LJ UNIVERSITY

LJ INSTITUTE OF PHARMACY

SEMESTER: I

Subject Name: REMEDIAL BIOLOGY
Subject Code: BP106TT

Scope: To learn and understand the components of living world, structure and functional system of plant and animal kingdom

Objectives: Upon completion of the course, the student shall be able to
1. Know the classification and salient features of five kingdoms of life
2. Understand the basic components of anatomy & physiology of plant
3. Know understand the basic components of anatomy & physiology animal with special reference to human

Teaching scheme and examination scheme:

Teaching Scheme				Evaluation Scheme			
				Theory		Practical	
Theory	Tutorial	Practical	Total	External	Internal	External	Internal
2	0	0	2	35	15	0	0

Sr. No.	Course Contents	Hours
1	**1.1 Living world:** Definition and characters of living organisms Diversity in the living world Binomial nomenclature Five kingdoms of life and basis of classification. Salient features of Monera, Potista, Fungi, Animalia and Plantae, Virus **1.2 Morphology of Flowering plants** Morphology of different parts of flowering plants – Root, stem, inflorescence, flower, leaf, fruit, seed. General Anatomy of Root, stem, leaf of monocotyledons & Dicotylidones	07
2	**2.1 Body fluids and circulation** Composition of blood, blood groups, coagulation of blood Composition and functions of lymph Human circulatory system Structure of human heart and blood vessels Cardiac cycle, cardiac output and ECG **2.2 Digestion and Absorption** Human alimentary canal and digestive glands Role of digestive enzymes Digestion, absorption and assimilation of digested food **2.3 Breathing and respiration** Human respiratory system Mechanism of breathing and its regulation Exchange of gases, transport of gases and regulation of respiration Respiratory volumes	07

3	**3.1 Excretory products and their elimination:** Modes of excretion Human excretory system- structure and function Urine formation Rennin angiotensin system **3.2 Neural control and coordination** Definition and classification of nervous system Structure of a neuron Generation and conduction of nerve impulse Structure of brain and spinal cord Functions of cerebrum, cerebellum, hypothalamus and medulla oblongata **3.3 Chemical coordination and regulation** Endocrine glands and their secretions Functions of hormones secreted by endocrine glands **3.4 Human reproduction** Parts of female reproductive system Parts of male reproductive system Spermatogenesis and Oogenesis Menstrual cycle	07
4	**4.1 Plants and mineral nutrition:** Essential mineral, macro and micronutrients Nitrogen metabolism, Nitrogen cycle, biological nitrogen fixation **4.2 Photosynthesis** Autotrophic nutrition, photosynthesis, Photosynthetic pigments, Factors affecting photosynthesis	05
5	**5.1 Plant respiration:** Respiration, glycolysis, fermentation (anaerobic). **5.2 Plant growth and development** Phases and rate of plant growth, Condition of growth, Introduction to plant growth regulator **5.3 Cell - The unit of life** Structure and functions of cell and cell organelles. Cell division **5.4 Tissues** Definition, types of tissues, location and functions.	04

Text Books

a. Text book of Biology by S. B. Gokhale

b. A Text book of Biology by Dr. Thulajappa and Dr. Seetaram.

Reference Books

a. A Text book of Biology by B.V. Sreenivasa Naidu

b. A Text book of Biology by Naidu and Murthy

c. Botany for Degree students By A.C.Dutta.

d. Outlines of Zoology by M. Ekambaranatha ayyer and T. N. Ananthakrishnan.

e. A manual for pharmaceutical biology practical by S.B. Gokhale and C. K. Kokate

Reference Books

1. Practical human anatomy and physiology. by S.R.Kale and R.R.Kale.
2. A Manual of pharmaceutical biology practical by S.B.Gokhale, C.K.Kokate and S.P.