

DEPARTMENT OF VETERINARY PHARMACOLOGY AND TOXICOLOGY

SEMESTER -V

GENERAL AND SYSTEMIC VETERINARY PHARMACOLOGY

VPT-311

Credit Hours 2+1= 3

THEORY

Historical development branches and scope of Pharmacology. Sources and nature of drugs. Pharmacological terms and definitions. Principles of drug activity: Pharmacokinetics - Routes of drug administration, absorption, distribution, biotransformation and excretion of drugs. Pharmacodynamics-Concept of drug and receptor, dose-response relationship, terms related to drug activity and factors modifying the drug effect and dosage. Fundamentals of drug-screening and assay of drugs. Adverse drug reactions, drug interaction, drug- designing and development, bio prospecting of drugs. Introduction to biopharmaceutics and gene therapy.

Drugs acting on digestive system: Stomachics, antacids and antiulcers, prokinetics, carminatives, antizymotics, emetics, antiemetics, purgatives, antidiarrhoeals, cholerectics and cholagogues. Rumen pharmacology.

Drugs acting on Cardiovascular system: cardiac glycosides, antiarrhythmic drugs, vasodilators and antihypertensive agents, haematjcnics, coagulants and anticoagulants.

Drugs acting on respiratory system: Expectorants and antitussives, respiratory stimulants, bronchodilators and mucolytics.

Drugs acting on urogenital system: Diuretics, urinary alkalizers, and acidifiers, fluid therapy, ecbolics and tocolytics.

Pharmacotherapeutics of hormones and vitamins.

Drugs acting on skin and mucous membranes: Emollients, demulcents and counter irritants. Bio-enhancers, Immunostimulants and immunosuppressants. New drugs and drug formulations.

PRACTICAL

Pharmacy appliances. Principles of compounding and dispensing.

Metrology: systems of weights and measures, pharmacy calculations. Pharmaceutical processes. Pharmaceutical dosage forms Prescription writing, incompatibilities. Drug standards and regulations, Custody of poisons. Compounding and dispensing of powders, ointments, mixtures, liniments, lotions, liquors, tinctures, emulsions, and electuaries.

SEMESTER- VI

VETERINARY NEUROPHARMACOLOGY

VPT-321

Credit Hours 2+1=3

THEORY

Drugs acting on autonomic nervous system: Neurohumoral transmission, adrenoceptors agonists and antagonists, adrenergic- neuron blockers, cholinceptors agonists and antagonists, ganglionic stimulants and blockers.

Autacoids: Histamine and antihistamine agents, 5-Hydroxytryptamine and its antagonists, prostaglandins, angiotensin and bradykinin.

Drugs acting on central nervous system (CNS): Pharmacology of neurotransmitters History of general anaesthetics and theories of anaesthesia. Inhalent, intravenous and dissociative anaesthetics; hypnotics and sedatives; tranquilizers, psychotropic drugs, anticonvulsants, opioid analgesic, nonsteroidal anti-inflammatory drugs, analeptics and other CNS stimulants, central muscle relaxants.

Drugs acting on somatic nervous system: Local anaesthetics and peripheral muscle relaxants. New drugs and drug formulations.

PRACTICAL

Demonstration of the effect of CNS depressants, analgesics, CNS stimulants, muscle relaxants, anticonvulsants, local anaesthetics in laboratory animals.

Demonstration of the action of adrenergic and cholinergic agonists and antagonists on isolated and intact preparations of the animals

Alternate use of animals as model for demonstration

SEMESTER- VII

VETERINARY CHEMOTHERAPY

VPT-411

Credit Hours 2+0=2

THEORY

Antibacterial agents: Classification, general principles in antibacterial chemotherapy, antibacterial resistance. Sulphonamides and their combination with diaminopyrimidines, sulfones, nitrofurans, nalidixic acid and fluoroquinolones.

Antibiotics: Penicillins and cephalosporins, aminoglycosides, tetracyclines, chloramphenicol, macrolides, polypeptides. Miscellaneous agents: methenamine, bacitracin. Rifampin. novobiocin, viginamycin, lincosamides and vancomycin.

Antifungal agents: Topical and systemic agents including anti-fungal antibiotics.

Anthelmintics: Drugs used against cestodes, trematodes, nematodes, drug resistance, broad-spectrum anthelmintics.

Antiprotozoal agents: Drugs used in trypanosomosis, theileriosis, babesiosis, coccidiosis, amoebiosis, giardiosis and trichomonosis.

Ectoparasiticides, Antiviral and anticancer agents. Antiseptics and disinfectants. Growth promoters. Common indigenous drugs of plant origin with proven pharmacological and therapeutic efficacies in various animal ailments.

New drugs and drug formulations.

SEMESTER- VIII

VETERINARY TOXICOLOGY

VPT-421

Credit Hours 2+0=2

THEORY

General Toxicology: Definitions, fundamentals and scope of toxicology. Sources and mode of action of poisons. Factors modifying toxicity. General approaches to diagnosis and treatment of poisoning. Toxicity caused by metal and non-metals: Arsenic, lead, mercury, copper, selenium, molybdenum, phosphorus, nitrates and nitrites, common salt and fluoride.

Toxicity caused by plants and weeds: Cyanogenetic plants, abrus, lantana, ipomoea, nerium, datura, nux vomica, castor, selenium containing plants oxalate producing plants, plants causing thiamine deficiency. . Drug toxicity and toxicity caused by agrochemicals: organophosphates, carbamates, chlorinated hydrocarbons, pyrethroids. herbicides, fungicides, rodenticides and urea.

Residue toxicology: Hazards of residues, concepts of withdrawal time and MRLs, minimizing drug and toxic residues in animal products.

Venomous bites and stings: Snake bite, scorpion, spider, wasp stings and toad poisoning. Radiation hazards and industrial toxicants. Toxicity caused by food additives and preservatives.

REFERENCE BOOKS

1. Richard H. Adams.2001. Veterinary Pharmacology and Therapeutics. 8th Edition. IOWA State University Press, USA.
2. Brander, G.C., Pugh, D.N., Bywater, R.J. and Jenkins, W.L., 1991. Veterinary Applied Pharmacology and Therapeutics. Bailliere Tindal, London.
3. Prescott, J.F., Baggot, J.D. and Walker, R.D., 2005. Antimicrobial therapy in Veterinary Medicine. Blackwell Scientific Publications, IOWA, USA.
4. Tripathi, K.D., 2003. Essentials of Medical Pharmacology, Essentials of Medical Pharmacology, Jaypee brothers Medical Publishers (P) Ltd., New Delhi.
5. Rang, H.P., Dale, M.M., J.M. and Moore, P.K., 2003. Pharmacology, 5th Edition, Churchill Livingstone, Edinburgh, UK.
6. Sandhu, H.S. and Brar, R.S.,2000.Text book of Veterinary Toxicology, Kalyani Publishers, Ludhiana.
7. Garg, S.K., 2000. Veterinary Toxicology, CBS Publishers & Distributors, New Delhi.