

24.14 AGRICULTURE (443)

24.14.1 Agriculture Paper 1 (443/1)



MANYAM FRANCHISE

Discover! Learn! Apply

1.
 - Swampy / water logged areas.
 - Stony ground.
 - Steep areas.
 - Aridity/dryness.
 - Eroded/bare land.
 - Tsetse fly infested areas.
 - Bushy land.

(Any 4 x 1/2 = 2 marks)
2.
 - Wind.
 - Glaciation / Ice.
 - Temperature.
 - Running water.

(Any 3 x 1/2 = 1 1/2 marks)
3.
 - By mixing soil with water, shaking/stirring and allowing the particles to settle/ sedimentation.
 - By the use of a series of sieves with different mesh sizes.

(2 x 1/2 = 1 mark)
4.
 - Minimises land disputes with neighbours/ensures ownership.
 - Used as security to obtain loans.
 - Encourages the farmer to carry out long term investment on the land.
 - The farmer can lawfully lease all or part of the land to earn extra income.

(Any 2 x 1/2 = 1 mark)
5.
 - Controls weeds.
 - Controls crop pests.
 - Controls crop diseases.
 - Maximises use of soil nutrients.
 - Reduces soil erosion/improves soil structure.
 - Improves N – status in the soil, when legumes are included in the programme / maintains soil fertility.

(Any 4 x 1/2 = 2 marks)
6.
 - Where the pest is found.
 - Feeding habits/types of damage.
 - Scientific/biological classification.
 - Crop attacked.
 - Stage of development of the pest at which it causes damage.
 - Stage of growth at which the crop is attacked.
 - Part of the crop attacked.

(Any 4 x 1/2 = 2 marks)
7.
 - Assists the development of the meristematic tissues.
 - Facilitates fruit setting.
 - Helps in translocation of sugar, nitrogen and phosphorous.
 - Facilitates nodule formation in legumes.
 - Regulates carbohydrate metabolism.
 - Facilitates the absorption of water.
 - Facilitates formation of pollen tubes.

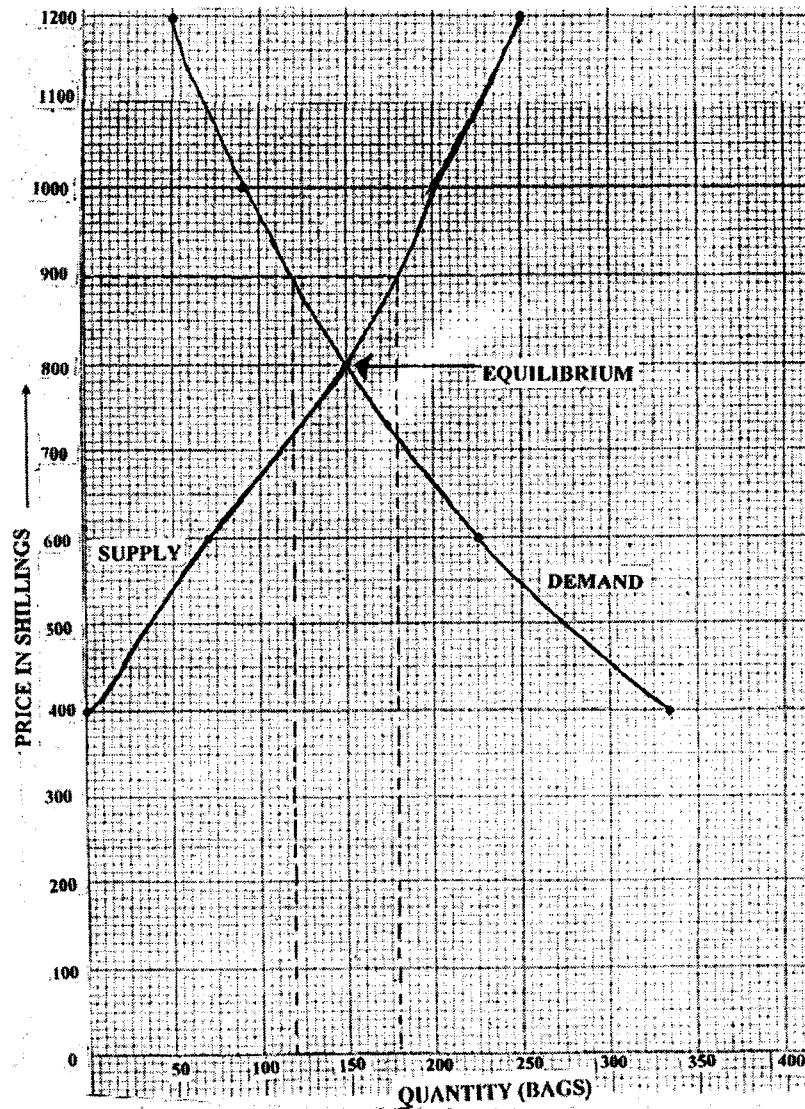
(Any 3 x 1/2 = 1 1/2 marks)
8.
 - Improved infra-structure.
 - High per capita income / improved living standards.
 - Increased recreational facilities.
 - More and better social services/amenities provided to citizens.

9.
 - Better and efficient production methods and services/ improved technology. *(Any 4 x 1/2 = 2 marks)*
10.
 - Demand for the commodity.
 - Supply for the commodity.
 - Price of the related commodities.
 - Cost of producing the commodity.
 - Tastes and preferences for the commodity. *(Any 3 x 1/2 = 1 1/2 marks)*
11.
 - Lucerne/Alfalfa.
 - Clover/Kenya white clover/Louisiana white clover/subterranean clover.
 - Desmodium/green desmodium /silver leaf desmodium.
 - Sunn hemp.
 - Calliandra.
 - Sesbania.
 - Leucaenia. *(Any 3 x 1/2 = 1 1/2 marks)*
12.
 - Number of animals one intends to feed.
 - Length of dry season the material is intended to cater for.
 - Amount of plant materials available for ensiling.
 - Bulkiness of the material. *(Any 2 x 1/2 = 1 mark)*
13.
 - To ensure higher quality/palatability of forage.
 - To ensure higher quantity of foliage.
 - Minimises the incidence of poisonous weeds to livestock such as thorn apple.
 - Minimises competition for light, water and nutrients.
 - Minimises the spread of pests and diseases.
 - To minimise the cost of production.
 - To minimise spread of disease. *(Any 3 x 1/2 = 1 1/2 marks)*
14.
 - Proper soil depth.
 - Well aerated soil.
 - Good water holding capacity.
 - Adequate supply of plant nutrients.
 - Good cation exchange capacity.
 - Well drained soil/ good infiltration rate.
 - Absence of soil pests/disease/weeds.
 - Appropriate soil pH range. *(Any 6 x 1/2 = 3 marks)*
15.
 - Should have a high germination percentage/ should be viable.
 - Should have high vigour.
 - Should be free from pests/diseases/ should be healthy.
 - Should not have any physical damage.
 - Should be clean/physically pure/ not mixed with other impurities.
 - Should be uniform in size, colour and shape. *(Any 5 x 1/2 = 2 1/2 marks)*
- (a)
 - Digging up and down the slope.
 - Overstocking/ overgrazing.
 - Lack of ground cover/bare land.
 - Clean weeding/ deforestation/ burning vegetation.
 - Cultivating along river banks.
 - Cultivating on steep slopes.
 - Over irrigation/ uncontrolled irrigation. *(Any 4 x 1/2 = 2 marks)*
- (b)
 - V: shaped gullies.

16. (a) (2 x 1/2 = 1 mark)
- U: shaped gullies.
 - Good farm planning.
 - Rotational programmes can be easily effected.
 - Mechanization is possible because the areas are large.
 - Cheaper to register the land.
 - It saves on farm operations/ cost of operation.
 - Agricultural extension officers can easily inspect the whole farm and give advice.
 - It encourages the farmers to invest on land / carry out long term projects.
 - Ensures effective supervision by the farmers;
 - Saves on time spent in movement. (Any 4 x 1/2 = 2 marks)
- (b)
- Enable the land-owner/landlord to earn income from the land.
 - Enables people who have no land to have access to farming land.
 - Land that would otherwise be idle is put into productive use.
 - Enables the tenant to increase or decrease the acreage of land leased depending on profitability. (Any 2 x 1/2 = 1 mark)

17.

(a)



(5 marks)

- (b) The equilibrium price of the potatoes is Ksh 800/= (1 x 1 = 1 mark)
- (c) (i) 120 bags of potatoes would be bought. (1 x 1 = 1 mark)
- (ii) The price would be Ksh 900/= (1 x 1 = 1 mark)
18. (a)
- **A₁**: Root stock. (1 x 1 = 1 mark)
 - **A₂**: Scion. (1 x 1 = 1 mark)
- (b)
- **A₃**: Grafting/whip grafting. (1 mark)
 - **B**: Ground layering/ trench layering. (Any 1 x 1 = 1 mark)
- 19.
- C₁: Maize weevil, Maize stalk borer, Pink bollworm. (Any 1 x 1 = 1 mark)
 - C₂: White leaf blight, Maize streak, Rust. (Any 1 x 1 = 1 mark)
20. (a) P₂O₅ = 20% (1 x 1 = 1 mark)
- (b) 10,000 m² require 300 kg fertilizer.
 $\therefore (10 \times 5) \text{ m}^2 \text{ would require } \frac{50 \times 300}{10,000}$
 $= 1.5 \text{ kg/1500g fertilizer}$ (2 marks)
21. (a) Single stem pruning. (1 x 1 = 1 mark)
- (b) The mainstream of seedling is capped to encourage suckers to grow. 2 or 3 healthy suckers are selected and allowed to grow while the rest are removed. The selected suckers should form a "U" shape between them to avoid splitting. (2 x 1 = 2 marks)
22. (a) (i) **Land preparation**
- Clear the land.
 - Divide the land into plots of 0.4 ha.
 - Construct/repair the banks/bunds.
 - Construct/repair inlet and outlet channels.
 - Flood the field 4 days before rotavation/ digging.
 - Flooding should be done until water level is about 7.5 - 10 cm above the soil surface.
 - Carry out primary cultivation/ digging/ rotavation.
 - Puddle the soil to the required tilth.
 - Heap the weeds/trash along the bunds/banks.
 - Level the field by dragging a board/use a jembe to obtain a level seedbed. (Any 7 x 1 = 7 marks)
- (ii) **Water control**
- Introduce water into the field to a depth of 7.5 – 10 cm before primary cultivation.
 - Leave the field submerged for 4 days.
 - At the time of transplanting, leave a thin film of water for about 1 week.
 - Introduce water gradually into the field as the crop establishes.
 - Maintain the water level at $\frac{1}{3}$ the height of the crop up to 3 weeks before harvesting.
 - Water should be changed every 2-3 weeks or when cold.
 - Remove / drain water 3 weeks before harvesting.
 - Water should flow slowly through the field. (Any 6 x 1 = 6 marks)
- (b)
- Regular watering of young seedlings.
 - Control of weeds.

- Thinning of young trees and felling of older trees to allow adequate space for growth.
 - Pruning of dead wood and branches obstructing access areas.
 - Controls of pests.
 - Control of diseases.
 - Protection against forest fires by digging trenches/clearing land round the farm.
 - Construction of structures to protect trees from damage by animals.
 - Construction of water micro-catchment structures around the trees.
 - Provision of shade and mulch after transplanting.
 - Grafting / budding of old trees.
 - Application of manure/ fertilizers. **(Any 7 x 1 = 7 marks)**
23. (a)
- Statutory interference by the Government in agricultural marketing causing artificial shortages.
 - Poor training for people involved in marketing leading to heavy losses to farmers.
 - Bulkiness of most agricultural produce making transportation difficult and expensive.
 - High perishability of most agricultural produce leading to low quality.
 - Seasonality of agricultural produce leading to price fluctuations.
 - Inadequate storage facilities leading to heavy losses of produce.
 - Poor infrastructure leading to high transport costs and spoilage of agricultural produce.
 - Change in market demand due to time lag between production and marketing.
 - Change of supply of agricultural produce leading to fluctuation of market prices.
 - Inadequate market information to farmers leading to selling of farm produce when the prices are low.
 - Lack of capital to finance various marketing functions, for example: advertising and transportation.
 - Competition with synthetic products leading to loss of market. **(Any 10 x 1 = 10 marks)**
- (b)
- The farmer can be able to predict the profitability of an enterprise.
 - It enables the farmer to detect problems easily so that correction is done in good time before losses are incurred.
 - Assists the farmer to make management decisions especially when comparing two alternative projects.
 - Helps the farmer in making effective changes in the organisation.
 - Ensures a periodic analysis of the farm business.
 - Helps in estimating the required production resources such as labour and capital.
 - Helps in deciding the viability of an enterprise.
 - Assists the farmer when negotiating for agricultural credit.
 - Encourages the farmer to be efficient with the aim of meeting the projected targets.
 - Helps in controlling various aspects of production in the farm.
 - Acts as a record which can be used for the future. **(10 x 1 = 10 marks)**
24. (a)
- It makes it possible for crops to be produced during the dry season.
 - It makes it possible to reclaim land for agricultural production.
 - It supplements rainfall in crop production.
 - Sustains proper growth of crops which require plenty of water, for example: rice.
 - Creates favourable temperature for proper plant growth.
 - Facilitates supply of fertilizer in irrigation water/ fertigation.
 - Facilitates the production of crops in arid and semi-arid areas where without irrigation, crop production would be impossible.
 - It makes it possible to grow crops in special structures, for example: green houses **(Any 6 x 1 = 12 marks)**

(b)

- The nature of the land (steep or flat) / topography.
- The type of soil.
- The availability of water to be used.
- The type of crop to be irrigated because some crops need larger amounts of water while others need little and others need moderate amounts of water.
- The distance of the water source from the field to be irrigated.
- The technology available.
- The cost of the system to use.
- The climate of the area.
- Availability of skilled manpower.

(Any 8 x 1 = 8 marks)

24.14.2 Agriculture Paper 2 (443/2)

1.

- Gives comfort and warmth to the birds.
- Helps in drying droppings.
- Keeps birds busy scratching, thus reducing cannibalism.

(2 x 1/2 = 1 mark)

2.

- Newcastle.
- Fowl pox.
- Fowl typhoid.
- Gumboro.
- Marek.

(2 x 1/2 = 1 mark)

3.

- Poor nutrition.
- Infertility.
- Poor timing of service.

(2 x 1/2 = 1 mark)

4.

- Overfeeding with ordinary milk/ colostrum.
- Feeding milk at wrong temperatures.
- Feeding milk in dirty containers/feeding contaminated milk.
- Feeding young ones at irregular intervals

(2 x 1/2 = 1 mark)

5.

- Quality of roughages.
- Availability of the concentrates.
- Level of production.
- Economic factors/cost of concentrates.
- Quality of concentrates.

(3 x 1/2 = 1 1/2 marks)

6.

- Presence of calf/milkman/milking parlour.
- Washing/massaging udder.
- Feeding.
- Sounds associated with milking.

(3 x 1/2 = 1 1/2 marks)

7.

- Reduces injury of other animals/handlers.
- Makes cattle docile/easy to handle.
- Creates more space for feeding/other animals.

(2 x 1/2 = 1 mark)

8.

- Halter.
- Rope.
- Nose ring and a lead-stick.

(2 x 1/2 = 1 mark)

9.

- No rigormotise after death.

- Stomach swells/bloats.
 - Dark red blood oozes out through the natural openings/orifices.
 - Blood does not clot.
10. *(Any 3 x 1/2 = 1 1/2 marks)*
- Transmit diseases.
 - Cause anaemia.
 - Cause irritation.
 - Cause wounds on the skin that may predispose animals to secondary infection.
11. *(Any 3 x 1/2 = 1 1/2 marks)*
- Soil type.
 - Topography.
 - Sources of water.
 - Closeness to homestead/accessibility.
 - Closeness to the market centre.
 - Security.
12. *(Any 4 x 1/2 = 2 marks)*
- Adjust the plough depth.
 - Front furrow depth.
 - Lowering/raising ploughing pitch.
 - Front furrow width.
13. *(Any 3 x 1/2 = 1 1/2 marks)*
- (a)
- Saanen.
 - Toggenburg.
 - British Alpine.
 - Anglo-Nubian.
 - Jamnapari.
- (b)
- Two humps.
 - Hairy body.
 - Absence of trap-nose.
14. *(Any 4 x 1/2 = 2 marks)*
- Proper sanitation/proper carcass disposal.
 - Regular vaccination.
 - Proper feeding/ nutrition.
 - Imposing quarantine/isolation.
 - Control of internal parasites/ deworming/ drenching.
 - Timely treatment of the sick livestock.
 - Control of vectors/dipping/spraying.
 - Proper housing.
 - Isolation of sick animals.
 - Proper selection and breeding of animals.
15. *(Any 5 x 1/2 = 2 1/2 marks)*
- Man.
 - Farm animals.
 - Wind.
 - Electricity.
 - Solar energy.
 - Water.
16. *(Any 4 x 1/2 = 2 marks)*
- Clean regularly.
 - Repaint the base if necessary especially wooden troughs.
 - Repair cracks on concrete / wooden troughs.
 - Replace broken parts.
- (Any 3 x 1/2 = 1 1/2 marks)*

- 17.
- Fuel system.
 - Electrical system.
 - Cooling system.
 - Lubrication system.
 - Transmission system.
 - Ignition system.
 - Hydraulic system.
- (Any 4 x 1/2 = 2 marks)*

- 18.
- Raised pens with slatted floor.
 - Permanent calf pens with concrete floors.
 - Moveable calf pens.
 - Temporary calf pens.
- (Any 3 x 1/2 = 1 1/2 marks)*

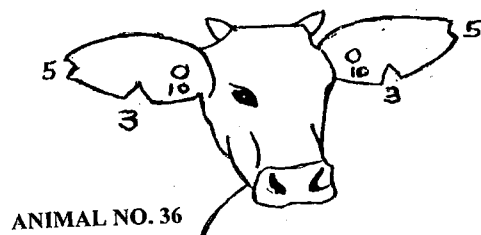
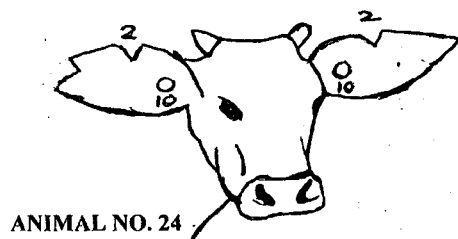
- 19.
- Presence of broken or soft-shelled eggs.
 - Bright light in the nests allowing birds to see the eggs.
 - Idleness in the poultry house.
 - Inadequate nests forcing some birds to lay eggs in the open.
 - Lack of minerals such as calcium in the diet.
 - Irregular egg collection.
- (Any 4 x 1/2 = 2 marks)*

20. (a)
- **A:** Cross-cut saw.
 - **B:** Rip saw.
- (2 x 1/2 = 1 mark)*

- (b)
- **A:** Cutting across the grain.
 - **B:** Cutting along the grains.
- (2 x 1 = 2 marks)*

- (c)
- Proper storage.
 - Sharpening cutting edge.
 - Oiling to prevent rusting.
 - Repairing/ replacing worn out handles.
 - Setting the teeth.
 - Tightening loose screws.
 - Cleaning blade after use.
- (2 x 1 = 2 marks)*

21. (a)
- (i) Ear notching. *(1 x 1 = 1 mark)*
- (ii) Number 40 (forty). *(1 x 1 = 1 mark)*
- (iii)



(2 x 1 = 2 marks)

- (b) Between 18-1-2007 and 20-1-2007. **(1 x 1 = 1 mark)**
22. (a) Barbed wire strands on droppers. **(1 x 1/2 = 1/2 mark)**
- (b) **C:** Gate post.
D: Stiffener.
E: Dropper. **(3 x 1/2 = 1 1/2 marks)**
- (c) (i) Support the gate post. **(1 mark)**
- (ii)
 - Prevent intruders/wild animals into the farm.
 - Prevent livestock from moving out of the farm.
 - Used as entrance into/exit from the farm. **(2 x 1 = 2 marks)**
23. (a) Ox-drawn mouldboard plough. **(1 x 1 = 1 mark)**
- (b) **G:** Mouldboard.
H: Landside.
J: Share.
K: Land wheel/wheel **(4 x 1/2 = 2 marks)**
- (c)
 - Ploughing.
 - Furrowing.
 - Ridging.
 - Weeding.
 - Harvesting root crops. **(4 x 1/2 = 2 marks)**
24. (a)
 - Easy to keep individual production records.
 - Controls cannibalism and egg eating.
 - No contamination of water and feed.
 - Birds are not exposed to predators, parasites and diseases.
 - Facilitates culling and handling.
 - Easy to collect eggs.
 - Egg losses are reduced.
 - Many birds are kept in a given area/high stocking rate.
 - Eliminates broodiness.
 - Birds still have tender meat at culling due to confinement.
 - Facilitates mechanisation.
 - Keeps eggs clean.
 - Sick birds can be detected easily for isolation.
 - Low labour requirement.
 - Higher egg production due to less energy spent. **(10 x 1 = 10 marks)**
- (b)
 - Body conformation.
 - Fertility/breeding ability.
 - Adaptability of the breed to the area/hardiness.
 - Mothering ability in case of females.
 - Production potential/ yielding capacity.
 - Temperament/behaviour, for example: cannibalism egg eating
 - Deformities/ abnormalities, for example: one eye, lameness.
 - Health.
 - Offspring performance.
 - Age of animal.
 - Growth rate.
 - Lifespan/ reproductive life.

25. (a)
 - Disease resistance (10 x 1 = 10 marks)
 - **Induction stroke:** The piston moves down the cylinder causing the inlet valve to open and draw in fresh supply of petrol vapour and air into the cylinder.
 - **Compression stroke:** The inlet valve closes and the piston moves up the cylinder. This compresses the fresh fuel mixture into the combustion chamber.
 - **The power stroke:** Fully compresses the fresh fuel mixture and as a result a spark is produced at the spark plug. This causes the fuel mixture to ignite and expand resulting in pressure that forces the piston down the cylinder.
 - **The exhaust stroke:** The piston moves up the cylinder to eliminate the burnt fuel mixture through an open exhaust valve. (Total 12 marks)
- (b)
 - Helps the driver to select any forward or reverse gear.
 - Adjusts speed of the drive from the engine crankshaft to the drive shaft.
 - Helps to alter the speed ratio.
 - Enables the power from the engine to be more easily applied to the work done by the tractor.
 - Enables the driver to stop the tractor movement without stopping the engine or without foot pressing on the clutch all the time. (4 x 2 = 8 marks)
26. (a)
 - **Concrete / raised slatted floor:** The pen should always be clean. The pen should be easy to clean.
 - **Dry litter:** Should have dry litter on the floor. The roof should be leak proof.
 - **Adequate space:** The pen should be large enough to allow for exercise/ feeding/ watering.
 - **Proper lighting:** Should have good supply of natural light/ sunlight.
 - **Proper drainage:** Should have good drainage in and around the pen.
 - **Draught free:** The structure should stop strong winds from blowing into the calf pen.
 - **Proper ventilation:** Structure should allow for fresh air circulation.
 - **Security:** Should be strong enough to keep away intruders/ wild animals. (Any 6 x 1½ = 9 marks)
- (b) (i)
 - Overcrowding of calves in the pen.
 - Dampness/chilliness in the pen.
 - Poor ventilation.
 - Age/ younger calves are more prone to pneumonia than older calves. (3 x 1 = 3 marks)
- (ii)
 - Rough hair coats/ruffled hair.
 - Loss of appetite.
 - Abnormal lung sounds, for example: whizzing.
 - Emaciation.
 - Frequent coughing.
 - Nasal discharge.
 - Fluctuating body temperature.
 - Rapid / laboured breathing.
 - Dull and reluctant to move. (5 x 1 = 5 marks)
- (iii)
 - Treating the sick calves with antibiotics.
 - Providing warmth in pens.
 - Maintaining good sanitation in pens.
 - Isolating sick calves to avoid spread of the disease. (3 x 1 = 3 marks)

24.14.3 Agriculture Paper 3 (443/3)

PROJECT A: CHICKEN REARING

1. **Feeding**

- Feeders: consider cleanliness of feeder.
 - Economy of feed use: consider the type, the level and wastage of feed.
 - Freshness of feed: consider presence of foreign materials and if feed is stale.
 - Position of feeder: check the height at which feeder is put in relation to the age of the chicken.
- (5 marks)**

2. **Watering**

Waterers

- Cleanliness of waterer.
- Position of waterers in relation to age of chickens

Water

- Cleanliness of water.
 - Amount of water in waterer.
- (4 marks)**

3. **Health of chicken**

- Signs of good health.
 - Weight gain of birds in relation to their recorded initial weight.
 - Control of ectoparasites.
- (7 marks)**

4. **Management of droppings**

- Birds kept on wire cages/ slatted floors.
- Level of accumulation/absence of droppings on floor.
- Level of accumulation/absence of droppings on the cage.

OR

- Birds kept on wooden floor cage.
 - Level of accumulation/ absence of droppings on litter.
 - Dryness of litter/ wetness.
- (2 marks)**

5. **General cleanliness of cage:** Consider level of accumulation/absence of dirt, for example: dust or cobwebs

(2 marks)

6. **Records**

- Availability of records.
 - Accuracy of information kept.
- (4 marks)**

7. **Initiative/Originality:** Consider unique practices carried out by the candidate which promote proper growth and health of chicken.

(4 x 2 = 8 marks)

Note: Except for initiative/originality, all the other aspects of the project will be assessed three times. During each assessment the project should be scored out of a maximum of 24 marks, as shown in the marking scheme. The sum of three assessments added to the score of initiative/originality will be out of 80 marks.

Guidelines for Marking Candidates' Project Reports

The project report should be assessed out of 20 marks. The guidelines below should be followed to arrive at an objective score.

<i>Aspects of the project report</i>	<i>Maximum marks</i>
1. Project title: Clearly written.	<i>(1 mark)</i>
2. Introduction: <ul style="list-style-type: none"> ▪ Stating aim of project. ▪ Type of birds kept. 	<i>(1 mark)</i>
3. Housing <ul style="list-style-type: none"> ▪ Description of the cage. ▪ Site of the cage. 	<i>(2 marks)</i>
4. Feeding <ul style="list-style-type: none"> ▪ Feeder used and placement. ▪ Type of feed. ▪ Quantity of feed given daily. ▪ Supplementary feeds. 	<i>(3 marks)</i>
5. Watering <ul style="list-style-type: none"> ▪ Waterer and placement. ▪ Supply of water. 	<i>(2 marks)</i>
6. Health <ul style="list-style-type: none"> ▪ Disease control. ▪ Parasite/pest control. 	<i>(3 marks)</i>
7. Observation: Achievements made, problems encountered and action taken.	<i>(2 marks)</i>
8. Illustrations: Tables / drawings.	<i>(2 marks)</i>
9. Results: Consider results in relation to the aim and management of project.	<i>(2 marks)</i>
10. Conclusion: Consider consistency of the conclusion with the aims and operations.	<i>(2 marks)</i>
	<i>(Total: 20 marks)</i>

PROJECT B: PRODUCTION OF BEANS OR TOMATOES

1. Seedbed/ land preparation: <ul style="list-style-type: none"> ▪ Timeliness of preparation. <i>(3 marks)</i> ▪ Appropriateness of tilth/ fineness. <i>(4 marks)</i> ▪ Extent of weed control. <i>(2 marks)</i> ▪ Uniformity of seedbed/land preparation. <i>(1 mark)</i> ▪ Straightness of edges. <i>(1 mark)</i> ▪ Appropriateness of depth. <i>(1 mark)</i> ▪ Correctness of plot dimensions. <i>(2 marks)</i> 	<i>(Total: 14 marks)</i>
2. Crop establishment <ul style="list-style-type: none"> ▪ Timeliness of planting with respect to moisture availability. <i>(2 marks)</i> ▪ Depth of planting. <i>(1 mark)</i> ▪ Correctness of crop spacing. <i>(2 marks)</i> ▪ Crop stand/coverage. <i>(3 marks)</i> ▪ Crop appearance/vigour. <i>(2 marks)</i> ▪ Correctness of number of plants per hole as recommended. <i>(2 marks)</i> ▪ Straightness of rows. <i>(1 mark)</i> 	<i>(Total: 13 marks)</i>
3. Weed control: <ul style="list-style-type: none"> ▪ Timeliness of weeding operation in relation to growth of crop. <i>(4 marks)</i> 	<i>(4 marks)</i>

- Thoroughness of weeding. (4 marks)
 - Effect of weeding on the crop, for example: injury, burying of some foliage or exposure of some roots. (3 marks)
 - Maintenance of edges of the plot. (1 mark)
- (Total: 12 marks)
4. **Pest and disease control:**
- Effectiveness of pest control considering symptoms, presence or absence of pests. (5 marks)
 - Effectiveness of disease control considering symptoms, presence or absence of diseases. (5 marks)
- (Total: 10 marks)
5. **Other cultural practices:** Consider any other appropriate cultural practices applied to the crop, for example: staking, pruning and gapping. (5 marks)
- (Total: 5 marks)
6. **Soil and water management:** Appropriate and effective soil and water management measures taken considering topography, climate and soil, for example: terracing, contour planting and ridging. (4 marks)
- (Total: 4 marks)
7. **Harvesting and handling:**
- Avoidance of wastage during harvesting. (3 marks)
 - Timeliness of harvesting. (2 marks)
- (Total: 5 marks)
8. **Yield obtained:** Quality and quantity harvested compared to other candidates in the class. (5 marks)
- (Total: 5 marks)
9. **Initiative/ originality:** Consider other unique practices carried out by a candidate aimed at improving the growth and performance of the crop. This aspect should be assessed any time during the course of the project. (4 x 3 = 12 marks)
- (Total: 12 marks)

(Total maximum marks: 80 marks)

PROJECT B: PRODUCTION OF BEANS OR TOMATOES

Guidelines for Marking Candidates' Reports

The project report should be assessed out of 20 marks. The guidelines below should be followed to arrive at any objective score.

<i>Aspects of the Project Report</i>	<i>Maximum Marks</i>
1. Project title: clearly written.	(1 mark)
2. Introduction: stating the aim of the project.	(2 marks)
3. Seedbed preparation: clearing the land using pangas/ slashers.	(1 mark)
4. Preparing the land to appropriate tilth using jembes/ fork jembes.	(1 mark)
5. Planting <ul style="list-style-type: none"> ▪ Application of manures/fertilizers. ▪ Application of pesticides. ▪ Appropriate preparation of planting materials. ▪ Details of planting procedure appropriate to the crop. 	(2 marks)
6. Weed control <ul style="list-style-type: none"> ▪ Time of weed control. ▪ Types of weeds identified. ▪ Methods of weed control. 	(1 mark)
7. Pest control <ul style="list-style-type: none"> ▪ Types of pests identified. ▪ Types of damage caused. ▪ Control measures taken. 	(1 mark)

8. Disease control
- Symptoms of diseases identified.
 - Names of chemicals used.
 - Method of application.
9. Other crop management practices
- Mulching, thinning, gapping and watering.
 - Soil and water management.
10. Observation: achievements and problems experienced. **(1 mark)**
11. Harvesting **(2 marks)**
- Timeliness.
 - Method applied.
 - Tools and materials.
12. Result/ yield: Considering quality and quantity obtained. **(2 marks)**
13. Conclusion: consistency with the aim/management of the project. **(2 marks)**
- (Total 20 marks)**