

ANIMAL PHYSIOLOGY

Semester	Subject Code	Category	Lecture		Theory		Practical	Credits
			Hrs/ week	Total Hours/ Semester	Hrs/ week	Total Hours/ Semester		
V	21CZO5C	Core -VII	4	60	4	60	Nil	4

COURSE OBJECTIVE:

- To study the basic principles of animal Physiology, Chemical and physical properties of living matter.
- To understand the physiology of various organs and organ systems

COURSE OUTCOMES (CO)

On the successful completion of the course, students will be able to:

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Students will get awareness about balanced diet	K2, K3
CO2	Students will get an awareness on the prevention of heart related defects.	K2, K4
CO3	students will develop the idea of multilevel controlling and feedback mechanism in relation to various physiological functions	K2, K3
CO4	Students will be able to understand the basic physiological process and the defects of sense organs	K3, K4
CO5	Students will analyse the importance of hormonal balances during various stages of their growth and development.	K3, K4

Knowledge Level: K1- Remember; K2 – Understand; K3 – Apply; K4 – Analyze.

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	S	S	S	M	M
CO3	M	S	S	S	S
CO4	S	S	S	S	S
CO5	S	S	S	S	S

S- Strong; M – Medium; L- Low

Distribution of Marks: Theory 100% and Problems Nil %

UNIT I

NUTRITION and RESPIRATION

(12 Hours)

Nutrition: **Macro-metabolites-** Carbohydrates, proteins, fats, **Micro-metabolites-** minerals, and vitamins **Types-** Fat soluble and Water soluble vitamins – Sources and their deficiency diseases. **Digestion-**Mechanism of Digestion and its Absorption. Digestive enzymes and their role in carbohydrate, protein and fat digestion. Hormonal control of digestion. **Respiratory pigments-** structure of haemoglobin, Transportation of gases **Oxygen transport -Bohr effect,** carbon di oxide transport- Chloride shift -**Regulation of respiration-** bronchitis- asthma, Physiological effects of smoking.

UNIT II

CIRCULATION and EXCRETION

(12 Hours)

Components of Blood- Clotting factors, Mechanism of clotting. Structure and working mechanism of heart- Origin of heart Beat -pace maker – Cardiac cycle, Cardiac output, coronary circulation, ECG - Pulse and blood pressure. **Excretion-** Types of excretory products- Ammoniotelic-Ureotelic-Uricotelic, structure of kidney-Nephron and Mechanism of urine formation, Dialysis, Osmoionic regulation in fishes.

UNIT III

MUSCLE and NERVE PHYSIOLOGY

(12 Hours)

Types of muscles - Ultra structure of striated muscle, Muscle contraction, Muscle Proteins- Myosin and Actin, Physiochemical changes during muscle contraction, Cori cycle, Theories of muscle contraction-.

Neurons – structure and types – (Based on their polarity and function) - Impulse propagation- Conduction of Nerve Impulse, synaptic transmission, neuro transmitters - Reflex action, Nerve disorders – epilepsy, Alzheimer’s disease, Parkinson’s disease.

UNIT IV

SENSE ORGANS

(12 Hours)

Sensory Receptors- Photoreceptor, Photoreceptor, Olfactory Receptors, Gustatato Receptor and Thermoreceptor. Structure of eye, physiology of vision, visual elements and pigments, - Eye defects – myopia, hyperopia, presbyopia, astigmatism, cataract - Structure of ear and mechanism of hearing - Hearing impairments – deafness, labyrinthine disease.

UNIT V

ENDOCRINOLOGY AND REPRODUCTIVE PHYSIOLOGY

(12 Hours)

Endocrine glands in man – Hypothalamus- Pituitary, Thyroid, Parathyroid, Adrenal, Thymus, Islets of Langerhans, Testis and Ovary, Hormone's action and disorders - Feed-back mechanism. Puberty, adolescence, pregnancy, parturition, lactation and birth control.

TEXT BOOKS

S. No.	Authors	Title of the Book	Publishers	Year of Publication
1	Arumugam N and. Mariakuttikan A	Animal Physiology	Saras Publications, Nagercoil	2016
2	Parameswaran, Anantakrishnan and Ananta Subramanyam	Outlines of Animal Physiology	S. Viswanathan [printers and Publishers] Pvt. Ltd	1975
3	Verma P.S./ Tyagi B.S. and Agarwal V.K.	Animal Physiology	S. Chand and Company	2000

REFERENCE BOOKS

S. No.	Authors	Title of the Book	Publishers	Year of Publication
1	Sambasivaiah, Kamalakara rao and Augustine chellappa	A Text book of Animal physiology and ecology	S. Chand and co., Ltd., New Delhi – 110 055.	1990
2	William S. Hoar	General and comparative physiology	Prentice Hall of India Pvt. Ltd., New Delhi	1976
3	Jain AK	Textbook of Physiology	Avichal Publishing Company	2000
4	Nagabhushanam	Text book of Animal Physiology	India Book House Pvt. Ltd	2008
5	Wood.D.W,	Principles of Animal Physiology 3rd Ed.,	Arnold Pvt. Ltd	1983
6	Prosser,C.L. Brown	Comparative Animal Physiology	Satish Book Enterprise, Agra – 282 003	1985

WEB SOURCES:

www.sciencedirect.co.

www.pebmed.com

www.khansacademy.com

www.epatsala.com

www.swayam.com

TEACHING METHODOLOGY

- Class room teaching
- Charts/ Models
- Power point Presentations
- Discussions
- Assignments
- Home test

SYLLABUS DESIGNERS

- Dr. D. Sasikala, Assistant Professor and HOD
- Dr. V. Kiruthiga, Assistant Professor
- Dr. V. Rekha, Assistant Professor
- Dr. A. Vinodhini, Assistant Professor
- Dr. G. Vidhya, Assistant Professor