

**AGRICULTURE**  
**PAPER 2**  
**FORM 3**  
**TERM 3 2017**  
**MARKING SCHEME**

**SECTION A(30 MARKS)**

1. Harmful effects of ticks
  - They suck blood, causing anemia.
  - They transmit diseases causing organisms.
  - They cause irritation and discomfort to livestock.
  - They cause wounds which are roots for diseases.
2. (a)
  - i. Hybrid vigor  
Is the increased ability and performance of the offspring above the average of two unrelated parents.
  - ii. Mothering ability. Refers to the ability of female animal to take care of its offspring until weaning.
- (b)
  - Easy to control inbreeding.
  - Controls transmission of breeding diseases.
  - Eliminates chances of injuries as bulls do not come into contact with females.
  - Semen from a superior bull can be used to serve many cows.
3. Used for smothering curved surfaces on timber.
4. To give the livestock artificial immunity/ protect livestock from a specific disease.
5.
  - Body size/ weight of the animal
  - Production level of the animal
  - Type of food taken by the animal/ work output
  - Ambient temperatures/ weather conditions
6.
  - Chemical composition of the feed
  - Feed mixtures and other ingredients in the feed
  - Form in which the feed is given to the animal/ method of preparation.
  - Species of the animal.
  - Quantity of food already present in digestive system of the animal.
  - Ratio of energy/ carbohydrates to proteins.
7.
  - Tools should be used to perform the work they were designed for.
  - Tools should be maintained in good working conditions.
  - The user should know how each tool should be handled or used.
  - The user should wear the right protective clothing for the job.
8.
  - Retarded growth.
  - Wearing out of body tissues.
  - Low production level.
  - Low fertility
  - Poor resistance to diseases.

- 9.
- A highly productive female can benefit many farmers.
  - The potential of a desired superior cow can be enhanced.
  - Transporting embryos is easier than the whole animal.
  - Improvement of the local breeds is quicker.
  - Embryos may be stored for a long time when frozen.
  - It is possible to get sexed semen e.g. female heifer calves.

10. Steaming up is the provision of extra feeds of high nutritive value to an animal during the last weeks of gestation, while flushing refers to extra feeding of female livestock with high quality feeds to increase chances of conception.

- 11.
- Frequent urination
  - Vulva swells and becomes reddish.
  - Slimmy mucous discharge from the vulva.

- 12.
- It is palatable.
  - Highly digestible.
  - Attractive to piglets.

- 13.
- Giving the animals hay before grazing them on fresh pasture.
  - Giving fairly wilted grasses after cutting.
  - Spraying pasture with vegetable oil.

14. Water snail/mud snail

- 15.
- Makes use of marginal/ range areas that may not support meaningful crop farming.
  - Creates employment opportunities.
  - Generates foreign exchange through sale of livestock.
  - Animals are reared in an enclosure.

- 16.
- Cleaning after every use.
  - Setting the teeth to the right angle.
  - Sharpening the teeth if blunt.
  - Repairing or replacing broken handle.

- 17.
- Lack of skills to operate a disc plough.
  - When it is cost effective to use a jembe.
  - Where the land is very steep.
  - When the size of land is very small.
  - When capital is inadequate to acquire a disc plough.

### **SECTION B (20 MARKS)**

18. (a)

A – Open ended spanner/ double open ended spanner

B – Ring spanner

C – Adjustable Spanner

(b)

An adjustable spanner can be used to tighten or loosen nuts and bolts of different or varying sizes because it can be adjusted to desired sizes.

(c)

- Oil to prevent rusting.
- Store in a dry place.
- Clean after use.

- Oil the movable parts.
19. (a) Liver fluke  
 (b)
- Cattle
  - sheep

- (c) Liver
20. (a)  
 P – Rumen  
 Q – Reticulum  
 R – Omasum  
 S – Abomasum  
 (b) Absorption of water.  
 (c)

Quantity of oats =  $40/50 \times 200\text{kg} = 160\text{kg}$   
 Quantity of simsim =  $10/50 \times 200 = 40\text{kg}$

21. (a) Newcastle  
 (b)
- Loss of appetite
  - Dullness
  - Birds walk with a staggering motion.
  - Nasal discharges
  - Beaks remain open.
  - Watery greenish diarrhea
  - Difficulties in brathing
  - Birds stand with eyes closed.
  - Lay of soft-shelled eggs
- (c)
- Killing and burning the sick birds.
  - Vaccinations
  - Quarantine
  - General hygiene of poultry house.

**SECTION C (40 MARKS)**

22. Measures Used to Control Livestock Diseases

- Prophylactic approach
- Vaccination
- Quarantine imposition
- Isolation
- Proper nutrition/ feeding
- Drenching/ deworming
- Use of antihelminthes
- Treatment of sick animals
- Control of vectors
- Proper housing
- Farm hygiene
- Mass slaughter/ culling
- Proper breeding and selection
- Hoof trimming

23. (a) Differences between Digestive System of a ruminant and a non-ruminant

Ruminants	Non-Ruminants
1. They are polygastric/ have four stomach	1. Monogastric/ simple single stomach compartment

chambers 2. They chew and regurgitate food 3. They digest cellulose in the rumen.  4. Have no ptylin in saliva – no enzymatic digestion in mouth. 5. They have alkaline saliva. 6. Most digestion and absorption takes place in the rumen.	2. Do not chew cud or regurgitate food. 3. Cellulose digested in the caecum and not in the stomach 4. Have ptylin in saliva. 5. Have neutral saliva. 6. Most digestion and absorption takes place in the small intestine.
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(b) Factors Considered when Selecting Livestock for Breeding

- Age
- Level of performance
- Health status of the animal
- Body conformation
- Temperament/ behavior
- Prolificacy
- Mothering ability
- Fertility
- Growth rate
- Adaptability of the animal to the environment

24. (a) Characteristics of Indigenous Cattle Breeds

- Have hump
- Have long drooping ears that are pointed.
- Head is long and narrow.
- Have long horns
- Relatively thin skin
- Hip bones narrow and angular
- Hair is short and smooth
- Have long legs and move fast
- Adult animals are relatively small
- Slow maturing rate
- Produce less amount of meat and milk
- Produce milk of high butter fat content
- Have high heat tolerance
- Able to thrive on poor pastures

(b) Parts and Functions of a Female Reproductive System of Chicken

- Ovaries – forms ova/ secrete female sex hormones
- Funnel of Oviduct/ infundibulum – fertilization takes place here
  - Chalazae is added to the yolk
- Magnum – is site where thick albumen is added to the yolk
- Isthmus – water, vitamins and mineral are added to the egg/ outer membrane is added to the yolk
- Uterus – site where calciferous shell is added around the egg.
- Vagina – secretes mucus that reduces friction during egg laying/ acts as temporary storage of the egg.
- Cloaca – allows exit of the egg during laying.