# Veterinary Physiology

1. **Muscle Contraction and Neuromuscular Physiology**
    - 1.1 Rigor mortis and fatigue
    - 1.2 Types of muscle
    - 1.3 Physiology of muscle contraction
    - 1.4 Membrane and action potential at myoneuronal junction
    - 1.5 Contractile process of smooth muscle
    - 1.6 Nervous System
    - 1.7 Physiological properties of muscle
    - 1.8 Autonomic Nervous System
    - 1.9 All or non-character of nerve impulses

2. **Cardiovascular, Blood and Respiratory Physiology**
    - 2.1 Heart beat and sound
    - 2.2 Conduction system
    - 2.3 Cardiac cycle
    - 2.4 Cardiac output
    - 2.5 Nervous and chemical regulation of heart
    - 2.6 Blood cells
    - 2.7 Physiology of blood coagulation.
    - 2.8 Vascular system and pulmonary circulation
    - 2.9 Respiratory apparatus and mechanism of respiration
    - 2.10 Composition of inspired and expired air
    - 2.11 Gas laws
    - 2.12 Adaptation of respiration during muscle exercise.

3. **Digestive Physiology**
    - 3.1 Deglutination and digestion in simple stomach
    - 3.2 Digestion in rumen.
    - 3.3 Absorption from simple stomach
    - 3.4 Nervous control of digestive process
    - 3.5 Digestion in poultry.

4. **Physiology of Animal Reproduction**
    - 4.1 Male and female reproductive organ
    - 4.2 Sexual maturity
    - 4.3 Pattern of estrous cycle in different animal and birds
    - 4.4 Oogenesis and follicular development
    - 4.5 Ovulation and fertilization
    - 4.6 Pregnancy and physiology of parturition

4.7 Functional anatomy of male reproductive organ
4.8 Thermoregulation of testes
4.9 Sexual behavior
4.10 Avian reproduction

**5. Endocrinology**

5.1 General endocrine system
5.2 Interrelation between endocrine and nervous system
5.3 Structure of hypothalamus and pituitary gland
5.4 Neural control of oxytocin
5.5 Adrenocorticotrophine hormone
5.6 Hypothalamic releasing factor and neurovascular link between brains and anterior pituitary.
5.7 Influence of hormone in brain activity
5.8 Neuro-endocrine mechanism in birds
5.9 Endocrine-nervous and immune system interaction
5.10 Negative feedback mechanism

**6. Climatology and Environmental Physiology and Growth**

6.1 Physiology of growth
6.2 Animal ecology
6.3 Regulation of growth
6.4 Physiological reaction to environmental changes
6.5 Climatology-various parameter and their importance
6.6 Reaction of animal to different environmental variation
6.7 Central control of heat regulations
6.8 Temperature regulation in birds

**7. Renal Physiology, Blood Fluid Dynamics and Excretory System**

7.1 Kidney structure of nephrone
7.2 Blood supply in kidney
7.3 Role in kidney in acid base electrolyte balance
7.4 Excretion of urine in birds
7.5 Endocrine control of renal function
7.6 Glomerular filtration-its mechanism and measurement
7.7 Renal haemostatic function
7.8 Renal excretory function
7.9 Tubular re-absorption and transport

**8. Physiology of Stress**

8.1 Various types of stresses, their effect on animal production and reproduction
8.2 Physico-chemical changes of blood composition due to exercise and work.
8.3 Factors that regulate capacity of work
8.4 Effect of various stress on endocrine status of animals
8.5 Endurance in animal

**9. Physiology of Lactation**

9.1 Mammary gland: functional organization, structure and development
9.2 Endocrine control of initiation and maintenance of lactation
9.3 Colostrums
9.4 Composition of milk in different species of animals.
9.5 Biochemical and histological changes in mammary gland during lactation
9.6 Mechanism of galactopoisis
9.7 Neural control of lactation, milk let down, milk ejection and inhibition of milk ejection
9.8 Induced lactation

**10. Physiology of Animal Behavior**

10.1 Introduction to animal ethology
10.2 Neurophysiological basis of animal behavior.
10.3 Behavior in relation to changes in the environment
10.4 Feeding behavior, grazing, stall feeding and rumination
10.5 Sexual behavior in male and female
10.6 Social behavior, communication in animal
10.7 Response of dogs and horses to training