

**TAMIL NADU PUBLIC SERVICE COMMISSION**  
**SYLLABUS**

**Code No.172**

**SUBJECT: VETERINARY SCIENCE (DEGREE STANDARD)**

**UNIT I: General**

Role of livestock and their products in Indian economy and human health; current livestock programmes and policies of state and Nation - economics of dairy, sheep, goat, poultry, pig and rabbit farming; constraints to the livestock development programs, common offences against animals – SPCA , Animal Welfare Board of India, NGOs.

**UNIT II : Livestock Management**

Common terms used in Animal Husbandry – Identification of age of animals - Livestock and poultry breeds and breed characters; housing systems, and requirements of space, ventilation, water, sanitation and waste disposal.

Management of milk, meat, egg and wool producing livestock, breeding bulls and draft animals and wild animals in captivity, farm records and their maintenance; systems and strategies for livestock improvement for enhancing productivity.

**UNIT III: Livestock Nutrition**

Nutritional terms and definitions - Role of nutrition in health and production; classification and composition of feeds and fodders including forest grasses; anti-nutritional factors and toxins in feeds and fodders; feeding standards and nutrient requirements of different categories of livestock and computation of rations.

Nutritional deficiency and its influence on livestock performance; feed supplements and additives; conservation and preservation of feeds and fodders; economic utilization of agro-by-products for feeding livestock. - utilization of unconventional feeds – Wildlife nutrition.

**UNIT IV: Livestock Breeding and Genetics:**

Important breeds of cattle, buffalo, sheep, goat, pig and poultry with special reference to economic characters – Important species of wild animals and their breeding in captivity. Breeding livestock for high performance and disease resistance; principles of genetics; nature of DNA and RNA-their models and functions; applications of recombinant DNA technology, cloning and role of gene actions and cytogenetics. Animal breeding policies and programmes in state and Nation.

## **UNIT V Veterinary Anatomy, Physiology and Biochemistry:**

Gross study of bones, joints and muscles of skeleton. Gross study of heart and its conduction system. Gross study of organs of digestive, respiratory urinary and reproductive systems. Digestion, metabolism and absorption of carbohydrates, proteins and fats in simple stomach animals and ruminants - mechanism of respiration. General functions of blood (blood cells, plasma & serum) coagulation, cardiac cycle, Blood circulation, Blood pressure, renal function. Hormonal control of Lactogenesis. Environmental factors affecting animal production – Environmental stress on animal performance – Green Houses Gases – Role of ruminants

## **UNIT VI Veterinary Microbiology, Pathology, Parasitology and Pharmacology:**

Concept and causes of diseases in animals; general principles and procedures of necropsy; collection, preservation and dispatch of morbid materials for laboratory diagnosis, disease investigation; common pathological conditions seen in wild zoo and laboratory animals and birds. Immune system organs, tissues and cells; infection and immunity; type and grade of immunity, serological reactions and modern diagnostic techniques – vaccine.

Classification of Parasites - Parasites and parasitism in animals; important morphological features, life-cycles, mode of transmission, pathogenesis, diagnosis, chemotherapy and general control measures of parasites associated with disease in animals, birds and zoo animals.

Drug action - Pharmacokinetics (absorption, distribution, biotransformation and excretion), Pharmacodynamics - local and general anaesthetics. Antibiotics and chemotherapy - Toxicology.

## **UNIT VII :Veterinary Epidemiology, Medicine and Public Health:**

Environmental hygiene; role of veterinarian in public health; zoonoses including food-borne diseases: concept, scope, objectives and uses of epidemiology – classification – mode of transmission – method of prevention – control and eradication, of infectious diseases.

Infections including major contagious diseases and noninfectious diseases affecting livestock, birds and wild animals aetiology, clinical examination symptoms, pathogenesis, diagnosis and differential diagnosis, treatment and control, establishment of Animal Healthcare Centres.

### **UNIT VIII: Veterinary Gynaecology and Obstetrics:**

Reproductive physiology; hormones and reproduction; livestock fertility; artificial insemination; semen characteristics of different species of livestock and cryo-preservation. Multiple ovulation and embryo transfer technology in livestock, and zoo animals Reproductive disorders and their management.

### **UNIT IX: Veterinary Surgery and Radiology:**

General surgical principles - pre and post-operative considerations, anesthesia, asepsis and anti-sepsis and sterilization; scope, history and development of veterinary radiology; radiographic pathology of different parts of body- surgical emergencies – intensive care – Physiotherapy – diathermy.

### **UNIT X: Livestock Products Technology:**

Ante mortem and Post mortem inspection – Objectives of meat inspection - Abattoir practices, methods of slaughtering and dressing; Meat Inspection Laws, utilization of by products; unsound meat and its disposal; quality control of meat and eggs and their products. Milk: Proximate Composition, milk collection, cooling / chilling and transportation; physio-chemical and nutritional characters of milk and milk products; processing of raw milk and production of market milk. Condensed and dried milk, special milk and Indian Dairy Products-packaging and storage.

Cleaning and sanitization of dairy equipments and plants; role of micro-organisms in milk and milk products; legal standards and quality assessment of milk and milk products – role of milk and milk products, meat and egg in human nutrition – detection of adulterants in milk.

## References:

1. Helminths, Arthropods and protozoa of domesticated animals by W. J. L. Soulsby – 7<sup>th</sup> Edition – ELBS Edition Bailliere Tindall.
2. Veterinary Parasitology by U.M. Urquhart, - J. Armour, J.L. Duncan, A.M. Dunn & A.W. Jennies. Publisher : Baillere and Tindall – ELBS Edition.
3. Essential of Veterinary Surgery – Venugopal Publisher: Oxford and IBH Publishing Co., Pvt. Ltd., Calcutta.
4. Dollars Veterinary Surgery J.J.O. CONNOR 4<sup>th</sup> Edition. CBS Publishers and Distributors 485, Jain Bhawan Bhola Nath Nagar, Shahdara, Delhi – 100 032.
5. Extension Education – Adivi Reddy Publisher : Sree Lakshmi Press, Babatala, Krishna t., Andhra Pradesh.
6. Education and Communication for Development – O.P. Dohama & O.P. Bhatnagar Publisher : Oxford & IBH Publishing Com. New Delhi.
7. Veterinary Medicine : A Text book of the disease of Cattle, Sheep, Dogs, Goat and Horses 8<sup>th</sup> Edition. Author : Blood D.C., Radosits O.M. English Language book society / Bailliere Tindall.
8. Veterinary Clinical Diagnosis, Kelly W.R. Bailliers Tindall, 1<sup>st</sup> Anne's Road, East bourne East sussex BM 21 3 UK.
9. Harper's Text Book of Biochemistry – by Murray (Robert. K) Etc., Publisher: Prentice Hall, International Inc.,
10. Text book of Biochemistry – G.R. Agarval & O.P. Agraval.
11. Duke's Physiology of Domestic Animals 11<sup>th</sup> Edition Publisher: Comstock, Cornell University Press.
12. Veterinary Reproduction and Obstetrics 6<sup>th</sup> Edition – Arthur G.H. & Etc. Publisher: ELBS.
13. Reproduction in DOMestic Animals – Cole (H.H) and Cupps (P.T) 4<sup>th</sup> Edition Publisher : Academic Press Inc.
14. Meat Hygiene, 4<sup>th</sup> Edition James A Libby, Lea & Febiger, Philadelphia 1975.
15. The Meat We Eat, 11<sup>th</sup> Edition Johnson R. Romans & P. Thomas Ziegler, The Interstate Printers and Publishers Inc.
16. The Anatomy of Domestic Animals 2 Volumes – Robert Getty. The Macmillan India Ltd., Madras – 2.
17. Text Book of Developmental Anatomy – L.B. Arey Asia Publishing House, Bomaby.
18. Fundamental Principles of Bacteriology by A.J. Salle Publisher: Tata McGraw Hill Publishing Company, New Delhi.
19. Medical Microbiology – Robert Cruickshank Publisher: English language book society and E & S Livingstone Ltd.,
20. Poultry production – B. Panda and S.C. Mohapatra Publisher: I.C.A.R. Publication.
21. Poultry Nutrition by K.S. SIngh & B. Panda Publisher: Kalyani Publications.
22. Veterinary Applied Pharmacology and Therapeutics – G.C. Brander D.M.-Pugh Publisher: ELBS.
23. Veterinary Pharmacology and Therapeutics by L. Meyar Jones Publisher: Comstock Cornell University Press.

24. Infectious Diseases of Domestic animals – Hagan & Bruner Publisher: Comstock Cornell University Press.
25. Diseases of Livestock – Hungerford Publisher: McGraw Hill Book Company.
26. Farm Animal Management & Poultry Production – N.S.r. Sastry and C.K. Thomas.
27. Livestock and Poultry Production – Harban Singh and Moore Publisher : Prentice Hall India.
28. Statistical Methods – S.P. Gupta Publisher : Sultan Chand & Sons.
29. The Design and Analysis of experiments by Kempthorne O. Publisher: Wiley, Newyork.
30. Fundamentals of Farm Business Management – S.S. Joshi and T>R. Kapur Publisher : Kalyani Publishers.
31. Modern Economic Theory – K.K. Dewett and A. Chand.
32. A text book on Biotechnology – H.D. Kumar, Publisher: Affiliated East West Pvt. Ltd., New Delhi.
33. Biotechnology – Principles and application – Higgin, Best and Jones Blackwell Scientific Publication, Oxford.
34. Animal Nutrition – Mc Donald, R.A. Edwards & J.F.D Green Halgh 4<sup>th</sup> Edition 1988 Longman Scientific and Technical John Wiley & Sons Inc.
35. Animal Nutrition – A. Maynard and K. loosli, 7<sup>th</sup> Edition, TataMcGraw Hill Company Ltd., New Delhi.
36. Principles of Agronomy by Subbiah (V.T.) Publisher: Bangalore Printing & Publishing Co., Ltd., Bangalore – 18.
37. Dairy Science – Petersen (W.E.) Publisher : Lippincott and Company.
38. Outlines of Dairy Technology – Sukumar (De) Oxford University Press.
39. Indian Dairy Products – Rangappa (K.S.) & Acharya (K.T.) Asia Publishing House.
40. The UFAW Hand book on the care and Management of Laboratory Animals Authors / Editors – UFAW, C.W. Hume Publisher: Churchill Livingston, 6<sup>th</sup> edition.
41. Laboratory Animal Medicine – James G. Fox, Bennett J. Chechen Franklin M. Loew Academic Press Inc., (Harcourt Brace, Jovanowich).
42. Veterinary Pathology – Jones (Thomas Carlyle) 5<sup>th</sup> edition 1989 Lea & Febgiger.
43. Veterinary Clinical Pathology Embert H. Coles Publisher: W.B. Saunders Company.
44. Genetics of Livestock Improvement by J.F. Lasley Publisher: Prentice Hall, New Delhi.
45. Principles of Genetics by Gardener. E.J. Publisher : Kliley Eastern Pvt. Ltd., New Delhi.
46. Genetics by A.M. Winchester Publisher: Oxford IBH.