**SYLLABUS FOR THE SUBJECT OF VETERINARY SCIENCE**

**PAPER – I**

**Total Marks: 100**

**Anatomy and Physiology**

General terms used in Anatomy and Physiology. Anatomy and Physiology of

different systems such as Digestive System, Cardiovascular System, Respiratory

System, uro-general system, Endocrine Glands, Nervous System, Sense Organs.

Comparative Anatomy and Physiology of different systems of various domestic animals.

**Pharmacology and Toxicology**

Terminology Drug development and drug regulation. Sources of drugs and drugs

classification. Physiochemical properties of drugs, Disposition and bioavailability of

drugs. Structure activity and dose response relationship, Drug Resistance, Drug safety,

adverse effects, tissue residue and public health. Pharmacology of drugs affecting

various systems, Chemotherapeutic agents, antibiotics, antifungal, antiviral, antiparasitic

drugs. Terms used in toxicology, Forensic toxicology, Sources of poisoning and

poisonous plants. Specific and non specific antidote therapy.

**Parasitology**

Effects of parasites on their host and their economic significance. Immunity and

resistance of parasites. Mode of action of anti-parasitic drugs. Parasitic zoonoses

examples, Epidemiology, Diagnosis, Pathogenesis and control of various parasites such

as Protozoa (Trypanosoma, Toxoplasma, Babesia, Theileria, Coccidia, Etc). Helminthes

(Ascariasis, strongylosis, haemonchus, oestertagia, fasciolosis, schistosoma,

Ectoparasites (mange, mite, ticks, flies).

**Microbiology**

General Microbiology, Diversity of Microbes, Prokaryotes Vs Eukaryotes. Physochemical

requirements of microbes. Microbial preservation and microbial genetics.

Immunity natural and acquired. Antigen antibody essential features. Macrophage, B and

T lymphocytes Immunoglobulin, regulation of immune response. Theories of antibody

formation. Vaccines production, vaccination, autoimmunity., autoimmune diseases.

Bacteriology and mycology classification, general characters disease association and

diagnosis. Virology properties of viruses and classification, Bacterophages,

Physiochemical characteristics, isolation, identification, immunity and disease

association, Important viral diseases, rabies, rinderpest, Foot and mouth disease, PRR,

BVD, BSE, ND, Avian Influenza, etc.

**Pathology**

Common terms, cell injuries and cell death. Disturbance of circulation,

inflammation, repair and healing of wounds and fractures. Neoplasia its cause and

classification. Pathology of different organs. Meat inspection. Characteristics of good

quality meat, differentiation of meat of different animals. Objectives of meat inspection

Ante-mortem and postmortem examination. Specific and non specific lesions. Disposal

of condemned meat. Laws governing meat inspection in Pakistan. Collection

preservation and dispatch of laboratory specimens. Hematological examination and its

significance. Bone marrow evaluation, urine and faecal examination, liver and kidney

function test. Plasma protein profile, electrolyte and acid base balance. Exfoliative

cytology.

**Reproduction**

Regulation of hormones, Physiology of estrous cycle. Fertilization, Implantation,

gestation and parturition, male reproductive system. Biotechnology and recent trends.

Artificial insemination technique, estrus synchronization, embryo transfer, Genetic

engineering, nuclear transfer and cloning. Disease of reproduction, cervicovaginal

prolapse, post partum complications, uterine infections, infertility problems, Genetic and

acquired abnormalities of testis accessory sex glands and infertility problems in males.

**Veterinary Medicine**

General Terms (Fever, Toxemia, Septicemia, Anaphylaxis, Shock, etc.) Diseases

of different systems: G.I.T. (Acidosis, Tympany, Enteritis, equine colic) Liver (hepatitis,

jaundice, cholilithiasis) Respiratory system (rhinitis, laryngitis, bronchitis, pneumonia,

hydrothorax, epistaxis, pleurisy). Nervous Systems (encephalitis, meningitis) Urinary

System (Nephritis, Urolithiasis, Pyelonephritis, Cystitis) Others (arthritis, Ostemyelitis,

Dermatitis, Seborrhea, Photosensatization, Tumors, Cysts, Keratoconjuctivitis, Cataract,

Glaucoma, Otitis), Infectious and Non-Infectious diseases of domestic animals.

**Surgery**

Fluid replacement therapy and blood transfusion. Management of accidents

shock and emergency cases. Small/Large Animal Surgery. General Surgical

considerations. Fluid therapy in surgical patients, tissue regeneration, wound healing.

Scope of radiology in Veterinary Practice X-ray machine and its working. Nature and

production X-ray exposure factors. Radiation hazards and protection X-ray film and its

type. Processing of Films. Basic principles to study radiograph. Qualities of good

radiograph. Shoeing and its evaluation. Blemishes and vices in animals. Soundness

examination, colours and marking in equines.

**Veterinary Eipdemiology**

Principles of epidemiology and its relation to public health. Determinants of

disease, Vital Statistics, Incidence, Prevalence, Patterns and disease ecology.

Surveillance and monitoring, data collection and interpretation. Analytical epidemiology,

Cohort or prospective study, case-control or retrospective study. Experimental

epidemiology, clinical trials, field trial or community trials. Epidemic investigation.

Control and eradication of transboundary and other infectious diseases. Diseases

transmissible to human beings through milk and other diary products, Meat, Poultry and

other foods. Urine and feaces of animals. Environment and residues. Sanitary and

phyto-sanitary measures for the prevention of disease during export and import

livestock products. Role of veterinary public health in producing safe human food

according to WTO standards. Personal hygiene and public sanitation. Active and

passive surveillance. Writing a research report.

**RECOMMENDED BOOKS**

*1. Cunnigham. I. G. 2002. Text Book of Veterinary Physiology. W. B. Sanders Co.*

*3rd Edition. USA.*

*2. Adams. H.R., 2001. Veterinary Pharmacology & therapeutics, 8th Ed. Lowa State*

*University Press USA.*

*3. Urquhart. G.M.J. Armour, J.L. Duncan. A.M. Dunna and F.W. Jennings. 2000.*

*“Veterinary Pharasitiology”. Longman Scienctific and Technical, UK.*

*4. Quinn, P.J., 2002. veterinary Microbiology and Microbial Disease. 1st. Ed.*

*Blackwell Science, Ltd., USA.*

*5. Latimer, K.S., E.A. Mahaffey and K.W. Prasse, 2003. Duncan & Prasse’s*

*Veterinary Laboratory Medicine Clinical Pathology. 4th Ed., lowa State Press.*

*Ames, lowa, USA.*

*6. Kumar, V.R.S. Cotran and S.L. Robbins, 2003. Robbins Basic Pathology, 7th Ed.,*

*Saunders, Philadelphia, Pennsylvania, USA.*

*7. Hafez, E.S.E., 2000. Reproduction in Farm Animals. 7th Edition., Lea and*

*Febiger, Philadephia, USA.*

*8. Radosits, O.M., C.C. Gay, D.C. Blood and K.W. Hincheliff, 2000. veterinary*

*Medicine, 9th Ed. Bailliere Tindall, London, U.K.*

*9. Thrusfield, M., 2005, Veterinary Epidemiology, 3rd Ed. Blackwell Science,*

*London, UK.*

*10. Jones, H.J., M. W. Hubbert and H. Hagstard, 200. zoonoses-Recognition.*

*Control and Preventio. Blackwell Science, Ltd., Oxford, UK.*