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NOTIFICATION

No. A. 33023/5/2013-AH&V, the 26th July, 2019. In the interest of public service, the Governor of Mizoram is pleased to notify the new and improved curriculum for adoption in the Elementary Course of Diploma in Animal Husbandry & Veterinary Science at Lungpuizawl, Lunglei w.e.f. the Academic Year 2019-2021.

Lalthangpuia Sailo,
Commissioner & Secretary to the Govt. of Mizoram,
AH & Veterinary Department.

1st YEAR PAPER – I THEORY

ANATOMY, PHYSIOLOGY, MICROBIOLOGY AND PARASITOLOGY

| Sl. No. | Name of Chapter | No. of Periods |
|---------|-----------------------------|----------------|
| 1. | Skeletal system | |
| 2. | Muscular and nervous system | |
| 3. | Digestive system | |
| 4. | Respiratory system | |
| 5. | Circular system | |
| 6. | Urogenital system | |
| 7. | Endocrine system | |
| 8. | Microbiology | |
| 9. | Parasitology | |

**1st YEAR PAPER – I
THEORY**

ANATOMY, PHYSIOLOGY, MICROBIOLOGY AND PARASITOLOGY

1. SKELETAL SYSTEM

- 1.1 Classification of bones and joints
- 1.2 Bones of forelimb
- 1.3 Bones of hind limb
- 1.4 Bones of skull
- 1.5 Bones of vertebral column
- 1.6 Important joints; shoulder, elbow, hock, stifle joint and inter vertebral joint

2. MUSCULAR AND NERVOUS SYSTEM

- 2.1 Major muscles of mammals and fowl
- 2.2 Physiology of muscular system
- 2.3 Nervous system in mammals; structure and functions of brain, spinal cord and important peripheral nerves
- 2.4 Temperature regulation and environmental physiology

3. DIGESTIVE SYSTEM

- 3.1 Digestive system of ruminants
- 3.2 Physiology of digestion in ruminants
- 3.3 Digestive system of non ruminants
- 3.4 Physiology of digestion in non ruminants
- 3.5 Digestive system of fowl
- 3.6 Physiology of digestion in fowl

4. RESPIRATORY SYSTEM

- 4.1 Respiratory system of mammals sketch diagram
- 4.2 Respiratory system in fowl
- 4.3 Mechanism of respiration in mammals
- 4.4 Mechanism of respiration in fowl

5. CIRCULATORY SYSTEM

- 5.1 Circulatory system in mammals – heart, important arteries and veins, lymphatic system
- 5.2 Blood cellular and chemical constituents of blood-mechanism of blood coagulation
- 5.3 Cardiac cycle
- 5.4 Physiology of lymphatic system

6. UROGENITAL SYSTEM

- 6.1 Structure and function of male reproductive system
- 6.2 Structure and function of female reproductive system
- 6.3 Structure and function of avian reproductive system
- 6.4 Structure and function of urinary system of mammals
- 6.5 Structure and function of urinary system of fowl

7. ENDOCRINE SYSTEM

- 7.1 Pituitary gland

- 7.2 Thyroid
- 7.3 Pancreas
- 7.4 Adrenal gland
- 7.5 Mammary gland-structure and secretion of milk - neurohormonal regulation of milk secretion

8. MICROBIOLOGY

- 8.1 Classification of microorganisms
- 8.2 Morphology of bacteria and virus
- 8.3 Factors affecting the growth of microorganisms
- 8.4 Important pathogenic bacteria; TB, Brucellosis, Anthrax, HS, BQ, Salmonellosis, E.Coli, Clostridium, Leptospirosis, Staphylococcus, Streptococcus, Listeriosis, Mycoplasmosis
- 8.5 Important pathogenic virus; F&M, Rabies, Pox disease, Blue tongue, influenza, Ranikhet, Marek's, IBD

9. PARASITOLOGY

- 9.1 Trematodes; Fasciola, Schistosomes, amphistomes
- 9.2 Cestodes; Taenia, Echinococcus, moniezia, poultry tape worm
- 9.3 Nematodes; Ascaria, strongyloides, ankylostomes, filariasis, trichinellosis
- 9.4 Protozoan parasites; Amoebiasis, babesiosis, theleriosis, coccidiosis, trichomoniasis, trypanosomiasis
- 9.5 Ectoparasites; Ticks, mites, myiasis

**1st YEAR PAPER – I
PRACTICALS**

ANATOMY, PHYSIOLOGY, MICROBIOLOGY AND PARASITOLOGY

- 1. Demonstration of bones of forelimb
- 2. Demonstration of bones of hind limb
- 3. Demonstration of bones of skull
- 4. Demonstration of bones of vertebral column
- 5. Demonstration of different joints
- 6. Demonstration of major muscles of mammals
- 7. Demonstration of major muscles of fowl
- 8. Sketch diagram and labeling of brain, spinal cord
- 9. Sketch diagram and labeling of digestive system of ruminants
- 10. Sketch diagram and labeling of digestive system of non-ruminants
- 11. Sketch diagram and labeling of respiratory system of fowl
- 12. Sketch diagram and labeling of respiratory system of mammals
- 13. Sketch diagram of heart of mammals and fowl
- 14. Observation of normal and abnormal respiration
- 15. Estimation of blood coagulation time
- 16. Sketch diagram of lymphatic system
- 17. Diagram and labeling of male reproductive system
- 18. Diagram and labeling of female reproductive system
- 19. Diagram and labeling of avian reproductive system
- 20. Diagram and labeling of urinary system of mammals
- 21. Diagram and labeling of urinary system of fowl
- 22. Sketch diagram, labeling and demonstration of pituitary gland, thyroid, pancreas and adrenal glands

23. Structure of mammary gland and labeling
24. Bacterial cell and its components
25. Observing the permanent slides of important bacteria
26. Observing the colonies of important bacteria in selective medias
27. Sketch diagram of parasites and eggs of fasciola, schistosomes and amphistomes
28. Sketch diagram of parasites and eggs of taenia, echinococcus and moniezia
29. Sketch diagram of parasites of ascaridia, strongyloides, ankylostomes and filarial
30. Observation of slides of amebiasis, babesia, theilaria, coccidiosis, trypanosomes
31. Sketch diagram of ticks and mites
32. Observation of slide of ticks and mites

**1st YEAR PAPER - II
THEORY**

RUMINANT ANIMAL PRODUCTION & MANAGEMENT

| Sl.No. | Name of Chapter | No. of Periods |
|--------|--------------------------------------------------------------------------------------------|----------------|
| 1. | Introduction – Conformation points of large and small ruminants | |
| 2. | Breeds of Pig, Dairy cattle, Buffaloes, Sheep and Goat | |
| 3. | Housing, Hygiene and Sanitation of livestock farms | |
| 4. | Selection and breeding of ruminant livestock | |
| 5. | Feeding of ruminants | |
| 6. | Activities in livestock farms | |
| 7. | Lactation, Quality control and marketing of Dairy products | |
| 8. | Economics of ruminant livestock farms, AH Developmental Programmes and Livestock Insurance | |

**1st YEAR PAPER - II
THEORY**

RUMINANT ANIMAL PRODUCTION & MANAGEMENT

- 1. Introduction – Conformation points of large and small ruminants**
 - 1.1 Common terminology used in livestock management
 - 1.2 Livestock statistics
 - 1.3 Role of livestock farming in Indian economy
 - 1.4 Conformation points of Cattle, Buffalo, Sheep and Goats
- 2. Breeds of Pig, Dairy Cattle, Buffalo, Sheep and Goats**
 - 2.1 Breed definition – Classification of ruminant livestock breeds
 - 2.2 Identification of Indian and exotic breeds and their productivity
- 3. Housing, Hygiene and Sanitation of livestock farm**
 - 3.1 Selection of site for livestock farms
 - 3.2 Housing Systems for different age groups of livestock
 - 3.3 Layout, Space, ventilation and light requirements
 - 3.4 Hygiene and Sanitation in animal houses-Cleaning and fumigation of stores
 - 3.5 Biogas plant – Types, design and uses

- 4. Selection and Breeding of ruminant livestock**
 - 4.1 Selection and culling of Cattle, Buffaloes, Sheep and Goats
 - 4.2 Breeding definition – System of Breeding
 - 4.3 State and National breeding policies

- 5. Feeding of ruminants**
 - 5.1 Feeding definition – Common feeds and fodders
 - 5.2 Feeding of different age group
 - 5.3 Feeding of livestock under drought conditions
 - 5.4 Urea treatment of paddy-straw and use of UMMB
 - 5.5 Feed plant-feed mixing and machinery used for feed preparation
 - 5.6 Quality control of feeds – collection and processing of samples for feed analysis
 - 5.7 Importance of natural grass lands, control grazing
 - 5.8 Cultivation practices of Leguminous and Non-leguminous fodders
 - 5.9 Chaffing of fodders
 - 5.10 Fodder conservation – Hay preparation and Silage making

- 6. Activities in livestock farms**
 - 6.1 Daily farm routine of livestock farms
 - 6.2 Restraint of livestock
 - 6.3 Casting of livestock – methods
 - 6.4 Identification of livestock – methods
 - 6.5 Care and management of different age groups of livestock
 - 6.6 Weaning of ruminant animals
 - 6.7 Castration, Docking, Disbudding, Hoof trimming of livestock
 - 6.8 Shearing, Clipping, Dipping, Spraying and Deworming of livestock
 - 6.9 Management of animals while transportation
 - 6.10 Livestock farm records

- 7. Lactation, Quality control and Marketing of Dairy products and live animals**
 - 7.1 Importance of milk as human food
 - 7.2 Milk composition
 - 7.3 Milking of dairy animals-methods
 - 7.4 Importance of clean milk production
 - 7.5 Detection of adulterants and preservatives in milk
 - 7.6 Milk value addition – Ghee, Butter, Paneer & Khoa
 - 7.7 Judging of livestock

- 8. Economics of ruminant livestock farms, livestock insurance**
 - 8.1 Economics of Dairy farming
 - 8.2 Economics of sheep and Goat farms
 - 8.3 Project reports for small sized livestock farms
 - 8.4 Role of Dairy cooperatives and other livestock
 - 8.5 AH developmental programmes for upliftment of rural farmers
 - 8.5 Livestock Insurance – Economic implications

**1st YEAR PAPER - II
PRACTICALS**

RUMINANT ANIMAL PRODUCTION MANAGEMENT

1. Familiarization with Conformation points of Cattle, Buffalo, Sheep and Goat
2. Identification of Indian and Exotic breeds of Cattle, Buffalo, Sheep and Goat
3. Approach and Handling of Cattle and Buffalo
4. Approach and Handling of Sheep and Goat
5. Methods of restraint of ruminant
6. Methods of Casting of livestock
7. Methods of identification of livestock
8. Housing systems and lay out for different age groups of Cattle and Buffalo
9. Housing system and lay out for different age groups of Sheep and Goat
10. Floor space requirement for different age group of animals
11. Selection of Cattle and Buffaloes by score card methods
12. Culling of livestock
13. Feeding of colostrum to new born animals
14. Identification of important feeds and fodders
15. Demonstration of Hay preparation
16. Demonstration of Silage making
17. Urea treatment of paddy straw
18. Collection and processing of samples for feed analysis
19. Weaning of pig and ruminant animals
20. Castration, Docking, Disbudding, Hoof trimming of livestock
21. Shearing and Clipping
22. Dipping and Spraying
23. Deworming of livestock
24. Management of animals while transportation
25. Care and management of new born animals
26. Care and management of Dry and Pregnant animals
27. Care and management of milch animals
28. Care and management of breeding males
29. Various farm records and maintenance of stock and store
30. Hygiene and Sanitation in animals house – cleaning and fumigation of stores
31. Biogas plant – types, design and uses
32. Methods of milking
33. Sampling of milk, analysis of important constituents of milk
34. Visit to Dairy farms – Demonstration of various managerial practices
35. Visit to Sheep and Goat farm-Demonstration of various managerial practices
36. Visit to milk processing plant
37. Visit to slaughter house/abattoir
38. Study of Daily farm routine of livestock farms

**1st YEAR PAPER - III
THEORY**

LABORATORY TECHNIQUES AND PHARMACOLOGY

| Sl. No. | Name of Chapter | No. of Periods |
|---------|-----------------------|----------------|
| 1. | Laboratory equipment | |
| 2. | Preparations | |
| 3. | Laboratory techniques | |
| 4. | Radiology | |
| 5. | Pharmacology | |

**1st YEAR PAPER - III
THEORY**

LABORATORY TECHNIQUES AND PHARMACOLOGY

1. LAB EQUIPMENT

- 1.1 Microscope
- 1.2 Hot air oven
- 1.3 Bacteriological incubator
- 1.4 BOD incubator
- 1.5 Autoclave
- 1.6 Centrifuge
- 1.7 ELISA tester and reader
- 1.8 Spectrophotometer
- 1.9 PCR equipment
- 1.10 Water bath
- 1.11 pH meter
- 1.12 Electrophoresis apparatus
- 1.13 Blood analyser
- 1.14 Haemocytometer
- 1.15 Digital haemoglobinometer
- 1.16 Microtome
- 1.17 Colony counter

2. PREPARATIONS

- 2.1 Methods of sterilization of glassware
- 2.2 Preparation of common microbiological culture media
- 2.3 Preparation of stains
- 2.4 Preparation of laboratory reagents
- 2.5 Preparation of different anticoagulant solutions
- 2.6 Collection, preservation and dispatch of samples
 - 2.6.1 Blood
 - 2.6.2 Faeces
 - 2.6.3 Urine
 - 2.6.4 Sputum
 - 2.6.5 Skin scrapings
 - 2.6.6 Vaginal discharge

- 2.6.7 Different organs at post mortem
- 2.6.8 Milk
- 2.6.9 Meat
- 2.6.10 Water

3. LAB TECHNIQUES

- 3.1 Different staining procedures
 - 3.1.1 Gram's staining
 - 3.1.2 Spore staining
 - 3.1.3 Zeihl Nelson's staining
 - 3.1.4 Negative staining
 - 3.1.5 Fluorescent staining
 - 3.1.6 Leishman staining
 - 3.1.7 Giemsa staining
- 3.2 Processing of samples for parasitological examination
- 3.3 Identification of parasitic ova and parasites
- 3.4 Examination of blood – RBC count, WBC, PCV, Hb
- 3.5 Examination of milk for mastitis, adulterants & preservatives
- 3.6 Examination of skin scrapings

4. RADIOLOGY

- 4.1 Properties of X-rays and uses
- 4.2 Exposer and development of X-rays film

5. PHARMACOLOGY

- 5.1 Drug dosage forms
- 5.2 Prescription reading
- 5.3 Routes of drug administration
- 5.4 Common ointments
 - 5.4.1 Iodine ointment
 - 5.4.2 ZnO ointment
 - 5.4.3 Boric acid ointment
 - 5.4.4 Sulphur ointment
- 5.5 Carminatives & antacids
- 5.6 Analgesic, antipyretics, sedatives
- 5.7 General, Local and epidural anesthetics
- 5.8 Antihistaminic, common antibiotics, antifungal agents and disinfectants
- 5.9 Anthelmintic, antiprotozoal and ectoparasitocidal drugs

1st YEAR PAPER – III PRACTICALS

LABORATORY TECHNIQUES AND PHARMACOLOGY

- 1. Operation and maintenance of
 - a) Microscope
 - b) Hot air oven
 - c) Bacteriological incubator
 - d) BOD incubator

- e) Autoclave
 - f) Centrifuge
 - g) ELISA tester and reader
 - h) Spectrophotometer
 - i) PCR equipment
 - j) Water bath
 - k) pH meter
 - l) Blood analyser
 - m) Haemocytometer
 - n) Digital haemoglobinometer
 - o) Microtome
 - p) Colonycounter
2. Sterilization of glassware
 3. Preparation of different microbial culture medias
 4. Preparation of different staining solutions
 5. Preparation of different laboratory reagents
 6. Preparation of different anticoagulant solution
 7. Collection, preservation and dispatch of samples
 - a) Faeces
 - b) Urine
 - c) Blood
 - d) Sputum
 - e) Milk
 - f) Water
 - g) Skin scrapings
 - h) Nasal washings
 - i) Organs collected at postmortem examination
 8. Preparation and staining of blood smears
 - a) Gram's staining
 - b) Spore staining
 - c) Zeihl Nelson's staining
 - d) Negative staining
 - e) Fluorescent staining
 - f) Leishman staining
 - g) Giemsa staining
 9. Processing of dung sample for parasitological exam
 10. Processing of skin scrapings for parasitological exam
 11. Processing of nasal washings for parasitological exam
 12. Identification of parasitic ova and parasites
 13. Preparation of museum specimens
 14. Examination of blood for constituents
 15. Examination of milk
 - a) Physical examination of milk
 - b) Chemical examination of milk
 - c) Microbiological examination of milk
 16. Operation and maintenance of X-ray plant
 17. Exposure and development of X-ray films
 18. Preparation of ointments/mixtures
 18. Operation and maintenance of laboratory equipment

**2nd YEAR PAPER – I
THEORY**

NON-RUMINANT ANIMAL PRODUCTION & MANAGEMENT

| Sl. No. | Name of Chapter | No. of Periods |
|---------|---------------------------------------------------------------------------------------------------------------|----------------|
| 1. | Introduction – Conformation points and Common breed characteristics of Pet animals, Swine, Rabbit and Poultry | |
| 2. | Zoo animals – Care, Management and health cover | |
| 3. | Housing, Selection, Breeding and Feeding, Care and Management of different age groups | |
| 4. | Activities in livestock and Poultry farms | |
| 5. | Hatchery management | |
| 6. | Methods of slaughter, Principles of meat preservation and Effluent disposal | |
| 7. | Economics of Poultry and Swine farming, marketing of eggs, Chicken, Pork and live animals | |

**2nd YEAR PAPER – I
THEORY**

NON-RUMINANT ANIMAL PRODUCTION & MANAGEMENT

- 1. Introduction – Conformation points and common breed characteristics of Pet animals, Swine, Rabbit and Poultry**
 - 1.1 Common terminology used in livestock management
 - 1.2 Recent statistics
 - 1.3 Role of Poultry in Indian economy
 - 1.4 Eggs and Chicken Meat as human food
 - 1.5 Conformation points of Dog, Cat, Swine, Rabbit and Poultry
 - 1.6 Identification and Classification of Indian and exotic breeds and their productivity
- 2. Zoo animals – Care, Management and health cover**
 - 2.1 Introduction to zoo animals
 - 2.2 Importance of zoo animals
 - 2.3 Care, Management and health cover of zoo animals
- 3. Housing, Selection, Breeding and Feeding, Care and Management of different of different age group**
 - 3.1 Housing system for Pet animals, Swine, Rabbit and Poultry
 - 3.2 Layout, Space, water, ventilation and light requirements
 - 3.3 Selection and Culling
 - 3.4 Breeding Systems
 - 3.5 Feeding of Pet animals, Swine, Rabbit and Poultry
 - 3.6 Feed supplements and Additives for poultry
 - 3.7 Feed plant – feed mixing and machinery used for poultry feed preparation
 - 3.8 Brooding of chicks
 - 3.9 Management of poultry grower and layer
 - 3.10 Management of Broiler

- 4. Activities in livestock and Poultry farms**
 - 4.1 Daily farm routine of Swine and Poultry farms
 - 4.2 Handling and restraint of pet animals, Swine, Rabbit and Poultry
 - 4.3 Identification methods
 - 4.4 Care and management of different age groups of animals
 - 4.5 Care and management of layers and broiler in poultry farms
 - 4.6 Weaning of young ones
 - 4.7 Poultry farm equipment, Sanitation and disinfection of poultry houses
 - 4.8 Litter management in poultry farms
 - 4.9 Whelping and Grooming of Dogs
 - 4.10 Management of animals while transportation
 - 4.11 Poultry farm records

- 5. Hatchery management**
 - 5.1 Lay out of a hatchery
 - 5.2 Incubators, Setters and Hatchery – Cleaning and Disinfection
 - 5.3 Hatching eggs – Collection, Candling, Selection, Storage and Fumigation

- 6. Methods of slaughter, Principles of meat preservation and Effluent disposal**
 - 6.1 Methods of slaughter of food animals
 - 6.2 Principles of meat preservation
 - 6.3 Important meat products – Value addition
 - 6.4 Effluent disposal from livestock farms and industries

- 7. Economics of Poultry farming, Marketing of eggs, Chicken, Pork and live animals**
 - 7.1 Economics of Poultry farming
 - 7.2 Economics of Swine farming
 - 7.3 Marketing of Eggs, Chicken, Pork and live animals

**2nd YEAR PAPER – I
PRACTICALS**

NON-RUMINANT ANIMAL PRODUCTION & MANAGEMENT

1. Familiarization with conformation points of Dogs and Cats
2. Familiarization with conformation points of Swine, Rabbit and Poultry
3. Identification of Indian and exotic breeds of Dog, Cat, Swine, Rabbit and Poultry
4. Approach and handling of Pet animals and Swine
5. Methods of handling of Rabbit and Poultry
6. Methods of Restraint for Pet animals, Swine, Rabbit and Poultry
7. Methods of Identification of Pet animals, Swine, Rabbit and Poultry
8. Housing Systems and lay out for different age groups of livestock and Poultry
9. Floor space requirement for different age group of animals and poultry
10. Care, management and health cover of zoo animals
11. Feed supplements and additives for poultry
12. Vaccination schedule, Deworming of Pet animals
13. Control of ecto-parasites in pet animals
14. Management of animals while transportation
15. Care and management of new born animals

16. Care and management of Pregnant animals
17. Care and management of nursing animals
18. Care and management of breeding males
19. Weaning of young ones
20. Poultry farm equipment, sanitation and disinfection of poultry houses
21. Litter management in poultry farms
22. Visit to Swine and Rabbit farms-demonstration of various managerial practices
23. Visit to Poultry farm-demonstration of various managerial practices
24. Visit to zoo park
25. Visit to kennel
26. Visit to Dog show
27. Poultry farm records and maintenance of stock and stores
28. Lay out of a hatchery
29. Incubators, Setters and Hatchery, Cleaning and disinfection
30. Hatching of eggs, candling of eggs, collection, selection, storage and fumigation
31. Methods of slaughter of food animals
32. Principles of meat preservation
33. Meat products – Value Addition
34. Effluent disposal from livestock farms and industries
35. Daily farm routine of Swine, Rabbit and Poultry farms
36. Various farm records

**2nd YEAR PAPER – II
THEORY**

COMMON LIVESTOCK DISEASES AND THEIR PREVENTION

| Sl. No. | Name of chapter | No. of periods |
|---------|----------------------------------------------|----------------|
| 1. | Health | |
| 2. | First Aid | |
| 3. | Bacterial disease | |
| 4. | Viral diseases | |
| 5. | Protozoan diseases | |
| 6. | Ecto and Endo parasitic diseases | |
| 7. | Mycotic diseases | |
| 8. | Production diseases | |
| 9. | Zoonotic diseases | |
| 10. | Diseases of new born | |
| 11. | Principles of disease control and prevention | |

**2nd YEAR PAPER – II
THEORY**

COMMON LIVESTOCK DISESES AND THEIR PREVENTION

1. **Health**
 - 1.1 Definition of health and disease
 - 1.2 Signs of health

2. First Aid

- 2.1 Definition of first aid and its principles
- 2.2 First aid kit
- 2.3 Attending to common emergencies

3. Bacterial diseases

- 3.1 Classification of diseases of livestock – Bacterial, viral, protozoal, ectoparasitic, endoparasitic production, zoonotic etc,
- 3.2 Anthrax
- 3.3 Black Quarter
- 3.4 Brucellosis
- 3.5 Haemorrhagic septicaemia
- 3.6 Tuberculosis
- 3.7 Johne's disease
- 3.8 Leptospirosis
- 3.9 Listeriosis
- 3.10 Tetanus
- 3.11 Colibacillosis
- 3.12 Enterotoxemia
- 3.13 Mastitis
- 3.14 Pneumonia
- 3.15 Pullorum disease

4. Viral diseases

- 4.1 Foot and mouth disease
- 4.2 Rabies
- 4.3 Infectious Bursal Disease (IBD)
- 4.4 Pestis petis de ruminants (PPR)
- 4.5 Pox diseases: Buffalo pox, cow pox, sheep pox, goat pox, fowl pox
- 4.6 Hog cholera
- 4.7 Porcine Reproductive and respiratory syndrome (PRRS)
- 4.8 Ranikhet disease
- 4.9 Swine fever (African and Classical)

5. Protozoan diseases

- 5.1 Anaplasmosis
- 5.2 Babesiosis
- 5.3 Theileriosis
- 5.4 Trypanosomiasis
- 5.5 Leishmaniasis
- 5.6 Coccidiosis

6. Ecto and endoparasitic diseases

- 6.1 Flies
- 6.2 Ticks and Mites
- 6.3 Round worms
- 6.4 Tape worms
- 6.5 Liver fluke
- 6.7 Stomach flukes
- 6.8 Nasal schistosomiasis

- 7. Mycotic disease**
 - 7.1 Ringworm
 - 7.2 Aspergillosis

- 8. Production diseases**
 - 8.1 Milk fever
 - 8.2 Ketosis
 - 8.3 Pregnancy toxaemia

- 9. Rumen dysfunctions**
 - 9.1 Bloat
 - 9.2 Acid indigestion
 - 9.3 Alkaline indigestion

- 10. Zoonotic diseases**
 - 10.1 Viral Zoonoses – Rabies, Japanese encephalitis
 - 10.2 Bacterial Zoonoses – TB, Brucellosis, Salmonellosis, Leptospirosis
 - 10.3 Parasitic Zoonoses – Hydatidosis, Amoebiasis/Amebiasis

- 11. Diseases of new born**
 - 11.1 Calf scour
 - 11.2 Calf septicaemia
 - 11.3 Ascariasis
 - 11.4 Pneumonia
 - 11.5 Hypoglycaemia and Hypothermia
 - 11.6 Piglet Anaemia

- 12. Principles of Disease control and prevention**
 - 12.1 Isolation of sick animals
 - 12.2 Disinfection of premises
 - 12.3 Quarantine
 - 12.4 Hygienic disposal of dead animals
 - 12.5 Vaccines: types of vaccines, handling, storage

**2nd YEAR PAPER – II
PRACTICALS**

COMMON LIVESTOCK DISEASES AND THEIR PREVENTION

1. Recording temperature, pulse and respiration
2. Identification of sick animals
3. Study of first aid kits
4. Maintenance of first aid kit
5. Vaccination schedules for livestock, pet animals and poultry
6. Deworming schedules for livestock, pet animals and poultry
7. Screening of animals for diseases – Mastitis, Tuberculosis, Brucellosis
8. Common drugs used in Dispensary
9. Identification and usage of common chemicals used in hospital
10. Various fluids used in rehydration therapy

11. Collection and dispatch of materials in various disease conditions
12. Examination of milk for detecting Mastitis – Strip cup test, CMT (California Mastitis Test)
13. Attending to Veterinary Hospitals for observing and recording signs exhibited by animals in various disease conditions

**2nd YEAR PAPER - III
THEORY**

**ANIMAL REPRODUCTION, HOSPITAL MANAGEMENT AND SURGICAL
NURSING CARE**

| Sl. No. | Name of Chapter | No. of Periods |
|---------|-----------------------------------------------------|----------------|
| 1. | Female Reproduction | |
| 2. | Artificial Insemination and Frozen semen Technology | |
| 3. | Hospital Management | |
| 4. | Surgical Nursing Care | |
| 5. | Animal Welfare | |
| 6. | Common offences against animals in India | |

**2nd YEAR PAPER - III
THEORY**

**ANIMAL REPRODUCTION, HOSPITAL MANAGEMENT, SURGICAL NURSING
CARE AND ANIMAL ELFARE**

- 1. Female Reproduction**
 - 1.1 Estrus cycle in livestock
 - 1.2 Signs of heat
 - 1.3 Detection of heat
 - 1.4 Gestation
 - 1.5 Gestation period in livestock
 - 1.6 Parturition
 - 1.7 Stages of parturition
 - 1.8 Anaestrus
 - 1.9 Dystocia
 - 1.10 Retained Placenta
 - 1.11 Pre partum prolapse of vagina
 - 1.12 Post partum prolapse of uterus
 - 1.13 Endometritis
 - 1.14 Pyometra
 - 1.15 Infertility – Cause and prevention

- 2. Artificial Insemination (AI) and Frozen semen Technology**
 - 2.1 Advantages and Disadvantages of AI
 - 2.2 Equipment required in AI
 - 2.3 Semen collection, processing and evaluation
 - 2.4 Preservation of frozen semen
 - 2.5 Insemination technique
 - 2.6 Liquid Nitrogen containers
 - 2.7 Precautions for successful AI

3. Hospital Management

- 3.1 Registration of cases
- 3.2 History taking
- 3.3 Observation and recording of disease signs
- 3.4 Collection and dispatch of clinical specimen-Urine, Blood, Tissues etc
- 3.5 Maintenance of Hospital records
- 3.6 Maintenance of Out patient and In patient wards
- 3.7 Care and management of In patient animals
- 3.8 Different methods of drug administration – oral, intra muscular, intra venous, sub cutaneous etc.
- 3.9 Sterilization of syringes and needles
- 3.10 Disinfection of Operation Theatre

4. Surgical Nursing Care

- 4.1 Sterilization Techniques
- 4.2 Pre-operative preparation of animals
- 4.3 Post-operative care
- 4.4 Surgical Instruments
- 4.4 Suture materials
- 4.5 Suture patterns, instruments and technique
- 4.4 Wound dressing
- 4.5 Dressing materials
- 4.6 First Aid in hemorrhage and fracture

5. Animal Welfare

- 5.1 Meaning of Animal welfare
- 5.2 Goal of animal welfare
- 5.3 Norms for feeding management of animals
- 5.4 Common systems of animal transport
- 5.5 Restraint, handling and first aid of large animals
- 5.6 Restraint, handling and first aid of pet animals and birds
- 5.7 Legal provisions for animal welfare

6. Common Offences against Animals in India

- 6.1 Mischief
- 6.2 Cruelty against animals
- 6.3 Bestiality

**2nd YEAR PAPER – III
PRACTICALS**

**ANIMAL REPRODUCTION, HOSPITAL MANAGEMENT AND SURGICAL
NURSING CARE**

- 1. Obstetrical Instruments
- 2. Sterilization of Equipment
- 3. Palpation of Reproductive organs collected from slaughter house
- 4. Preparation of artificial vagina

5. Collection of semen from different livestock species
6. Cleaning and sterilization of AI equipment
7. Handling of Liquid Nitrogen containers
8. Thawing of semen straw
9. Practicing AI
10. Maintenance of AI related Registers
11. Practicing all routes of drug administration
12. Casting and restraint of animals at the hospital
13. Identification of surgical Instruments
14. Dressing of wounds
15. Preparation of surgical packing of large and small animals
16. Closed method of castration
17. Assisting in major operations like Dystocia, Laparotomy etc.
18. Attending to Veterinary hospital and exposure to daily routine of hospital
19. Hands on training in:
 - a) Registration of cases
 - b) History taking
 - c) Observation and recording of clinical cases
 - d) Collection and dispatch of specimen in various diseases, urine, blood, skin scrapings etc.