Gandhinagar Institute of Pharmacy

Bachelor of Pharmacy (Undergraduate)

Semester I

Subject Code: BP106RBT	**Subject title: Remedial Biology (Theory)**
Pre-requisite: --	

Course Objective: Upon completion of the course student shall be able to

1. Identify diversity of living organism and its characteristic
2. Understand various systems of the human body.
3. Define essential requirements of plants nutrition, plant respiration, plant growth and development.
4. Identify types of cells and tissues.

Teaching Scheme (Hours per week)			**Evaluation Scheme (Marks)**			
			Theory			**Total**
Lecture	**Tutorial**	**Credit**	**University Assessment**	**Continuous Assessment**	**Internal Assessment**	
2	-	2	35	5	10	50

Detailed Syllabus:

Sr. No.	**UNIT**	**Hours**	**Weightage (%)**
1.	**Living world, Morphology of Flowering plants.** 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, Protista, Fungi, Animalia and Plantae, Virus. Morphology of different parts of flowering plants – Root, stem, inflorescence, flower, leaf, fruit, seed, General Anatomy of Root, stem, leaf of monocotyledons & Dicotyledons.	**7 Hours**	**23.33%**
2.	**Body fluids and circulation, Digestion and Absorption, Breathing and Respiration.** 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. Human alimentary canal and digestive glands, Role of digestive enzymes, digestion, absorption and assimilation of digested food. Human respiratory system, Mechanism of breathing and	**7 Hours**	**23.33%**

	its regulation,Exchange of gases, transport of gases and regulation of respiration, Respiratory volumes.		
3.	**Excretory products and their elimination, Neural control and coordination, Chemical coordination and regulation, Human reproduction** Modes of excretion, Human excretory system- structure and function, Urine formation, Rennin angiotensin system. 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 medullaoblongata. Endocrine glands and their secretions, Functions of hormones secreted by endocrine glands. Parts of female reproductive system, Parts of male reproductive system, Spermatogenesis and Oogenesis, Menstrual cycle.	**7 Hours**	**23.33%**
4.	**Plants and mineral nutrition, Photosynthesis** Essential mineral, macro and micronutrients Nitrogen metabolism, Nitrogen cycle, biological nitrogen fixation. Autotrophic nutrition, photosynthesis, Photosynthetic pigments, Factorsaffecting photosynthesis.	**5 Hours**	**16.66%**
5.	**Plant respiration, Plant growth and development, Cell - The unit of life, Tissues** Respiration, glycolysis, fermentation (anaerobic). Phases and rate of plant growth, Condition of growth, Introduction to plantgrowth regulators. Structure and functions of cell and cell organelles. Cell division. Definition, types of tissues, location, and functions.	**4 Hours**	**13.33%**

Gandhinagar Institute of Pharmacy

Bachelor of Pharmacy (Undergraduate)

Semester I

Subject Code: BP106RBP	**Subject Title: Remedial Biology (Practical)**
Pre-requisite: --	

Course Objective: Upon completion of the course student shall be able to

1. Differentiate various cells and tissues through histological examination.
2. Identify various types of cells inclusion.
3. Assess blood pressure, blood group and tidal volume.
4. Identify and recognize different bones of the human body.
5. Analyze the problem, communicate suggested solution, and interpret the results.

Teaching Scheme (Hours per week)		**Evaluation Scheme (Marks)**			
		Theory			
Practical	**Credit**	**University Assessment**	**Continuous Assessment**	**Internal Assessment**	**Total**
2	1	15	5	5	25

List of Practical:

Sr. No.	**Title of the unit**
1	Introduction to experiments in biology
	(a) Study of Microscope
	(b) Section cutting techniques
	(c) Mounting and staining
	(d) Permanent slide preparation
2	Study of cell and its inclusions
3	Study of Stem, Root, Leaf, seed, fruit, flower and their modifications
4	Detailed study of frog by using computer models
5	Microscopic study and identification of tissues pertinent to Stem, Root Leaf, seed, fruit and flower
6	Identification of bones
7	Determination of Blood Group
8	Determination of Blood Pressure
9	Determination of Tidal Volume

Recommended Study Material:

1. Practical human anatomy and physiology, S. R. Kale and R. R. Kale.
2. A Manual of pharmaceutical biology practical by S. B. Gokhale, C. K. Kokate and S. P. Shrivastava.
3. Biology practical manual according to National core curriculum. Biology forum of Karnataka. Prof .M. J. H. Shafi
4. Botany for Degree students, A. C. Dutta, Oxford University Press Bombay