg/ha of single superphosphate. How many 50kg bags are required for 5 hectares? (A) 5 bags (B) 10 bags (C) 25 bags (D) 50 bags

Answer: C -- $250\text{kg/ha} / 50\text{kg per bag} = 5\text{ bags per hectare}$; $5\text{ bags} \times 5\text{ hectares} = 25\text{ bags}$.

Question 13. What behaviour of chicks acts as a warning to the farmer about low temperature in the brooder house? (A) Crowding under the lamp (B) Opening of beaks and wings (C) Pecking each other's feathers (D) Scattering all over the brooder

Answer: A -- chicks crowd together under the heat lamp when they are too cold, warning the farmer to raise the brooder temperature.

Question 14. A diagram shows a crop rotation cycle: Beans -> Maize -> Millet -> Irish Potatoes -> (back to Beans). Which of the crops in the rotation above is wrongly placed? (A) Beans (B) Irish potatoes (C) Maize (D) Millet

Answer: D -- Millet. A sound rotation alternates a nitrogen-fixing legume (beans) with heavy-feeding cereals/tubers; having Maize directly followed by Millet places two heavy-feeding cereal-type crops back-to-back with no legume between them to restore soil fertility.

Question 15. Anaemia in piglets is prevented by giving them... (A) a ration rich in proteins (B) an injection of iron supplement (C) some mineral licks (D) vitamin supplements

Answer: B -- piglets are born with low iron reserves and sow's milk is low in iron, so an iron injection prevents anaemia.

Question 16. The main objective of Agribusiness is to... (A) create many jobs (B) feed the nation (C) make maximum profit (D) obtain foreign currency

Answer: C -- as a business activity, the main objective of Agribusiness is to make maximum profit.

Question 17. A farmer constructed a farrowing pen with a guard rail labelled T fixed along the inside walls. The part labelled T was included to protect piglets from being... (A) attacked by wild animals (B) rolled over by the sow (C) soaked by heavy rains (D) stolen by thieves

Answer: B -- the guard rail (farrowing rail) prevents the heavy sow from crushing/rolling over onto her piglets against the wall.

Question 18. One of the reasons for dehorning calves is to make them... (A) easier to handle (B) grow very fast (C) more suited for work (D) produce quality product

Answer: A -- dehorned cattle are safer and easier to handle, reducing the risk of injury to handlers and other animals.

Question 19. A sow that shows signs of heat after the 19th to the 23rd day after service should be... (A) culled and sold (B) mated again (C) moved to a farrowing pen (D) tested for pregnancy

Answer: B -- returning to heat 19-23 days after service means the sow did not conceive, so she should be mated again.

Question 20. Farmers practice mixed farming to... (A) prevent crops from being attacked by pests (B) ensure that crops and livestock benefit from each other (C) prevent any losses on both enterprises (D) produce all cultural products on sale

Answer: B -- in mixed farming, crop residues can feed livestock while livestock manure fertilises crops, so the two enterprises benefit each other.

Question Section B - Q1. AGRICULTURE IN ZAMBIA. (a) Give three reasons why most commercial farming takes place along the line of rail. [3] (b) Explain the importance of good roads in the development of agriculture. [3] (c) Why are farmers advised to diversify their crop production? [2] (d) Name one government agency that assists farmers in the marketing of agricultural produce. [1] (e) Which Ministry in Zambia provides agricultural extension services to farmers? [1]

(a)

Answer: Three reasons: the line of rail has established transport infrastructure (road and rail) making it easy to move inputs in and produce out; it has ready access to markets, processing industries and storage facilities located along it; and it has better access to social/economic infrastructure (electricity, water, skilled labour) that supports commercial-scale farming.

(b)

Answer: Good roads allow farmers to transport inputs (seed, fertiliser, chemicals) to the farm and produce to markets quickly, reducing spoilage of perishable produce, lowering transport costs, and giving farmers access to extension services, credit and market information.

(c)

Answer: Diversifying crop production spreads risk against total crop failure or a price fall in any single crop, provides the farmer with income and food at different times of the year as different crops mature, and makes better use of farm land, labour and soil nutrients.

(d)

Answer: The Food Reserve Agency (FRA).

(e)

Answer: The Ministry of Agriculture.

Question Section B - Q2. SOIL SCIENCE. A learner carried out an experiment on the water holding capacity of soils, placing 10g of different soil samples (M, N, P) into funnels lined with glass wool and sand, and pouring 20cm³ of water over each. M and P retained water up to the 10cm³ mark; N retained water up to the 20cm³ mark. (a)(i) How much water was retained in M and P? [2] (ii) Which of the soils has the best water holding capacity? [1] (iii) What should a farmer do to soil with water holding capacity such as sample N? [1] (b) State the importance of soil water to plants. [1] (c) Which of the soil samples would have (i) high nutrient content available to crops, (ii) high acidity? [1] [2] (d) State two components of soil other than water. [2] (e) Which fraction of the soil is responsible for high water holding capacity? [1]

(a)(i)

Answer: M retained 10cm³ of water and P also retained 10cm³ of water (read from the funnels' scales).

(a)(ii)

Answer: N has the best water holding capacity -- it retained the most water (20cm³) of the 20cm³ poured in, meaning it let the least water drain straight through.

(a)(iii)

Answer: A farmer should improve the drainage of a soil like N (for example by adding sand, ridging, or making drainage channels), since a soil that holds this much water is at risk of becoming waterlogged.

(b)

Answer: Soil water dissolves and transports plant nutrients so roots can absorb them, is used directly in photosynthesis, and keeps plant cells turgid.

(c)(i)

Answer: N -- a soil that retains more water also tends to retain more of the nutrients dissolved in that water, rather than letting them leach away.

(c)(ii)

Answer: M and P (judgment call) -- their free-draining, sandy nature lets rainwater leach basic nutrients out of the soil quickly, which tends to leave such soils more acidic over time than a soil like N that retains water and dissolved bases.

(d)

Answer: Mineral (inorganic) particles such as sand, silt and clay, and organic matter (humus) from decomposed plants and animals.

(e)

Answer: Clay -- the fine clay fraction of the soil is responsible for its high water holding capacity.

Question Section B - Q3. CROP PRODUCTION. (a)(i) State two factors to consider when choosing a suitable site for growing vegetables. [2] (ii) State the importance of correct handling of vegetables for marketing. [1] (b) State the importance of including legumes in a crop rotation. [1] (c) State three ways in which weeds reduce crop yields. [3] (d) Name the pest that causes staining of the lint on cotton bolls. [1] (e) Why should cotton plants be destroyed soon after harvest? [1] (f) Why is it necessary to dry maize to 10-12% moisture content before storage? [1]

(a)(i)

Answer: Two factors: availability of a reliable water supply for irrigation, and fertile, well-drained soil (proximity to market is another acceptable factor).

(a)(ii)

Answer: Correct handling reduces bruising, damage and spoilage of vegetables, keeping their quality high and preserving their market value.

(b)

Answer: Legumes fix atmospheric nitrogen into the soil through root nodules, improving soil fertility for the cereal or other crop that follows in the rotation.

(c)

Answer: Weeds compete with crops for water, nutrients, light and space, reducing yield; they harbour pests and disease-causing organisms that then attack the crop; and some weed seeds mixed in with the harvest lower the quality/grade of the produce.

(d)

Answer: Cotton stainers (judgment call: sap-sucking bugs, *Dysdercus* species, that pierce cotton bolls and stain the lint).

(e)

Answer: Destroying cotton plants after harvest breaks the pests' (e.g. cotton stainers, bollworms) breeding cycle by removing their food and shelter, preventing them carrying over to attack the next season's crop.

(f)

Answer: Drying maize to 10-12% moisture prevents mould/fungal growth and insect (weevil) infestation during storage, so the grain keeps well without rotting.

Question Section B - Q4. FORESTRY AND CONSERVATION FARMING. (a)(i) State two sources of organic manure. [2] (ii) State three ways in which trees help to prevent soil erosion. [3] (b) Describe how a farmer can make an organic pesticide using onion, green pepper, garlic and soap. [2] (c) What effect does mono-cropping have on crop yields? [1] (d) State two seed-sowing methods used under conservation farming. [2]

(a)(i)

Answer: Farmyard/kraal manure (animal droppings and bedding) and compost manure (decomposed plant and crop residues).

(a)(ii)

Answer: Trees' roots bind and hold the soil together, reducing washing away by water; their canopy breaks the force of falling raindrops before they hit and dislodge bare soil; and they act as windbreaks that reduce soil loss from wind erosion.

(b)

Answer: Crush or blend onion, green pepper and garlic together, mix the pulp with water and a small amount of soap (which helps the mixture stick to leaves), then strain the mixture and spray it directly onto the affected crop to repel or kill pests.

(c)

Answer: Mono-cropping (growing the same crop repeatedly on the same land) depletes specific soil nutrients and allows pests and diseases that attack that crop to build up, causing crop yields to decline over time.

(d)

Answer: Planting basins and dibble-stick (ripper-line) direct seeding -- both place seed into fixed planting stations with minimal soil disturbance, instead of full conventional tillage.

Question Section B - Q5. LIVESTOCK PRODUCTION. (a) State the nutritional value of cattle to humans. [1] (b) How can black quarter disease in cattle be controlled? [3] (c) State two reasons why some cows may fail to produce young. [2] (d)(i) Describe how castration of a bull calf is carried out using burdizzo pincers. [2] (ii) Why is it recommended to castrate calves before 3 months of age/before weaning? [2]

(a)

Answer: Cattle provide meat and milk, both valuable sources of protein for human consumption.

(b)

Answer: Black quarter (blackleg) is controlled mainly by vaccinating cattle against the disease, along with prompt isolation/burning or deep burial of carcasses of animals that die of it, and avoiding grazing on contaminated pasture.

(c)

Answer: Two reasons: reproductive disorders or infertility (e.g. a blocked or damaged reproductive tract), and diseases such as brucellosis that affect the reproductive system (poor nutrition and old age are also acceptable reasons).

(d)(i)

Answer: The burdizzo pincers are clamped firmly across each spermatic cord in the scrotum (without cutting the skin) to crush the cord and its blood vessels, cutting off the blood supply to the testicle so that it atrophies.

(d)(ii)

Answer: Castrating before 3 months/before weaning causes the calf less pain and stress, the wound (where a cutting method is used) heals faster with less bleeding and risk of complications, and the young calf is much easier and safer to handle than an older, stronger animal.

Question Section B - Q6. FARM STRUCTURES. (a)(i) What is a crush pen? [1] (ii) State four operations that are carried out on cattle in a crush pen. [4] (iii) How does a crush pen make the handling of cattle easier? [1] (b) A diagram shows a dip tank with three labelled sections. Name the three parts of a dip tank shown. [3] (c) Why are cattle regularly sprayed or dipped? [1]

(a)(i)

Answer: A crush pen is a narrow, strongly-built enclosure or passage used to confine cattle closely, one at a time, so they can be examined, treated or handled safely.

(a)(ii)

Answer: Four operations: vaccinating/injecting animals, dosing/drenching against internal worms, branding, and dehorning or castrating (ear-tagging and pregnancy testing are also acceptable).

(a)(iii)

Answer: A crush pen restricts the animal's movement, holding it still and confined so that a single handler can safely examine, inject or treat it without the risk of being kicked, injured, or the animal escaping.

(b)

Answer: Foot bath (a shallow bath cattle walk through first, removing loose dirt from their hooves), dip bath/plunge bath (the deep main bath containing the acaricide chemical that cattle swim/wade through), and the drainage race/pen (where dipped cattle stand afterward so excess dip solution drains back into the tank).

(c)

Answer: Cattle are regularly sprayed/dipped to kill and control external parasites such as ticks and lice, which transmit diseases (e.g. theileriosis/January disease) and cause blood loss and reduced production.

Question Section B - Q7. FARM MACHINERY. A diagram shows two tractor-drawn implements: P (a three-disc plough, with a labelled point X on one disc) and Q (a heavier, multi-disc harrow). (a)(i) Identify implements P and Q. [2] (ii) State the function of each of the implements P and Q. [2] (iii) State how part X can be (1) prevented from rusting, (2) kept sharp. [2] (b)(i) Which part of a hand sprayer is moved in order for the spray to be released? [1] (ii) State one precaution that can be taken when spraying pesticides using a hand sprayer on a windy day. [1] (iii) State the functions of the following parts of a hand sprayer: 1. Tank, 2. Pump. [2]

(a)(i)

Answer: P is a disc plough (three-disc); Q is a disc harrow (a heavier, multi-disc harrow).

(a)(ii)

Answer: The disc plough (P) cuts into and turns over/inverts the soil, burying weeds and crop residue and opening a new seedbed. The disc harrow (Q) breaks down the large clods left after ploughing into a finer tilth and levels the seedbed ready for planting.

(a)(iii)

Answer: (1) Prevent part X (the disc's cutting edge) from rusting by cleaning off soil after use, oiling/greasing it, and storing the implement under cover away from rain. (2) Keep it sharp by regularly filing or grinding the cutting edge, or replacing badly worn discs.

(b)(i)

Answer: The lever/trigger on the lance or nozzle is moved to release the spray.

(b)(ii)

Answer: Spray with the wind blowing away from the sprayer's back (not into the wind), or avoid spraying altogether in strong wind, to prevent the chemical drifting onto the operator or non-target areas.

(b)(iii)

Answer: 1. Tank -- stores/holds the pesticide spray mixture. 2. Pump -- builds up pressure inside the tank to force the spray mixture out through the nozzle.

Question Section B - Q8. FARM MANAGEMENT. A Grade 9 learner carried out a chicken project with the following transactions -- Purchases: 2nd February 2019, 10 bags of starter and finisher mash at K200.00 per bag and chick formula at K50.00; 14th February 2019, 100 chicks at K5.00 each. Sales: 28th March 2019, sold 94 chickens at K50.00 each and sold 20 bags of chicken manure at K25.00 each. Enter the information on purchases and sales in the appropriate columns in the table provided. [5] Calculate the (a) income, (b) expenditure, [2] (c) profit or loss of the project. [3]

Table entry (not reproduced here) lists each transaction with its date, item, quantity and amount as given in the question.

(a)

Answer: Income = (94 chickens x K50.00) + (20 bags manure x K25.00) = K4,700.00 + K500.00 = K5,200.00.

(b)

Answer: Expenditure = (10 bags mash x K200.00) + K50.00 chick formula + (100 chicks x K5.00) = K2,000.00 + K50.00 + K500.00 = K2,550.00.

(c)

Answer: Profit = Income - Expenditure = K5,200.00 - K2,550.00 = K2,650.00 profit.

Disclaimer

Created by eskulu Past Papers Tutor

These solutions were created using artificial intelligence and checked against ECZ marking guidelines. If you find an error, report it at eskulu.com/feedback.

eskulu.com | zedpastpapers.com