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Question 1

- (a) Describe how specimen **B** is used on farm animals.
[5 marks]
- (b) State **two** uses **each** specimens **C**, **D** and **E**.
[6 marks]
- (c) Name **two** other farm tools that could be used in place of **each** of specimens **B** and **E**.
[4 marks]

Observation

Emphasis on sequential steps of how the burdizzo is used during castration contributed to candidates' abysmal performance in Question (a). Many candidates failed to mention restraint of animal and disinfection of the spermatic cord. Some candidates referred to crushing of the scrotum instead of the spermatic cord during castration.

The expected answers include:

- (a) **Description of how specimen B (Burdizzo) is used on farm animals**
- Restrain/restrict/secure/hold the animal in position
 - Clean the skin around the spermatic cord/vas deferens with methylated spirit/any other appropriate disinfectant
 - Feel/palpate the scrotum to search for the spermatic cord
 - Push/place the cords sideways in the jaws/spincers of the burdizzo
 - Press the handle of the burdizzo with the right hand to crush the spermatic cord
 - Release pressure after ensuring that the spermatic cord is crushed
 - Disinfect/Treat the point of application of the burdizzo on the body of the animal
 - Release the animal
- (b) **Uses of specimens C (Neck/collar tag), D (Spanner) and E (Kerosene/hurricane lamp).**
- Specimen C (Neck/collar tag)**
- Numbering of farm animals
 - Identification of farm animals
 - For tracking/monitoring farm animals

- For accurate record keeping of farm animals
- Helps in setting dispute over stolen or strayed stock

Specimen D (Spanner)

- Loosening of bolts/nuts
- Tightening of bolts/nuts
- For gripping and turning screw

Specimen E (Kerosene/hurricane lamp)

- Provision of light/illumination on the farm/in livestock building
- Brooding of chicks/provision of heat/warmth to chicks
- Candling of eggs

(c) **Other farm tools that could be used in place of specimens B (Burdizzo) and E (Kerosene/hurricane lamp)**

Specimen B (Burdizzo)

- | | |
|----------------------------------|------------------|
| - Emasculator
ring/Elastrator | - Rubber |
| - Electro-castrator/castrator | - Surgical blade |
| - Incision knife | |

Specimen E (Kerosene/hurricane lamp)

- | | |
|-----------------|--------------------|
| - Electric bulb | - Kerosene stove |
| - Candle light | - Chargeable light |
| - Coal pot | - Gas lamp/lantern |

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Question 2

- (a) (i) State **one** physical property **each** of specimens **F**, **G** and **H**.
[3 marks]
- (ii) Give **one** common function of specimens **F**, **G** and **H**. [1 mark]
- (iii) State **three** methods of applying specimen **F** to the soil. [3 marks]
- (b) Describe how specimen **G** is prepared.
[5 marks]
- (c) Mention **one** precaution to be taken when applying **each** of specimens **F**, **G** and **H** to soils. [3 marks]

Observation

Candidates' performance in Question 2 was above average although the description of preparation of compost proved difficult for many candidates. Majority of candidates did not follow the sequential steps necessary for preparing compost; thus losing marks. In addition, some candidates do not understand the common function of superphosphate, compost and farmyard manure but they were writing 'for crop growth'.

The expected answers include

2. (a) (i) **Physical properties of specimens F (Superphosphate), G (Compost) and H (Farmyard Manure)**

Specimen F (Superphosphate)

- Light/grey colour
- Granular in nature
- Has loose particles
- Hard to touch

Specimen G (Compost)

- Dark in colour
- Presence of well decayed materials
- Bulky
- Has foul/unpleasant/offensive odour

Specimen H (Farmyard manure)

- It is dark in colour
- Not well decayed materials due to the presence of grass and other materials
 - Very bulky
- Contains micro-organisms
- It has foul/unpleasant/offensive odour

(ii) Common function of specimens F (Superphosphate), G (Compost) and H (Farmyard manure)

- They add nutrients to the soil/increase fertility of the soil

(iii) Methods of applying specimen F (Superphosphate) to the soil

- | | |
|-------------------------------|------------------|
| - Broadcasting | - Ring placement |
| - Plough-sole method | - Band placement |
| - Side dressing/row placement | - Top dressing |

(b) Description of how specimen G (Compost) is prepared

- Collect materials such as grasses, legumes, kitchen waste, dung, old compost, ash and water
- Make three or four heaps/pits
- Lay grasses and legumes, at the bottom of the heap/pit A, followed by kitchen waste, dung, old compost, and other plant materials
- Sprinkle ash, urine, and little amount of water
- Cover up each layer
- Layers are added in this manner until the heap/pit is filled up
- Insert a long stick called tester by the side
- Feel the tester after two weeks. If it is hot, it implies that decomposition has taken place/the operation is successful
- After two weeks, the materials are turned into heap/pit B
- After another two weeks, heap/pit B is turned into heap/pit C

(c) Precautions that should be taken when applying specimens F (Superphosphate), G (Compost) and H (Farmyard manure) to soils**Specimen F (Superphosphate)**

- Avoid direct contact of the fertilizer with any plant part
- Apply according to plant nutrient requirement
- After application, the spreader and implement used need to be washed properly
- Use a ventilation mask during application to the soil
- Avoid eating, drinking and smoking when applying

Specimen G (Compost)

- Must not be applied immediately after preparation
- Avoid direct contact with plants
- Wear gloves and a mask when applying
- Avoid eating, drinking and smoking when

applying

Specimen H (Farmyard manure)

- Allow some days for proper decay of the manure before planting
- Avoid direct contact with plants
- Use ventilation mask during application to the soil
- Avoid eating, drinking and smoking when applying

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Question 3

- (a) State the botanical names of **each** of the crops from which specimens **I, J, K** and **L** were obtained. [4 marks]
- (b) Classify **each** of specimens **I, J, K** and **L** according to their uses. [4 marks]
- (c) Outline the steps involved in the processing of specimen **I** to obtain vegetable oil. [4 marks]
- (d) List **three** diseases of the crop from which specimen **K** was obtained. [3 marks]

Observation

Candidates' performance in Question 3 was below average due to

- (a) failure of candidates to adhere to the scientific convention of writing botanical names and wrong spellings;
- (b) inadequate knowledge of classification of crops based on their uses;
- (c) failure to sequentially outline the steps involved in processing groundnut into vegetable oil;
- (d) lack of knowledge of diseases of oil palm.

The expected answers include:

3. (a) **Botanical names of crops from which specimens I (Groundnut seeds), J (Cotton lint) and K (Oil palm fruit) and L (Rubber latex) were obtained**

- Specimen I** (Groundnut) - *Arachis hypogea*
Specimen J (Cotton) - *Gossypium spp*
Specimen K (Oil palm) - *Elaeis guineensis*
Specimen L (Rubber) - *Hevea brasiliensis*

(b) **Classification of specimens I (Groundnut seeds), J (Cotton lint), K (Oil palm fruit) and L (Rubber latex) according to their uses**

crop	Specimen I (Groundnut seeds) - Legume/pulse/grain legume/Oil
	Specimen J (Cotton lint) - Fibre crop/Oil crop
	Specimen K (Oil palm fruit) - Oil crop
	Specimen L (Rubber latex) - Latex crop

(c) **Steps involved in the processing of specimen I (Groundnut seeds) to obtain vegetable oil**

- Drying
- Threshing /dehulling/picking
- Winnowing
- Shelling/decortication
- Winnowing
- Roasting
- Milling/pressing/pounding
- Oil extraction/Filtration

(d) **Diseases of the crop from which specimen K (Oil palm fruit) was obtained**

- Anthracnose
- Leaf spot/Freckle
- Ganoderma disease/Galadema
- Algae spot
- Blast
- Vascular wilt
- Brown Germ

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Question 4

- (a) Name **one** group of farm animals from which **each** of specimens **M, N** and **O** could be found. [3 marks]
- (b) State **one** characteristic feature of **each** of specimens **N, O, P** and **Q**. [4 marks]
- (c) State **two** functions **each** of specimens **N, O, P** and **Q**. [8 marks]

Observation

Question 4 question was quite popular among candidates and performance was impressive. However, some candidates were mentioning farm animals within a specific group e.g. fowl instead of poultry/avians/birds.

The expected answers include:

4. (a) **Groups of farm animals from which specimens M (Crop), N (Gizzard) and O (Rumen) could be found**

Specimen M (Crop) - Poultry/avians/birds
Specimen N (Gizzard) - Poultry/avians/birds
Specimen O (Rumen) - Ruminants

(b) **Characteristic features of specimens N (Gizzard), O (Rumen), P (Small intestine) and Q (Liver)**

Specimen N (Gizzard)

- Thick and muscular walls
- Lined with thick membrane
- Contains grits/stones

Specimen O (Rumen)

- Towel-like structure
- Possesses small fingerlike projections from the walls

Specimen P (Small intestine)

- Tube-like structure
- The walls are velvet/thin in texture
- Possesses villi which are minute hair-like structure in the walls

Specimen Q (Liver)

- Has dark brown colour
- A mass of bloody soft tissue
- It has bile ducts/hole

(c) Functions of specimens N (Gizzard), O (Rumen), P (Small intestine) and Q (Liver)**Specimen N (Gizzard)**

- Passage of feed
- Grinding of feed/aids digestion
- Mixes digestive enzymes with feed/chemical degradation
- Temporary storage of feed

Specimen O (Rumen)

- Acts as fermentation vat
- Absorption of fatty acids
- Synthesis of vitamin B complex
- Aids regurgitation of feed when chewing cud
- Temporary storage of ingested herbage
- Production of volatile fatty acids
- Synthesis of microbial protein

Specimen P (Small intestine)

- Absorption of nutrients in digested feed
- Emulsification of fats
- Digestion of feed ends here
- Mixes ingested food with mucus
- Receives digesting enzymes from the pancreas

Specimen Q (Liver)

- Detoxification of toxic substances
- Metabolism of nutrients
- Storage of vitamins
- Deamination
- Regulation of body temperature
- Synthesis of bile
- Synthesis of plasma
- Storage of iron
- Regulation of blood sugar

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