



Faculty of Pharmacy
Bachelor of Pharmacy (B. Pharm.)
(W. E. F.: 2023-24)
Document ID: SUTFPHB-01

Name of Faculty	:	Faculty of Pharmacy
Name of Program	:	Bachelor of Pharmacy
Course Code	:	1BPH06
Course Title	:	Remedial Biology
Type of Course	:	Basic Sciences
Year of Introduction	:	2023-24

Prerequisite	:	Zeal to learn the subject
Course Objective	:	To learn and understand the components of living world, structure and functional system of plant and animal kingdom.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	To know (remember) the classification and salient features of five kingdoms of life
	CO2	To learn how to perform the basic components of anatomy & physiology of plant
	CO3	To understand the basic components of anatomy & physiology animal with special reference to human.

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
L	T	P		Theory Marks		Practical Marks		Total Marks
			C	SEE	CIA	SEE	CIA	
02	00	02	03	35	15	15	10	75

Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice; P - Practical, C - Credit, SEE - Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with COs
1	<p>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, Protista, Fungi, Animalia and Plantae, Virus,</p> <p>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 & Dicotyledones</p>	7	23.33 %	CO1 CO2
2	<p>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</p> <p>Digestion and Absorption Human alimentary canal and digestive glands Role of digestive enzymes Digestion, absorption and assimilation of digested food</p> <p>Breathing and respiration Human respiratory system Mechanism of breathing and its regulation Exchange of gases, transport of gases and regulation of respiration Respiratory volumes</p>	7	23.33 %	CO3
3	<p>Excretory products and their elimination Modes of excretion Human excretory system- structure and function Urine formation Rennin angiotensin system</p> <p>Neural control and coordination Definition and classification of nervous system</p>	7	23.33%	CO3

	<p>Structure of a neuron Generation and conduction of nerve impulse Structure of brain and spinal cord Functions of cerebrum, cerebellum, hypothalamus and medulla oblongata Chemical coordination and regulation Endocrine glands and their secretions Functions of hormones secreted by endocrine glands Human reproduction Parts of female reproductive system Parts of male reproductive system Spermatogenesis and Oogenesis Menstrual cycle</p>			
4	<p>Plants and mineral nutrition: Essential mineral, macro and micronutrients Nitrogen metabolism, Nitrogen cycle, biological nitrogen fixation Photosynthesis Autotrophic nutrition, photosynthesis, Photosynthetic pigments, Factors affecting photosynthesis.</p>	5	16.66 %	CO2
5	<p>Plant respiration: Respiration, glycolysis, fermentation (anaerobic). Plant growth and development Phases and rate of plant growth, Condition of growth, Introduction to plant growth regulators Cell - The unit of life Structure and functions of cell and cell organelles. Cell division Tissues Definition, types of tissues, location and functions</p>	4	13.33 %	CO2

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	33.33	33.33	33.33	00	00	00

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Suggested List of Experiments/Tutorials -

Sr. No.	Name of Experiment/Tutorial	Teaching Hours
1	1. Introduction to experiments in biology a) Study of Microscope b) Section cutting techniques c) Mounting and staining d) Permanent slide preparation	04
2	Study of cell and its inclusions	02
3	Study of Stem, Root, Leaf, seed, fruit, flower and their modifications	04
4	Detailed study of frog by using computer models	02
5	Microscopic study and identification of tissues pertinent to Stem, Root Leaf, seed, fruit and flower	04
6	Identification of bones	02
7	Determination of blood group	04
8	Determination of blood pressure	04
9	Determination of tidal volume	04

Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	Microscope
2	Plant Anatomy Charts
3	Human Body Part Models

Suggested Learning Websites

Sr. No.	Name of Website
1	https://pci.nic.in/pdf/Syllabus_B_Pharm.pdf
2	https://www.aicte-india.org/downloads/bpharma.pdf
3	https://www.ipc.gov.in/
4	https://www.ayush.gov.in/
5	https://ayudmla.gujarat.gov.in/home.php
6	https://www.fda.gov/
7	https://www.pharmacopoeia.com/



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8	https://ipapharma.org/
9	https://gpat.nta.nic.in/
10	https://drnaitiktrivedi.com/
11	https://gdc4gpat.com/course/gpat/
12	https://niscpr.res.in/
13	https://delnet.in/
14	https://ihubgujarat.in/
15	https://www.ssipgujarat.in/

Reference Books

Sr. No.	Name of Reference Books
1	Text book of Biology by S. B. Gokhale
2	A Text book of Biology by Dr. Thulajappa and Dr. Seetaram.
3	A Text book of Biology by B.V. Sreenivasa Naidu
4	A Text book of Biology by Naidu and Murthy
5	Botany for Degree students By A.C.Dutta.
6	Outlines of Zoology by M. Ekambaranatha ayyer and T. N. Ananthkrishnan.
7	A manual for pharmaceutical biology practical by S.B. Gokhale and C. K. Kokate
8	Down of Earth, Centre for Science and Environment