

THIRD PROFESSIONAL YEAR

Course Title: Veterinary Pharmacology and Toxicology

Credit Hours: 4+1=5

S. No.	Topics	Lectures
UNIT-1 (GENERAL PHARMACOLOGY)		
1	Introduction, Historical development, branches and scope of Pharmacology	1
2	Sources and nature of drugs, pharmacological terms and definitions	1
3	Principles of drug activity: Pharmacokinetics- routes of drug administration, absorption, distribution, biotransformation and excretion of drugs	4
4	Pharmacodynamics- concept of drug and receptor	3
5	Dose - response relationship	1
6	Terms related to drug activity	1
7	Factors modifying the drug effect and dosage	2
8	Adverse drug reactions and drug interaction	2
UNIT-2 (DRUGS ACTING ON AUTONOMIC NERVOUS SYSTEM)		
1.	Introduction to ANS, Definitions, Neurohumoral transmission and pharmacology of neurotransmitters	3
2.	Cholinergic transmission and receptors, Cholinergic agonists and antagonists	3
3.	Anticholinesterase agents, ganglionic stimulants and blockers	2
4.	Adrenergic transmission and receptors, Adrenergic agonists and antagonists	3
5.	Adrenergic neuron acting drugs	1
6.	Autacoids- Histamine, histamine analogues and antihistaminic agents	1
7.	5-Hydroxytryptamine and its agonists and antagonists, Eicosanoids, platelet activating factor	1
8.	Angiotensins, bradykinin and kallidin	1
UNIT-3 (DRUGS ACTING ON CENTRAL NERVOUS SYSTEM)		
1.	Classification of drugs acting on CNS	1
2.	History, mechanisms, stages and theories of general anesthesia and properties of an ideal anesthetic	3
3.	Inhalant anesthetics	1
4.	Intravenous anesthetics	1
5.	Dissociative anesthetics;	1
6.	Hypnotics and sedatives	2
7.	Psychotropic drugs	1
8.	Anticonvulsants	1
9.	Opioid analgesics	1
10.	Nonsteroidal anti-inflammatory drugs	2
11.	Analeptics and other CNS stimulants	1
12.	Drugs acting on Somatic Nervous system- Skeletal muscle relaxants and local anesthetics	3
13.	Euthanizing agents	1
UNIT-4 (DRUGS ACTING ON DIFFERENT BODY SYSTEMS)		
1.	Drugs acting on digestive system- sialagogue, stomachics, antacids, antiulcers	1
2.	Antidiarrhoeals, emetics, antiemetics	1
3.	Appetizers, carminatives, antizymotics, ruminotorics, digestant. Choalogogues, chorectics	1
4.	Prokinetics, laxatives, purgatives, Rumen pharmacology	1
5.	Drugs acting on cardiovascular system- cardiotonics, and cardiac stimulants, antiarrhythmics	2
6.	Vasodilators and antihypertensive drugs	1
7.	Haematopoietic drugs, coagulants and anticoagulants	1
8.	Drugs acting on respiratory system- Drugs for cough- expectorants, mucolytics, antitussives, demulsants	1
9.	Drugs for asthma- bronchodilators and miscellaneous agents. Respiratory stimulants	1
10.	Drugs acting on urogenital system- Diuretics, drugs affecting urinary pH and tubular transport of drugs	1

11.	Urinary alkalinizer, acidifier, emollients and tocolytics	1
12.	Pharmacological basis of fluid therapy	1
13.	Pharmacotherapeutics of hormones	2
14.	Drugs acting on skin and mucus membranes-emollients, demulcents, counterirritants	1
UNIT-5 (VETERINARY CHEMOTHERAPY)		
1.	Introduction and Historical developments of chemotherapy. Definitions. Antimicrobial agents:, Classification, General principles in antibacterial chemotherapy, antibacterial resistance, combined antimicrobial therapy	3
2.	Sulphonamides and their combination with diaminopyrimidines	1
3.	β - lactam antibiotics- penicillins, cephalosporins, cephamycins and β - lactamase inhibitors	2
4.	Aminoglycosides and aminocyclitols	1
5.	Tetracyclines,	1
6.	Amphenicols (chloramphenicol, thiamphenicol, florfenicol) and Macrolides	1
7.	Quinolones, fluoroquinolones, Polypeptides (polymixins, bacitracin), glycopeptides	1
8.	Miscellaneous agents: Lincosamides, novobiocin, virginiamycin, tiamulin, nitrofurans and methenamine	1
9.	Antitubercular drugs	1
10.	Antifungal agents: Topical and systemic agents including anti-fungal antibiotics	2
11.	Antiviral agents	2
12.	Anticancer agent	1
13.	Anthelmintics: Drugs used against nematodes, cestodes, trematodes	3
14.	Antiprotozoal agents: Drugs used in trypanosomosis, theileriosis, babesiosis, coccidiosis, amoebiasis, giardiasis and trichomonosis	4
15.	Ectoparasiticides	1
16.	Antiseptics and disinfectants	1
17.	Pharmacology of drugs of abuse in animals	1
18.	Pharmacology of indigenous medicinal plants: Scientific & common name, active principles, pharmacological actions and therapeutic uses of Ginger, Ocimum, neem, piper longum, withania, leptadenia, tinospora, embilica, eucalyptus, glycyrrhiza, trichospermum, curcuma, adiantum, butea, aloes, sena, rheubarb, catechu etc	2
UNIT-6 (VETERINARY TOXICOLOGY)		
1.	General Toxicology: History and Definitions	1
2.	Fundamentals and scope of toxicology	1
3.	Sources and Classification of toxicants, Factors modifying toxicity	1
4.	General approaches for diagnosis, treatment and management of poisoning	1
5.	Toxicity caused by metals: Arsenic, lead, copper, mercury, selenium, molybdenum	5
6.	Toxicity caused by non-metals: phosphorus, fluoride, nitrates and nitrites, chlorate, common salt and urea	3
7.	Poisonous plants: Cynogenetic plants, abrus, ipomoea, datura, nux vomica, castor, oxalate producing plants, plants causing thiamine deficiency, plants causing photosensitization and lathyrism, oleander and cotton	4
8.	Toxicity caused by agrochemicals: Insecticides-organophosphates, carbamates, chlorinated hydrocarbons, pyrethroids, newer insecticides. Herbicides, fungicides and rodenticides	5
9.	Fungal and bacterial toxins: Aflatoxins, rubratoxin, ochratoxin, sporidesmin, citrinin, F-2 toxin, trichothecenes, ergot, fescue, botulinum toxin and tetanus toxin	3
10.	Venomous bites and stings: snake, scorpion, spider, bees and wasp, toad and fish (puffer fish, shellfish)	2
11.	Toxicity caused by food additives and preservatives	1
12.	Drug and pesticide residue toxicology	1
13.	Environmental pollutants: Air and water pollutants	1
14.	Concept of radiation hazards	1