SYLLABUS

THEORY

Muscle Physiology basic muscle unit characteristic electrical phenomenon in muscle cell - Membrane potential ionic basis of resting membrane potential, muscle action potential, excitation and propagation of impulse characteristics latent period refractive ness, threshold level-all & none characteristics. Contractile mechanism – excitation – contraction coupling – neuromuscular transmission, type of muscle – contraction, phenomenon of fatigue, rigor mortis.

Organization Of nervous system – Mechanism of information processing, hierarchical control. Major functional system – sensory, consciousness, emotion, motor and visceral control and basic functional unit – neuron structure, type – functional characteristics of sub-units of neuron. Membrane potential – ionic basis of resting membrane potential (RMP nerve action potential, excitation and propagation of impulse characteristics – latent period – refractive ness, threshold level – all & none characteristics. Degeneration and regeneration of nerve fibre. Synaptic and junctional transmission.

Functions of nervous systems – reflexes – control of posture and movements, autonomic nervous system and visceral control. Neurotransmitter wakefulness, sleep cycle. Higher function of neurons system – learning memory. Familiarization with common equipments used in neurophysiology (oscilloscope, electroencephalography, machine stimulators etc.).

Sense organs and receptors physiology of special senses –EYE: functional morphology, nourishment and protection neural pathway, receptors – optics, ocular muscles and movements, photochemistry, eye defects and eye examinations (as an aid to clinical evaluation). EAR: Physiology of hearing and common hearing impairment. Vestibule apparatus. Physiology of Olfaction and taste.

governing absorption, control intestinal transport of electrolyte and water, enzymatic digestion in monogastric and fermentative digestion in rumen, modification of toxic substances in rumen. Digestion in birds.

Functional morphology of respiratory apparatus. Mechanics of breathing. Transport of blood gases, foetal and neonatal oxygen transport, dissociation curves, pressures, recoil tendency, elasticity, surfactants, pleural liquid, compliance, exchanges of gases in lungs and tissues, neural and chemical regulation of breathing, diffusion, perfusion, hypoxsia. Frictional resistance to air flow, airways smooth muscle contraction, respiratory muscle work, panting, adaptation of respiration during muscles exercise high altitude hypoxia, Non-respiratory lung functions. Respiration in birds.

PRACTICAL

Counting of rumen motility estimation of volatile fatty acids and ammonia in rumen. Bacterial and protozoal count. In-vitro action of proteolytic enzymes – pepsin and trypsin.

Experimental physiology: Pithing of frog, preparation of nerve muscle – Recording of twitch response, effect of single stimulus – effect of heat and cold. Fatigue – summation, tetanus.

Recording of respiration, spirometry. Recording of volume and capacities indifferent physiological states including determination of vital capacities. Recording of rumen / intestinal movements (Demonstration).