

**JSS Academy of Higher Education & Research, Mysore**  
(Deemed to be University - Accredited 'A' Grade by NAAC)



**JSS College of Pharmacy, Rocklands, Ooty**  
(An ISO 9001:2015 Certified Institution)



# Academic Plan

(Academic Year: 2019-2020)

**Course: I. PHARM.D.**

# LECTURE PLAN – Theory

**SUBJECT** : HUMAN ANATOMY & PHYSIOLOGY (Theory)  
**NAME OF THE STAFF** : Mr. Saravanan J  
**DESIGNATION** : Lecturer, Dept. of Pharmacology

Sessional	Number of Hours of Didactic Lecture	No. of Hours of other Pedagogy	Total Number of Lecture Hours	Tutorial Classes
I	26	03	29	06
II	26	03	29	07
III	24	06	30	06
<b>Total Number of Lecture Hours</b>	76	13	88	19

## I SESSIONAL :26 Lectures + 03 Activities

Lecture No.	Date	Lecture Details
Tutorial-1	06/07/19	Orientation to Human Anatomy and Physiology.
<b>Unit-1: Scope of Anatomy and Physiology</b>		<b>02 Hours</b>
1.	08/07/19	Scope of Anatomy and Physiology
2.	09/07/19	Basic terminologies used in anatomy and physiology
<b>Unit-2: General Physiology</b>		<b>04 Hours</b>
1.	10/07/19	Structure of cell – Its components and their functions
Tutorial -2	13/07/19	-
2.	15/07/19	Homeostasis
3.	16/07/19	Mechanism of transport across cell membranes
4.	17/07/19	Secondary messengers and Ion channels
<b>Unit-3: Elementary Tissues of the human body</b>		<b>04 Hours</b>
<b>Activity I</b>	20/07/19	Class Test I
1.	22/07/19	Location, characteristics, functions of epithelial tissue
2.	23/07/19	Location, characteristics, functions of connective tissue
3.	24/07/19	Location, characteristics, functions of muscular tissue
Tutorial- 3	27/07/19	-
4.	29/07/19	Location, characteristics, Functions nervous tissue
<b>Unit-4: Human Skeleton</b>		<b>03 Hours</b>
1.	30/07/19	Classification of joints and types of movements of joints
2.	31/07/19	Disorders of joints
Tutorial-4	03/08/19	-
<b>Activity II</b>	05/08/19	Class Test II
<b>Unit-5: Haemopoietic system</b>		<b>05 Hours</b>
1.	06/08/19	Composition and functions of blood, Haemopoiesis
2.	07/08/19	Haemopoiesis and disorders of blood components (Definition only)
Tutorial-5	10/08/19	-
3.	13/08/19	Blood groups
4.	14/08/19	Blood Clotting- Clotting factors ,Clotting Mechanism
Tutorial-6	17/08/19	-
5.	19/08/19	Platelets, Disorders of Coagulation
<b>Unit-6: Lymph</b>		<b>04 Hours</b>
1.	20/08/19	Lymph and lymphatic system
2.	21/08/19	Composition, formation and circulation of lymph
<b>Activity III</b>	24/08/19	Class Test III
3.	26/08/19	Spleen –structure and function Disorders of lymphatic system.
<b>Unit-7: Cardiovascular system</b>		<b>06 Hours</b>
1.	27/08/19	Anatomy and Functions of heart
2.	28/08/19	Blood vessels and circulation
3.	31/08/19	Electrocardiogram

4.	03/09/19	Cardiac cycle and heart sounds.
5.	04/09/19	Blood pressure – its maintenance and regulation
6.	09/09/19	Definitions: Hypertension, Hypotension, Atherosclerosis, Arteriosclerosis, Angina, Myocardial infarction, Congestive Heart failure, Cardiac arrhythmia
7.	11/09/19	Revision

## II SESSIONAL : 26 Lectures + 03 Activities

<b>Unit-8: Respiratory system</b>		<b>05 Hours</b>
Tutorial-1	21/09/19	-
1.	23/09/19	Anatomy of respiratory organs and functions
2.	24/09/19	Mechanism/Physiology of respiration.
3.	28/09/19	Transport of respiratory gases
4.	30/09/19	Regulation of respiration, Respiratory volumes and capacities.
5.	01/10/19	Definition of Hypoxia, Dybarism, Asphyxia. Oxygen therapy. Resuscitation.
<b>Unit-9: Digestive system</b>		<b>06 Hours</b>
1.	03/10/19	Anatomy and physiology of GIT
Tutorial-3	05/10/19	-
2.	09/10/19	Anatomy and physiology of GIT
<b>Activity-I</b>	12/10/19	Class test I
3.	14/10/19	Anatomy and physiology of accessory glands of GIT
4.	15/10/19	Anatomy and physiology of accessory glands of GIT
5.	16/10/19	Digestion and absorption
6.	21/10/19	Disorders of GIT
<b>Activity-II</b>	22/10/19	<b>Class test-II</b>
<b>Unit-10: Nervous system</b>		<b>08 Hours</b>
1.	23/10/19	Definition and classification of nervous system
2.	29/10/19	Synapse and neurotransmitter, meninges, ventricles and CSF
3.	30/10/19	Anatomy and physiology of cerebrum
Tutorial-5	02/11/19	-
4.	04/11/19	Anatomy and physiology of cerebellum
5.	05/11/19	Anatomy and physiology of Midbrain
6.	06/11/19	Thalamus, Hypothalamus and basal ganglia
Tutorial- 6	09/11/19	-
7.	11/11/19	Spinal cord: structure & reflexes
8.	12/11/19	Cranial nerves- Names & functions
9.	13/11/19	ANS- Anatomy and functions of sympathetic & parasympathetic N.S.
<b>Activity-III</b>	16/11/19	<b>Class test-III</b>
10.	18/11/19	ANS- Anatomy and functions of sympathetic & parasympathetic N.S.
<b>Unit-11:Urinary system</b>		<b>05 Hours</b>
1.	19/11/19	Anatomy and physiology of Urinary system
2.	20/11/19	Physiology of urine formation
Tutorial-7	23/11/19	-
3.	25/11/19	Renin Angiotensin Aldosterone system, Juxtaglomerular apparatus.
4.	26/11/19	Acid base balance
5.	27/11/19	Clearance test and Micturition.

## III SESSIONAL : 23 Lectures + 02 Activities

<b>Unit-12:Endocrine system</b>		<b>05 Hours</b>
Tutorial-1	07/12/19	-
1.	16/12/19	Pituitary gland.
2.	17/12/19	Adrenal gland.
3.	18/12/19	Thyroid gland & Parathyroid glands
Tutorial -2	21/12/19	-
<b>Activity - I</b>	18/01/20	<b>Class test-I</b>
4.	20/01/20	Pancreas

5.	21/01/20	Gonads
<b>Unit-13: Reproductive System</b>		<b>07 Hours</b>
1.	22/01/20	Male reproductive system
Tutorial -3	25/01/20	-
2.	27/01/20	Female reproductive system
3.	28/01/20	Physiology of menstruation
4.	29/01/20	Spermatogenesis & Oogenesis,
Tutorial -4	01/02/20	
5.	03/02/20	Sex determination (genetic basis)
6.	04/02/20	Pregnancy & maintenance. Parturition.
7.	05/02/20	Contraceptive devices
<b>Unit-14: Sense Organs</b>		<b>06 Hours</b>
1.	10/02/20	Anatomy of eye
2.	11/02/20	Physiology of eye
3.	12/02/20	Anatomy of ear
Activity II	15/02/20	Class Test II
4.	17/02/20	Physiology of ear
5.	18/02/20	Skin
6.	19/02/20	Tongue & Nose
Tutorial-4	22/02/20	-
<b>Unit-15: Skeletal Muscles</b>		<b>03 Hours</b>
1.	24/02/20	Histology- Skeletal Muscle Fibre
2.	25/02/20	Physiology of muscle contraction
3.	26/02/20	Physiological properties of skeletal muscle and its disorders
Tutorial-5	29/02/20	-
<b>Unit-16: Sports Physiology</b>		<b>03 Hours</b>
1.	02/03/20	Muscles in exercise, Effects of athletic training on muscles and muscle performance
2.	03/03/20	Respiration in exercise, CVS in exercise, Body heat, Body fluids & salts in exercise
3.	04/03/20	Drugs & Athletics
Tutorial-6	07/03/20	-
Activity-III	09/03/20	MCQ Discussion
Activity-IV	10/03/20	MCQ Discussion
Activity-V	11/03/20	Revision
Activity-VI	16/03/20	Class Test IV

**Text books:**

1. Tortora Gerard J. and Nicholas, P. Principles of anatomy and physiology Publisher Harpercollins college New York.
2. Wilson, K.J.W. Ross and Wilson's foundations of anatomy and physiology. Publisher: Churchill Livingstone, Edinburg.

**Reference books:**

1. Guyton Arthur, C. *Physiology of human body*. Publisher: Holt Saunders.
2. Chatterjee C.C. *Human physiology*. Volume 1&11. Publisher: medical allied agency, Calcutta.

**LECTURE PLAN: Practicals**

**SUBJECT** : HUMAN ANATOMY & PHYSIOLOGY (Practical)  
**NAME OF THE STAFF** : Mr. Saravanan J  
**DESIGNATION** : Lecturer, Dept. of Pharmacology

Sessional	Number of Practicals (Mention the Highest Number Amongst Various Batches)	Total Number of Practical Hours (Number of Practicals X 3)
I	8	24
II	9	27
III	10	30
<b>Total Number of Practicals/Hours</b>	27	81

### I SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
1.	Study Of Compound Microscope.	08/07/2019	04/07/2019
2.	Study Of Tissues of The Human Body- Epithelial, Muscular	15/07/2019	11/07/2019
3.	Study Of Tissues of The Human Body- Connective, Nervous	22/07/2019	18/07/2019
4.	Skeletal System Part I- Axial Skeleton	29/07/2019	25/07/2019
5.	Skeletal System Part II- Appendicular Skeleton	05/08/2019	01/08/2019
6.	Determination of Bleeding Time And Clotting Time	19/08/2019	08/08/2019
7.	Study of Appliances Used In Haematology Enumeration of Total WBC Count	26/08/2019	22/08/2019
8.	Enumeration of Differential Leucocyte Count	09/09/2019	05/09/2019
9.	<i>FIRST SESSIONAL</i>	16/09/2019	12/09/2019

### II SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
1.	Determination of hemoglobin content	23/09/2019	26/09/2019
2.	Enumeration of Total RBC count	30/09/2019	03/10/2019
3.	Study of Cardiovascular system	14/10/2019	10/10/2019
4.	Study of Respiratory system	21/10/2019	17/10/2019
5.	Study of Digestive System	04/11/2019	24/10/2019
6.	Study of Nervous System	11/11/2019	31/10/2019
7.	Determination of Erythrocyte sedimentation rate	18/11/2019	07/11/2019
8.	Study of Urinary System	25/11/2019	14/11/2019
9.	<i>Repeat/Record Work</i>	-	21/11/2019
10.	<i>SECOND SESSIONAL</i>	02/12/2019	28/11/2019

### III SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
1.	Determination of Blood Pressure	16/12/2019	05/12/2019
2.	Study of Reproductive System	20/01/2020	19/12/2019
3.	Study of Special Senses	27/01/2020	23/01/2020
4.	Repeat/ Record Work	03/02/2020	30/01/2020
5.	Study of Pregnancy Diagnosis Test.	10/02/2020	06/02/2020
6.	Study of appliances used in Experimental Physiology.	17/02/2020	10/02/2020
7.	Demonstration of sciatic nerve preparation.	24/02/2020	20/02/2020
8.	Study of different family planning apparatus	02/03/2020	27/02/2020
9.	Repeat/ Record Work	09/03/2020	05/03/2020
10.	Repeat/ Record Work	16/03/2020	12/03/2020
11.	<i>THIRD SESSIONAL</i>	23/03/2020	19/03/2020

### LECTURE PLAN – Theory

**SUBJECT** : Pharmaceutics (Theory)  
**NAME OF THE STAFF** : Dr.D.Nagasamy Venkatesh  
**DESIGNATION** : Assistant Professor, Dept. of Pharmaceutics

Sessional	Number of Hours of Didactic Lecture	No. of Hours of other Pedagogy	Total Number of Lecture Hours	Tutorial Classes
<b>I</b>	12	06	18	08
<b>II</b>	21	08	29	12
<b>III</b>	14	05	19	10
<b>Total Number of Hours</b>	47	19	66	30

**I SESSIONAL : 12 Lectures + 06 Activities**

Lecture No.	Date	Lecture Details
Tutorial – 1	08.07.2019	Orientation about the Course
Activity- 1	09.07.2019	Orientation about the subject
Tutorial-2	12.07.2019	
<b>Unit-1: Introduction to Pharmaceutics 01 Hour</b>		
1.	15.07.2019	Introduction to Dosage forms classification and definitions
<b>Unit-2: Prescription and Posology</b>		<b>06 Hours</b>
2.	16.07.2019	Parts of Prescription
Tutorial – 3	19.07.2019	-
3.	22.07.2019	Handling of Prescription
4.	23.07.2019	Posology-Introduction
Tutorial – 4	26.07.2019	-
5.	29.07.2019	Factors affecting dose selection
Activity- 2	30.07.2019	Class test.
Tutorial – 5	02.08.2019	Factors affecting dose selection
6.	05.08.2019	Calculation of infant and children doses
Activity- 3	06.08.2019	Class test
Tutorial – 6	09.08.2019	-
<b>Unit-3: History of Pharmacy</b>		<b>06 Hours</b>
7.	19.08.2019	Historical background, development of profession of pharmacy
Activity- 4	13.08.2019	Class test.
8.	26.08.2019	Development of Pharmaceutical Industry
9.	27.08.2019	Development of Indian Pharmacopoeia
Tutorial –7	16.08.2019	Doubt clarification
10.	26.08.2019	Introduction to BP, USP
Tutorial – 8	30.09.2019	Doubt clarification
Activity- 5	27.08.2019	Revision
11.	09.09.2019	Introduction to European Pharmacopoeia
12.	03.09.2019	Introduction to Indian National Formulary
Activity- 6	06.09.2019	Revision test.

**II SESSIONAL : 21 Lectures + 08 Activities**

<b>Unit-4: Weights and measures</b>		<b>04 Hours</b>
1.	23.09.2019	Introduction to Pharmaceutical Calculations
Tutorial – 9	27.09.2019	Doubt clarification
2.	24.09.2019	Percentage solution, allegation method
Tutorial – 10	04.10.2019	Doubt clarification
<b>Unit-4: Mono phasic liquid dosage forms</b>		<b>03 Hours</b>
3.	30.09.2019	Proof Spirit and isotonic solutions
Tutorial – 11	11.10.2019	Class test
4.	01.10.2019	Theoretical aspects of monophasic liquid dosage forms
5.	14.10.2019	Stabilizers, colorants and flavors.
6	15.10.2019	Gargles, mouthwashes and throat paints,
Tutorial – 12	18.10.2019	Doubt clarification
<b>Unit-4: Mono phasic liquid dosage forms</b>		<b>02 Hours</b>
7.	21.10.2019	Liniments and lotions,
8.	22.10.2019	Enemas and colloidions.
Tutorial – 13	25.10.2019	Doubt clarification
<b>Unit-5: Bi phasic liquid dosage forms</b>		<b>05 Hours</b>
9.	29.10.2019	Introduction to emulsions; Types, identification tests for emulsions,
Tutorial – 14	01.11.2019	Doubt clarification
10.	04.11.2019	Formulation and stability of emulsion,
11.	05.11.2019	Quality control tests
Tutorial – 15	08.11.2019	<i>Group discussion on Emulsions</i>
12.	11.11.2019	Introduction to suspension , types of suspension.
Tutorial – 16	15.11.2019	Class test
13.	12.11.2019	formulation and quality control test for suspension.
Unit-6: Powders and granules		05 Hours
14.	18.11.2019	Introduction to powders, preparation of simple and compound powders.
Tutorial – 17	19.11.2019	Revision
15.	22.12.2019	Dusting powders, Insufflations,
Tutorial – 18	25.11.2019	Revision
16.	26.11.2019	Explosive powder and tooth powder
Tutorial – 19	06.12.2019	Class test
17.	16.12.2019	Eutectic mixtures,
18.	17.12.2019	effervescent powder and granules.

**III Sessional: 14 lectures + 05 activities**

<b>Unit-6: Galenicals</b>		<b>05 Hours</b>
Tutorial – 21	24.01.2020	Revision
1.	27.01.2020	Introduction to extraction,
Tutorial – 22	28.01.2020	Revision
2	31.01.2020	Maceration, percolation.
3.	03.02.2020	Infusion and Decoction
Tutorial – 23	14.02.2020	Class test
4	04.02.2020	Preparation of Spirits
5	10.02.2020	Tinctures and extracts
Tutorial – 24	28.02.2020	Class test
<b>Unit-7: Surgical Aids</b>		<b>04 Hours</b>
6	11.02.2020	Surgical dressings
7	24.02.2020	Absorbable gelatin sponge
Tutorial - 25	06.03.2020	Class test

<b>8</b>	25.02.2020	Sutures and Ligatures,
Tutorial – 26	13.03.2020	Class test
9	02.03.2020	medicated bandages.
<b>Unit-8: Incompatibilities 05 Hours</b>		
<b>10</b>	09.03.2020	Introduction, classification.
Tutorial – 28	27.03.2020	Revision
11.	10.03.2020	Physical Incompatibility
12	16.03.2020	Chemical Incompatibility
Tutorial – 29	03.04.2020	Revision
13.	30.03.2020	Chemical Incompatibility
14.	31.03.2020	Therapeutical Incompatibility

#### Text books

1. Cooper and Gunns Dispensing for pharmacy students.
2. A text book Professional Pharmacy by N.K.Jain and S.N.Sharma.

#### Reference books

1. Introduction to Pharmaceutical dosage forms by Howard C. Ansel.
2. Remington's Pharmaceutical Sciences.
3. Register of General Pharmacy by Cooper and Gunn.
4. General Pharmacy by M.L.Schroff.

### LECTURE PLAN – Practicals

**SUBJECT:** Pharmaceutics (Practical)

**NAME OF THE STAFF:** Dr.D.Nagasamy Venkatesh

**DESIGNATION:** Assistant Professor, Dept. of Pharmaceutics

Sessional	Number of Practicals (Mention the Highest Number Amongst Various Batches)	Total Number of Practical Hours (Number of Practicals X 3)
I	09	27
II	11	33
III	10	30
<b>Total Number of Practical/Hours</b>	30	90

#### I SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
1.	Introduction	04.07.2019	05.07.2019
2.	Simple Syrup	11.07.2019	12.07.2019
3.	Syrup of Ephedrine	18.07.2019	19.07.2019
4.	Syrup of Vasaka	25.07.2019	26.07.2019
5.	Syrup of Ferrous Phosphate	01.08.2019	02.08.2019



6.	Orange syrup	08.08.2019	09.08.2019
7.	Piperazine citrate elixir	22.08.2019	16.08.2019
8.	Model practical	29.08.2019	30.08.2019

### II SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
1.	Cascara elixir	05.09.2019	06.09.2019
2.	Paediatric simple linctus	26.09.2019	20.09.2019
3.	Strong solution of ferric chloride	03.10.2019	27.09.2019
4.	Aqueous iodine solution	10.10.2019	04.10.2019
5.	Strong solution of iodine	17.10.2019	11.10.2019
6.	Strong Ammonium citrate solution	24.10.2019	18.10.2019
7.	Liniment of Turpentine	31.10.2019	25.10.2019
8.	Liniment of Camphor	07.11.2019	01.11.2019
9.	Calamine lotion	14.11.2019	08.11.2019
10.	Magnesium hydroxide mixture	21.11.2019	15.11.2019
11.	Cod liver oil emulsion	21.11.2019	15.11.2019
12.	Model practical	28.11.2019	29.11.2019

### III SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
1.	Liquid paraffin emulsion	05.12.2019	06.12.2019
2.	Eutectic powder	19.12.2019	20.12.2019
3.	Dusting powder	23.01.2020	17.01.2020
4.	Boric acid suppositories	30.01.2020	24.01.2020
5.	Chloral hydrate suppositories	06.02.2020	31.01.2020
6.	Incompatability (Physical)	13.02.2020	14.02.2020
7.	Incompatability (Physical)	20.02.2020	28.02.2020
8.	Incompatability (Chemical)	27.02.2020	06.03.2020
9.	Incompatability (Chemical)	12.03.2020	13.03.2020
10.	Record work	26.03.2020	27.03.2020

### LECTURE PLAN - Theory

**SUBJECT** : Medicinal Biochemistry (Theory)  
**NAME OF THE STAFF** : Dr.M.J.N.Chandrasekar  
**DESIGNATION** : Professor, Dept. of Pharm. Chemistry

Sessional	Number of Hours of Didactic Lecture	No. of Hours of other Pedagogy	Total Number of Lecture Hours	Tutorial Classes
I	23	01	24	03
II	21	02	23	02
III	23	01	24	01
<b>Total Number of Lecture Hours</b>	67	04	71	06

#### I SESSIONAL :23 Lectures + 01 Activity

Lecture No.	Date	Lecture Details
<b>Unit-1:Introduction to biochemistry 05 hours</b>		
1.	08.07.2019	Introduction to biochemistry
2.	09.07.2019	Cell and its biochemical organization
3.	10.07.2019	Transport process across the cell membranes
4.	15.07.2019	Energy rich compounds; ATP, Cyclic AMP and their biological significance
5.	16.07.2019	Energy rich compounds; ATP, Cyclic AMP and their biological significance
Tutorial-1	17.07.2019	-
<b>Unit-2: Enzymes 10 Hours</b>		
1.	22.07.2019	Enzymes: Definition; Nomenclature
2.	23.07.2019	Enzymes: Definition; Nomenclature
3.	24.07.2019	IUB classification
4.	29.07.2019	Factor affecting enzyme activity
5.	30.07.2019	Enzyme action
6.	31.07.2019	enzyme inhibition
7.	05.08.2019	Isoenzymes
8.	06.08.2019	Isoenzymes and their therapeutic and diagnostic applications
9.	07.08.2019	Coenzymes
10.	13.08.2019	Coenzymes and their biochemical role and deficiency diseases
Tutorial-2	14.08.2019	-
<b>Unit-3: Carbohydrate metabolism 08 Hours</b>		
1.	19.08.2019	Carbohydrate metabolism: Glycolysis
2.	20.08.2019	Citric acid cycle (TCA cycle)
3.	21.08.2019	<i>HMP</i> shunt
4.	26.08.2019	Glycogenolysis
5.	27.08.2019	Gluconeogenesis
6.	28.08.2019	Metabolic disorders of carbohydrate metabolism (diabetes mellitus and glycogen storage diseases)
7.	03.09.2019	Glucose tolerance test and its significance
8.	04.09.2019	Hormonal regulation of carbohydrate metabolism
Tutorial-3	09.09.2019	-
<b>Activity-1</b>	11.09.2019	<b>Class test-1</b>

#### II SESSIONAL : 21 Lectures + 01 Activity

<b>Unit-4: Lipid metabolism 09 Hours</b>		
1.	23.09.2019	Lipid metabolism $\beta$ -Oxidation of saturated fatty acid
2.	24.09.2019	Lipid metabolism $\beta$ -Oxidation of saturated fatty acid
3.	30.09.2019	Ketogenesis and ketolysis
4.	01.10.2019	Biosynthesis of fatty acids and lipids

5.	09.10.2019	Biosynthesis of fatty acids and lipids
6.	14.10.2019	Metabolism of cholesterol
7.	15.10.2019	Hormonal regulation of lipid metabolism
8.	16.10.2019	Hormonal regulation of lipid metabolism
9.	21.10.2019	Defective metabolism of lipids (Atherosclerosis, fatty liver, hypercholesterolemia)
Tutorial-1	22.10.2019	-
<b>Activity-1</b>	23.10.2019	<b>Class test-2</b>
<b>Unit-5: Biological oxidation 04 Hours</b>		
1.	29.10.2019	Biological oxidation: Enzymes and Coenzyme system involved in Biological Oxidation
2.	30.10.2019	Biological oxidation: Enzymes and Coenzyme system involved in Biological Oxidation
3.	04.11.2019	Electron transport chain (its mechanism in energy capture, regulation and inhibition)
4.	05.11.2019	Oxidative phosphorylation and uncouplers of ETC
<b>Unit-6: Protein and amino acid metabolism</b>		<b>08 Hours</b>
1.	06.11.2019	Protein and amino acid metabolism
2.	11.11.2019	Protein and amino acid metabolism: protein turn over; nitrogen balance
3.	12.11.2019	General reactions of catabolism of amino acids (Transamination, deamination & decarboxylation).
4.	13.11.2019	General reactions of catabolism of amino acids (Transamination, deamination & decarboxylation).
5.	18.11.2019	Urea cycle and its metabolic disorders
6.	19.11.2019	Production of bile pigments; hyperbilirubinemia, porphyras, jaundice
7.	20.11.2019	Production of bile pigments; hyperbilirubinemia, porphyras, jaundice
8.	25.11.2019	Metabolic disorder of Amino acids
Tutorial-2	26.11.2019	-
<b>Activity-2</b>	27.11.2019	<b>Class test-2</b>

### III SESSIONAL : 23 Lectures + 01 Activity

<b>Unit-07: Nucleic acid metabolism</b>		<b>08 Hours</b>
1.	16.12.2019	Nucleic acid metabolism
2.	17.12.2019	Nucleic acid metabolism: Metabolism of purine and pyrimidine nucleotides
3.	18.12.2019	Protein synthesis
4.	20.01.2020	Genetic code
5.	21.01.2020	Inhibition of protein synthesis
6.	22.01.2020	DNA damage and repair mechanism
7.	27.01.2020	DNA replication
8.	28.01.2020	DNA replication
<b>Unit-08: The kidney function tests</b>		<b>04 Hours</b>
1.	29.01.2020	Role of kidney; Laboratory tests for normal function Urine analysis (macroscopic and physical examination, quantitative and semi quantitative tests.)
2.	03.02.2020	Test for NPN constituents. (Creatinine /urea clearance, determination of blood/urine creatinine, urea and uric acid)
3.	04.02.2020	Urine concentration test, Urinary tract calculi. (stones)
4.	05.02.2020	Liver function tests: Physiological role of liver, metabolic, storage, excretory, protective, circulatory functions and function in blood coagulation
Tutorial-1	10.02.2020	-
<b>Activity-1</b>	11.02.2020	<b>Class Test-3</b>
<b>Unit-09: Liver function tests</b>		<b>03 Hours</b>
1.	12.02.2020	Test for hepatic dysfunction-Bile pigments metabolism, Test for hepatic function test- Serum bilirubin, urine bilirubin, urobilinogen.
2.	17.02.2020	Dye tests of excretory function, Tests based upon abnormalities of serum proteins.
3.	18.02.2020	Selected enzyme activity determination tests.
<b>Unit-10: Lipid profile tests</b>		<b>02 Hours</b>

1.	19.02.2020	Lipid profile tests: Lipoproteins, composition, functions.
2.	24.02.2020	Determination of serum lipids, total cholesterol, HDL cholesterol, LDL cholesterol and triglycerides.
<b>Unit-11: Immunochemical techniques 03 Hours</b>		
1.	25.02.2020	Immunochemical techniques for determination of hormone levels and protein levels in serum for endocrine diseases and infectious diseases
2.	26.02.2020	Immunochemical techniques for determination of hormone levels and protein levels in serum for endocrine diseases and infectious diseases
3.	02.03.2020	Radio immuno assay (RIA) and Enzyme Linked Immuno Sorbent Assay (ELISA).
<b>Unit-12: Electrolytes 03 Hours</b>		
1.	03.03.2020	Electrolytes: Body water, compartments, water balance, and electrolyte distribution.
2.	04.03.2020	Electrolytes: Body water, compartments, water balance, and electrolyte distribution.
3.	09.03.2020	Determination of sodium, calcium potassium, chlorides, bicarbonates in the body fluids.
4.	10.03.2020	Revision
Tutorial-2	16.03.2020	-

**Text books:**

1. Harpers review of biochemistry – Martin
2. Text book of biochemistry – D.Satyanarayana
3. Text book of clinical chemistry- Alex Kaplan & Laverve L.Szabo

**Reference books:**

3. Principles of biochemistry - Lehninger
4. Text book of biochemistry - Ramarao
5. Practical Biochemistry-David T.Plummer
6. Practical Biochemistry-Pattabhiraman

**LECTURE PLAN: Practicals**

**SUBJECT** : Medicinal Biochemistry (Practical)  
**NAME OF THE STAFF** : Mr. S B Santosh  
**DESIGNATION** : Research Scholar, Dept. of Pharm. Chemistry

Sessional	Number of Practicals (Mention the Highest Number Amongst Various Batches)	Total Number of Practical Hours (Number of Practicals X 3)
I	09	27
II	08	24
III	08	24
<b>Total Number of Practicals/Hours</b>	25	75

### I SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
1	Qualitative analysis of normal constituents of urine	10.07.2019	08.07.2019
2	Qualitative analysis of abnormal constituents of urine	17.07.2019	15.07.2019
3	Quantitative estimation of urine chlorides by Volhard's method	24.07.2019	22.07.2019
4	Quantitative estimation of urine creatinine by Jaffe's method	31.07.2019	29.07.2019
5	Quantitative estimation of urine calcium by precipitation method	07.08.2019	05.08.2019
6	Quantitative estimation of serum cholesterol	14.08.2019	19.08.2019
7	Preparation of Folin Wu filtrate from blood	21.08.2019	26.08.2019
8	Quantitative estimation of blood creatinine	28.08.2019	09.09.2019
9	Quantitative estimation of blood sugar Folin-Wu tube method	04.09.2019	16.09.2019
10	FIRST SESSIONAL	11.09.2019	23.09.2019

### II SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
1	Estimation of SGOT in serum.	09.10.2019	30.09.2019
2	Estimation of SGPT in serum	16.10.2019	14.10.2019
3	Estimation of Urea in Serum.	23.10.2019	21.10.2019
4	Estimation of Proteins in Serum	30.10.2019	04.11.2019
5	Determination of serum bilirubin	06.11.2019	11.11.2019
6	Study of Urinary System	13.11.2019	18.11.2019
7	Determination of Glucose by means of Glucoseoxidase	20.11.2019	25.11.2019
8	Enzymatic hydrolysis of Glycogen by Amylases	27.11.2019	02.12.2019
9	SECOND SESSIONAL	18.12.2019	16.12.2019

### III SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
1	Enzymatic hydrolysis of Starch by Amylases	22.01.2020	20.01.2020
2	Study of factors affecting Enzyme activity. (pH)	29.01.2020	27.01.2020
3	Study of factors affecting Enzyme activity. (Temp.)	05.02.2020	03.02.2020
4	Preparation of standard buffer solutions and its pH measurements	12.02.2020	10.02.2020
5	Experiment on lipid profile tests	19.02.2020	17.02.2020
6	Determination of sodium potassium in serum.	26.02.2020	24.02.2020
7	Determination of calcium in serum	04.03.2020	02.03.2020
8	Determination of potassium in serum	11.03.2020	09.03.2020
9	THIRD SESSIONAL	25.03.2020	16.03.2020

### LECTURE PLAN- Theory

**SUBJECT** : Pharmaceutical Organic Chemistry (Theory)  
**NAME OF THE STAFF** : Dr. R. Kalirajan  
**DESIGNATION** : Assistant Professor, Department of Pharmaceutical Chemistry

Sessional	Number of Hours of Didactic Lecture	No. of Hours of other Pedagogy	Total No. of Lecture Hours	Tutorial Classes
I	25	2	27	8
II	22	3	25	8
III	28	-	28	7
<b>Total No. of Hours</b>	<b>75</b>	<b>5</b>	<b>80</b>	<b>23</b>

#### I SESSIONAL :25 Lectures + 02 Activities

Lecture No.	Date	Lecture Details
<b>Unit-1: Classification and Nomenclature</b>		<b>10 Hours</b>
1.	08.07.2019	Different types of classification of organic compounds.
2.	09.07.2019	IUPAC systems of nomenclature-Hydrocarbons, Halo hydrocarbons
3.	10.07.2019	IUPAC systems of alcohols, aldehydes, ketones
Tutorial – 1	12.07.2019	-
4.	15.07.2019	IUPAC systems of carboxylic acids
5.	16.07.2019	IUPAC systems of carboxylic acid halides and amides
6.	17.07.2019	IUPAC systems of carboxylic acid esters and acid anhydrides
Tutorial – 2	19.07.2019	-
7.	22.07.2019	IUPAC systems of Amines and ethers
8.	23.07.2019	IUPAC systems of Alicyclic compounds
9.	24.07.2019	IUPAC systems of Alicyclic compounds
Tutorial -3	26.07.2019	-
10.	29.07.2019	IUPAC systems of Aromatic compounds
<b>Unit-2: Isomerism</b>		<b>04 Hours</b>
11.	30.07.2019	Structural isomerism, chain isomerism.
12.	31.07.2019	Positional isomerism, functional isomerism, metamerism, tautomerism.
Tutorial -4	02.08.2019	-
13.	05.08.2019	Stereo isomerism, optical isomerism, geometrical isomerism.
14.	06.08.2019	Specification of configuration, conformational isomerism
<b>Unit-3: Structure and Properties</b>		<b>05 Hours</b>
15.	07.08.2019	Introduction to Atoms and Molecules
Tutorial -5	09.08.2019	--
16.	13.08.2019	Polar molecules, nonpolar molecules.
17.	14.08.2019	Protic molecules, aprotic molecules.
Tutorial – 6	16.08.2019	--
18.	19.08.2019	Inter molecular forces, Melting point and boiling point of organic

		compounds.
19.	20.08.2019	Solubility of organic compounds.
<b>Unit-4: Alkanes</b>		<b>03 Hours</b>
20.	21.08.2019	General properties and method of preparation of alkanes.
21.	26.08.2019	Free radical substitution reactions of alkanes and its reactivity.
22.	27.08.2019	Reaction between methane, ethane, propane and halogens.
<i>Activity – 1</i>	28.08.2019	Revision / Test
Tutorial – 7	30.08.2019	-
<b>Unit-6: Alkyl Halides</b>		<b>03 Hours</b>
23.	03.09.2019	Methods of preparation of Alkyl Halides
24.	04.09.2019	Nucleophilic substitution reactions of alkyl halides
Tutorial – 8	06.09.2019	-
25.	09.09.2019	Kinetics, mechanism and stereo chemistry of nucleophilic substitution reactions.
<i>Activity – 2</i>	11.09.2019	Revision / Test
<b>II SESSIONAL</b>		<b>22 Lectures + 03 Activities</b>
<b>Unit-5: Alkenes</b>		<b>08 Hours</b>
01.	23.09.2019	Structure of alkenes
02.	24.09.2019	Method of preparation of alkenes
Tutorial- 1	27.09.2019	--
03.	30.09.2019	Stability of alkenes
04.	01.10.2019	Rearrangement reaction of carbocations
Tutorial- 2	04.10.2019	--
<i>Activity – 1</i>	09.10.2019	Revision / Test
05.	14.10.2019	Electrophilic addition reactions of alkenes-Markonikov's rule
06.	15.10.2019	Reactions of alkenes
07.	16.10.2019	Reactivity and orientation of E1 and E2 reactions
Tutorial- 3	18.10.2019	--
08.	21.10.2019	Free radical addition reactions of alkenes- orientation, reactivity
<b>Unit-7: Alicyclic compounds</b>		<b>03 Hours</b>
09.	22.10.2019	Method of preparation of alicyclic compounds
10.	23.10.2019	Bayer's strain theory
Tutorial- 4	25.10.2019	-
11.	29.10.2019	Sachse-Mohr theory
<b>Unit-8: Dienes 03 Hours</b>		
12.	30.10.2019	Classifications and stability of dienes.
Tutorial- 5	01.11.2019	-
13.	04.11.2019	Method of preparation of dienes
14.	05.11.2019	Reactions of conjugated dienes
<i>Activity 2</i>	06.11.2019	Revision / Test
Tutorial – 6	08.11.2019	--
<b>Unit-9: Aromatic compounds 08 Hours</b>		
15.	11.11.2019	Structure of benzene, Orbital picture and resonance structure of benzene
16.	12.11.2019	Aromatic character of benzene, Method of preparation of benzene

17.	13.11.2019	Electrophilic substitution reactions of benzene.
18.	15.11.2019	Electrophilic substitution reactions of benzene.
Tutorial – 7	18.11.2019	-
19.	19.11.2019	Classifications of substituents of benzene
20.	20.11.2019	Orientation of mono substituted benzene compounds towards electrophilic substitution reactions.
21.	22.11.2019	aromatic nucleophilic substitution reactions.
Tutorial – 8	25.11.2019	-
22.	26.11.2019	Comparison between aliphatic and aromatic nucleophilic substitution reactions.
Activity-3	27.11.2019	Class Test/revision
<b>III SESSIONAL</b>		<b>28 Lectures + 01 Activities</b>
<b>Unit-10: Carbonyl Compounds</b>		<b>06 Hours</b>
01.	16.12.2019	Method preparation of aldehydes and ketones
02.	17.12.2019	Nucleophilic addition reaction
03.	18.12.2019	Nucleophilic addition reaction contd.,
Tutorial – 1	20.12.2019	--
04.	20.01.2020	Aldol and crossed Aldol condensation reaction
05.	21.01.2020	Cannizaro and crossed Cannizaro reactions.
06.	22.01.2020	Perkins and Benzoin reactions.
Tutorial – 2	24.01.2020	-
<b>Unit-11: Carboxylic acids and derivatives</b>		<b>05 Hours</b>
07.	27.01.2020	Method of preparation of carboxylic acids
08.	28.01.2020	Acidity of carboxylic acids and effect of substituents
09.	29.01.2020	Nucleophilic acyl substitution and esterification reaction.
Tutorial – 3	31.01.2020	--
10.	03.02.2020	Carboxylic acid derivatives
11.	04.02.2020	Carboxylic acid derivatives contd.,
<b>Unit-12: Amines</b>		<b>03 Hours</b>
12.	05.02.2020	Method of preparation and basicity of amines.
13.	10.02.2020	Reactions of amines
14.	11.02.2020	Diazotization reactions.
<b>Unit-13: Phenols</b>		<b>03 Hours</b>
15.	12.02.2020	Acidity of phenols
Tutorial – 4	14.02.2020	-
16.	17.02.2020	Reactions of phenols
17.	18.02.2020	Reactions of phenols
<b>Unit-14: Heterocyclic compounds</b>		<b>04 Hours</b>
18	19.02.2020	Classification and nomenclature of heterocyclic compounds
19	24.02.2020	Nomenclature contd.,
20	25.02.2020	Structures of heterocyclic compounds
21	26.02.2020	Medicinal uses of important heterocyclic compounds
Tutorial – 5	28.02.2020	--
<b>Unit-15: Carbohydrates</b>		<b>03 Hours</b>
22.	02.03.2020	Introduction to carbohydrates
23.	03.03.2020	Classification of carbohydrates
24.	04.03.2020	Qualitative tests of carbohydrates
Tutorial – 6	06.03.2020	--



<b>Unit-16:Amino acids and Proteins</b>		<b>04 Hours</b>
25.	06.03.2020	Classification of amino acids
26.	09.03.2020	Qualitative tests for amino acids
27.	10.03.2020	Classification of proteins and their structures.
28.	11.03.2020	Qualitative tests for proteins.
Tutorial – 7	13.03.2020	--

**Text books:**

1. A textbook of Organic Chemistry by Arun Bahl and B.S. Bahl.
2. Textbook of Pharmaceutical organic Chemistry by Dr.Anil Bhandari and Dr.G.K.Singh

**Reference books:**

1. Organic Chemistry by I.L.Finar; Volume-I; 6<sup>th</sup> Edition;
2. Robert Thornton Morrison and Robert Neilson Boyd-Organic Chemistry; Sixth edition.

**LECTURE PLAN-Practicals**

**SUBJECT** : Pharmaceutical Organic Chemistry (Practical)  
**NAME OF THE STAFF** : Dr. R. Kalirajan  
**DESIGNATION** : Assistant Professor, Dept. of Pharmaceutical Chemistry

Sessional	Number of Practicals (Mention the Highest Number Amongst Various Batches)	Total Number of Practical Hours (Number of Practicals X 3)
I	09	27
II	08	24
III	09	27
<b>Total No. of Practicals /Hours</b>	26	78

**I SESSIONAL**

Practical No.	Name of the Experiment	Dates	
		Batch I	Batch II
1.	Introduction to laboratory glass wares	09.07.2019	10.07.2019
2.	Recrystallization of organic compounds	16.07.2019	17.07.2019
3.	Synthesis of benzoic acid	23.07.2019	24.07.2019
4.	Synthesis of 3,5-dibromosalicylic acid	30.07.2019	31.07.2019

5.	Synthesis of p-nitro acetanilide	06.08.2019	07.08.2019
6.	Synthesis of dibenzal acetone	13.08.2019	14.08.2019
7.	Synthesis of 1-phenyl azo-2-naphthol	20.08.2019	21.08.2019
8.	Synthesis of picric acid	27.08.2019	28.08.2019
9.	<b>I Sessional Practical Examination</b>	03.09.2019	04.09.2019

## II SESSIONAL

Practical No.	Name of the Experiment	Dates	
		Batch I	Batch II
1.	Synthesis of Aspirin	24.09.2019	03.10.2019
2.	Synthesis of Acetanilide	15.10.2019	16.10.2019
3.	Determination of melting point/ Boiling point	22.10.2019	23.10.2019
4.	Introduction to stereochemistry model	29.10.2019	30.10.2019
5.	Systematic qualitative analysis of unknown organic compounds-General	05.11.2019	06.11.2019
6.	Systematic qualitative analysis of unknown organic compounds-Preliminary and Lassaigns tests	12.11.2019	13.11.2019
7.	Systematic qualitative analysis of unknown organic compounds-Preliminary and Lassaigns tests	19.11.2019	20.11.2019
8	<b>II Sessional practical Examination</b>	26.11.2019	27.11.2019

## III SESSIONAL

Practical No.	Name of the Experiment	Dates	
		Batch I	Batch II
1.	Systematic qualitative analysis of unknown organic compounds-Compound 1	17.12.2019	18.12.2019
2.	Systematic qualitative analysis of unknown organic compounds- 2	21.01.2020	22.01.2020
3.	Systematic qualitative analysis of unknown organic compounds- 3	28.01.2020	29.01.2020
4.	Systematic qualitative analysis of unknown organic compounds-4	04.02.2020	05.02.2020
5.	Systematic qualitative analysis of unknown organic compounds- 5	11.02.2020	12.02.2020
6.	Systematic qualitative analysis of unknown organic compounds- 6	18.02.2020	19.02.2020
7.	Systematic qualitative analysis of unknown organic compounds- 7	25.02.2020	26.02.2020
8.	Systematic qualitative analysis of unknown organic compounds-8	03.03.2020	04.03.2020
9.	<b>III Sessional examination</b>	10.03.2020	11.03.2020

### LECTURE PLAN-Theory

**SUBJECT** : Pharmaceutical Inorganic Chemistry (Theory)  
**NAME OF THE STAFF** : Dr. Srikanth Jupudi  
**DESIGNATION** : Assistant Professor, Dept. of Pharmaceutical Chemistry

Sessional	Number of Hours of Didactic Lecture	No. of Hours of other Pedagogy	Total Number of Lecture Hours	Tutorial Classes
I	16	01	17	09
II	17	-	17	10
III	17	02	19	10
<b>Total Number of Hours</b>	50	03	53	29

#### I SESSIONAL :16 Lectures + 01 Activity

Lecture No.	Date	Contents of the Lecture
<b>1. Errors</b>		<b>02 Hours</b>
01	04.07.2019	Introduction. Sources of error, types of errors, methods of minimizing errors.
Tutorial-1	05.07.2019	-
02	06.07.2019	Accuracy and precision, Significant figures
<b>2. Fundamentals of volumetric analysis</b>		<b>04 Hours</b>
01	11.07.2019	Theories of Acid-Base indicators, Methods of expressing concentration
Tutorial-2	12.07.2019	-
02	13.07.2019	Primary and secondary standard
03	18.07.2019	Preparation and standardization of various volumetric solutions like oxalic acid, sodium hydroxide
Tutorial-3	19.07.2019	-
04	20.07.2019	Hydrochloric acid, sodium thiosulphate, sulphuric acid
<b>3. Acid base titration</b>		<b>02 Hours</b>
01	25.07.2019	Classification and estimation of strong, weak acids and bases
Tutorial-4	26.07.2019	-

02	27.07.2019	Estimation of very weak Acids and Bases
<b>4. Principles of redox titrations 03 Hours</b>		
01	01.08.2019	Concept of oxidation and reduction. Redox reactions, strength and equivalent weights of oxidizing and reducing agents
Tutorial-5	02.08.2019	-
02	03.08.2019	Theory of redox titrations, cerimetry, Iodimetry, Iodometry, Bromometry titrations with potassium iodate, potassium bromate.
03	08.08.2019	Titanous chloride, 2,6-dichlorophenol indophenol
Tutorial-6	09.08.2019	-
<b>5. Non aqueous titration 02 Hours</b>		
01	10.08.2019	Introduction to solvents, classification of solvents
Tutorial-7	16.08.2019	-
02	17.08.2019	Estimation of Sodium benzoate, Ephedrine HCl
<b>6. Principles of precipitation titrations 03 Hours</b>		
01	22.08.2019	Mohr's, Modified Mohr's method
02	24.08.2019	Volhard's, Modified Volhard's methods
Tutorial-8	30.08.2019	-
03	31.09.2019	Fajan's test with example. Estimation of sodium chloride and Ammonium chloride by modified Volhard's method.
<i>Activity-1</i>	05.09.2019	Group discussion on precipitation titrations
Tutorial-9	06.09.2019	-
<b>II SESSIONAL: 17 Lectures</b>		
<b>7. Complexometric titration and its classification 03 Hours</b>		
Tutorial-1	20.09.2019	-
1	21.09.2019	Estimation of Magnesium sulphate.
2	26.09.2019	Estimation of Calcium gluconate by complexometric method.
Tutorial-2	27.09.2019	-
3	28.09.2019	Metal ion indicator.
<b>8. Gravimetry 02 Hours</b>		
1	03.10.2019	Introduction to gravimetric method, Steps involved in gravimetric method
Tutorial-3	04.10.2019	-
2	10.10.2019	Precipitants. Estimation of Barium sulphate by gravimetric method.
Tutorial-4	11.10.2019	-
<b>9. Limit Test 06 Hours</b>		
1	12.10.2019	Source and effect of impurities in pharmacopeial substances
2	17.10.2019	Importance, general principle and procedures for limit test,

		Limit test for chloride.
Tutorial-5	18.10.2019	-
3	19.10.2019	Limit test for sulphate & Limit test for iron
4	24.10.2019	Limit test for Arsenic & Limit test for lead
Tutorial-6	25.10.2019	-
5	31.10.2019	Limit test for Heavy metals
Tutorial-7	01.11.2019	-
6	02.11.2019	Special procedure for limit test for chloride and sulphate.
General methods of preparation, assay*, storage condition and medicinal uses of inorganic compounds belonging to the following classes		
<b>10. Medicinal gases 01 Hour</b>		
1	07.11.2019	Oxygen, Nitrous oxide, carbon dioxide
Tutorial-8	08.11.2019	-
<b>11. Acidifiers 01 Hour</b>		
1	09.11.2019	Definition, Dil. HCl, Ammonium Chloride*
<b>12. Antacid 03 Hour</b>		
1	14.11.2019	Classification, Ideal properties, Preparation containing combination of antacids.
Tutorial-9	15.11.2019	-
2	16.11.2019	Aluminum Hydroxide gel*, sodium bicarbonate*, Magnesium trisilicate
3	21.11.2019	Magnesium carbonate (Light and Heavy), Magnesium hydroxide mixture*
Tutorial-18	22.11.2019	-
<b>13. Cathartics 1 Hour</b>		
1	23.11.2019	Magnesium sulphate, sodium orthophosphate
<b>III SESSIONAL PORTIONS: 17 Lectures + 02 Activity</b>		
<b>14. Major extra and intracellular electrolytes 04 Hours</b>		
01	05.12.2019	Functions of major Physiological ions- Sodium, potassium, calcium, magnesium, calcium, sulphate, phosphate, bicarbonate
Tutorial-1	06.12.2019	-
02	07.12.2019	Electrolyte used in the replacement therapy; Sodium chloride*, Sodium chloride Injection, Sodium chloride hypertonic injection, Sodium chloride compound injection
Tutorial-2	13.12.2019	-
03	14.12.2019	Potassium chloride, Potassium chloride injection, Calcium gluconate, , Calcium gluconate injection
04	19.12.2019	Electrolyte combination therapy and ORS, Physiological acid base balance
Tutorial-3	20.12.2019	-

<b>15. Essential trace elements 01 Hour</b>		
1	21.12.2019	Copper, iron, iodine and zinc
Tutorial-4	17.01.2020	-
<b>16. Antimicrobials 03 Hour</b>		
01	18.01.2020	Definition-Potassium permanganate*, Hydrogen peroxide*
02	23.01.2020	Chlorinated lime*, Iodine and its preparation
Tutorial-5	24.01.2020	-
03	25.01.2020	Boric acid*
<b>17. Pharmaceutical aids 01 Hour</b>		
01	30.01.2020	Bentonite, sodium metabisulphite, barium sulphate*
Tutorial-6	31.01.2020	-
<b>18. Dental products 02 Hours</b>		
01	01.02.2020	Dentifrices, Role of fluoride in the treatment of dental caries, Desensitizing agents.
02	06.02.2020	Calcium carbonate, Sodium fluoride, Stannous fluoride, Zinc Eugenol cement
<b>19. Miscellaneous agents 04 Hours</b>		
01	13.02.2020	Expectorants and respiratory stimulants: Potassium iodide*.
Tutorial-7	14.02.2020	-
02	15.02.2020	Heamatinics: Ferrous sulphate*, Ferrous gluconate, Ferrous fumarate
03	20.02.2020	Emetics: Copper sulphate*, Sodium potassium tartarate.
04	22.02.2020	Poison and Antidote: Sodium thioisulphate, Activated charcoal
<b>20. Radio pharmaceuticals 02 Hours</b>		
01	27.02.2020	Radio activity, Natural and artificial radio activity, Measurement of radio activity, Properties of $\alpha$ , $\beta$ , $\gamma$ radiations
Tutorial-8	28.02.2020	-
02	05.03.2020	Half-life, radio isotopes, storage, precautions and pharmaceutical application of radioactive substances, Study of radio isotopes sodium iodide I-121, Ferric citrate Fe-59
Tutorial-9	06.03.2020	-
<i>Activity-1</i>	07.03.2020	Group discussion on Radiopharmaceuticals
<i>Activity-2</i>	12.03.2020	Class Test
Tutorial-10	13.03.2020	-

**Text books:**

1. A textbook of Organic Chemistry by Arun Bahl and B.S. Bahl.
2. Textbook of Pharmaceutical Inorganic Chemistry-Theory & Pratical by V.N.Rajasekaran.

**Reference books:**

1. Pharmaceutical Chemistry-Inorganic by G.R.Chatwal.
2. Pharmaceutical Inorganic Chemistry by Dr.A.V. Kasture and Dr.S.G.Wadodkar.

### LECTURE PLAN-Practicals

**SUBJECT** : Pharmaceutical Inorganic Chemistry (Practical)  
**NAME OF THE STAFF** : Mr. L Kaviarasan  
**DESIGNATION** : Research Scholar, Dept. of Pharmaceutical Chemistry

Sessional	Number of Practicals (Mention the Highest Number Amongst Various Batches)	Total Number of Practical Hours (Number of Practicals X 3)
I	10	30
II	08	24
III	08	24
<b>Total Number of Practicals/Hours</b>	26	78

#### I SESSIONAL

Practical No.	Name of the Experiment	Date(s)	
		Batch I	Batch II
Limit tests			
1.	Limit test for chloride	12.07.2019	09.07.2019
2.	Limit test for sulphate	19.07.2019	16.07.2019
3.	Limit test for iron	26.07.2019	23.07.2019
4.	Limit test for Heavy metals	02.08.2019	30.07.2019
5.	Limit test for Arsenic	09.08.2019	06.08.2019
6.	Limit test for chloride and sulphate on sodium benzoate/potassium permanganate/sodium salicylate	16.08.2019	13.08.2019
7.	Limit test for chloride and sulphate on sodium benzoate/potassium permanganate/sodium salicylate	30.08.2019	20.08.2019
Preparation and standardization of the following			
8.	0.IN NaOH	06.09.2019	27.08.2019
9.	0.IN KMnO <sub>4</sub>	13.09.2019	03.09.2019
10.	0.IN HClO <sub>4</sub>	20.09.2019	17.09.2019

#### II SESSIONAL

Assay			
1	Ammonium chloride-acid base titration (Formal titration)	27.09.2019	24.09.2019
2	Ferrous sulphate- (redox) Ceric ammonium sulphate titration	04.10.2019	01.10.2019
3	Copper sulphate- (redox) Iodometry	11.10.2019	15.10.2019
4	Calcium gluconate-complexometry	18.10.2019	22.10.2019
5	Hydrogen peroxide- (redox -Permanganometry)	25.10.2019	29.10.2019

6	Sodium benzoate-nonaqueous titration	08.11.2019	05.11.2019
7	Assay of KI-KIO <sub>3</sub> titration	15.11.2019	12.11.2019
8	Sodium chloride-Modified Volhard's method	22.11.2019	19.11.2019
<b>III SESSIONAL</b>			
1	Sodium benzoate-non- aqueous titration	13.12.2019	17.12.2019
2	Assay of Zinc oxide (acid base back titration)	20.12.2019	21.01.2020
Test for identify for the following		17.01.2020	28.01.2020
3	Ferrous sulphate/ Calcium chloride	24.01.2020	04.02.2020
4	Sodium bicarbonate/ Potassium iodide.	31.01.2020	11.02.2020
Test for purity for the following			
5	Swelling power in Bentonite/ Ammonium salts in Potash alum	14.02.2020	18.02.2020
6	Presence of Iodates in KI	28.02.2020	25.02.2020
Preparation of inorganic pharmaceuticals			
7	Boric acid/Potash alum	06.03.2020	03.03.2020
8	Magnesium hydroxide/Magnesium sulphate	13.03.2020	10.03.2020

#### LECTURE PLAN –Theory

**SUBJECT** : Remedial Mathematics(Theory)  
**NAME OF THE STAFF** : Mr .Jayakumar C  
**DESIGNATION** : Assistant Professor, Dept. of Pharmacy Practice

Sessional	Number of Hours of Didactic Lecture	No. of Hours of other Pedagogy/ Activity	Total Number of Lecture Hours	Tutorial Classes
I	24	03	27	10
II	26	-	26	08
III	25	03	28	07
<b>Total Number of Hours</b>	75	06	81	25

**I SESSIONAL : 24 Lectures + 03 Activities**

Lecture No.	Date	Lecture Details
<b>Unit-1: Algebra</b>		
1	05-07-2019	Matrices, definition and examples
2	06-07-2019	Addition and subtraction of matrices



<b>Tutorial - 1</b>	06-07-2019	--
<b>3</b>	10-07-2019	Multiplication of matrices
<b>4</b>	12-07-2019	Transpose of matrix, sums related to transpose
<b>5</b>	13-07-2019	Pharmaceutical sums related to addition , subtraction
<b>Tutorial -2</b>	13-07-2019	--
<b>6</b>	17-07-2019	Pharmaceutical sums related to multiplication
<b>7</b>	19-07-2019	Determinants, definition and examples
<b>8</b>	20-07-2019	Properties of matrices(without proof)
<b>Tutorial -4</b>	20-07-2019	--
	24-07-2019	<b>Unit Test - 1</b>
<b>9</b>	26-07-2019	Modification of rows and columns using properties
<b>10</b>	27-07-2019	Sums related to properties of determinants
<b>Tutorial -5</b>	27-07-2019	--
<b>11</b>	31-07-2019	Cofactor matrix for a given matrix
<b>12</b>	02-08-2019	Adjoint of a square matrix
<b>13</b>	03-08-2019	Inverse of a matrix
<b>Tutorial -6</b>	03-08-2019	--
<b>14</b>	07-08-2019	Solutions to linear equations using matrix method
	09-08-2019	<b>Unit Test - 2</b>
<b>15</b>	10-08-2019	Solutions to linear equations
<b>Tutorial -7</b>	10-08-2019	--
<b>16</b>	14-08-2019	Cramer's rule
<b>17</b>	16-08-2019	Cayley Hamilton theorem ( without proof)
<b>18</b>	17-08-2019	Sums using Cayley Hamilton theorem
<b>Tutorial -8</b>	17-08-2019	--
	21-08-2019	<b>Unit Test - 3</b>
<b>Unit-2: Trigonometry</b>		
<b>19</b>	24-08-2019	Properties of triangles
<b>Tutorial -9</b>	24-08-2019	--
<b>20</b>	28-08-2019	Half angle formula and simple sums
<b>21</b>	30-08-2019	Simple sums to prove identities
<b>22</b>	31-08-2019	Area of triangle in terms of trigonometric ratios
<b>Tutorial -10</b>	31-08-2019	--
<b>23</b>	04-09-2019	Relation between sides and angles of a triangle
<b>24</b>	06-09-2019	Sine, cosine formula, Definition and proof

## II SESSIONAL : 26 Lectures

<b>25</b>	07-09-2019	Napier's formula, definition and proof
<b>Tutorial -11</b>	07-09-2019	--
<b>26</b>	11-09-2019	Solution of triangles
<b>27</b>	25-09-2019	Sums related to solutions of triangle
<b>Unit-3: Analytical Geometry</b>		
<b>28</b>	27-09-2019	Definition of point, locus
<b>29</b>	28-09-2019	Derivation of equation of straight line in slope point form
<b>Tutorial -12</b>	28-09-2019	--
<b>30</b>	04-10-2019	Finding slope of a line
<b>31</b>	05-10-2019	Sums related to point slope form

<b>Tutorial -13</b>	05-10-2019	--
<b>32</b>	09-10-2019	Derivation of equation of straight line in two points form
<b>33</b>	11-10-2019	Sums related to two points form
<b>34</b>	12-10-2019	Derivation of equation of straight line in slope intercept form
<b>Tutorial -14</b>	12-10-2019	--
<b>35</b>	16-10-2019	Sums related to slope intercept form, section formula
<b>36</b>	18-10-2019	Condition for parallel and perpendicular lines
<b>37</b>	19-10-2019	Distance formulae and sums
<b>Tutorial -15</b>	19-10-2019	--
<b>38</b>	23-10-2019	Derivation of equation of straight line in intercept form
<b>39</b>	25-10-2019	Sums related to slope intercept form
<b>40</b>	30-10-2019	Angle between two straight line
<b>41</b>	01-11-2019	Perpendicular, parallel distance between point and line
<b>42</b>	02-11-2019	Standard equation of parabola, properties
<b>Tutorial -16</b>	02-11-2019	--
<b>43</b>	06-11-2019	Sums related to parabola
<b>44</b>	08-11-2019	Finding centre and radius of circles
<b>45</b>	09-11-2019	two circles to touch each other, orthogonal circles
<b>Tutorial -17</b>	09-11-2019	--
<b>Unit-4: Laplace Transforms</b>		
<b>46</b>	13-11-2019	Introduction to Laplace transforms
<b>47</b>	15-11-2019	Definition and formulae of Laplace transform
<b>48</b>	16-11-2019	Laplace transform of elementary functions
<b>Tutorial -18</b>	16-11-2019	--
<b>49</b>	20-11-2019	Linearity and shifting property
<b>50</b>	22-11-2019	Sums related to Shifting property

### III SESSIONAL : 25 Lectures + 03 Activities

<b>Unit-5: Differential calculus</b>		
<b>51</b>	23-11-2019	Definition of differentiation and formulae
<b>Tutorial -19</b>	23-11-2019	--
<b>52</b>	27-11-2019	Functions and sums related to functions
<b>53</b>	06-12-2019	Limit of a function and evaluating the limits using methods
<b>54</b>	07-12-2019	Differentiation of the functions from first principles
<b>Tutorial -20</b>	07-12-2019	--
<b>55</b>	18-12-2019	Differentiation of functions using product rule
<b>56</b>	20-12-2019	Differentiation of functions using product rule
<b>57</b>	21-12-2019	Differentiation of functions using quotient rule
<b>Tutorial -21</b>	21-12-2019	--
<b>58</b>	17-01-2020	Sums using quotient rule
<b>59</b>	18-01-2020	Differentiation of functions using chain rule
<b>60</b>	22-01-2020	Differentiation of functions using logarithms
<b>61</b>	24-01-2020	Differentiation of composite functions, substitution method
<b>62</b>	25-01-2020	Differentiation of parametric functions
<b>Tutorial -22</b>	25-01-2020	--

<b>63</b>	12-02-2020	Differentiation of trigonometric functions, partial differentiation
<b>64</b>	14-02-2020	Sums related to partial differentiation
<b>65</b>	15-02-2020	Introduction to Euler's theorem
<b>Unit-6: Integral Calculus</b>		
<b>66</b>	19-02-2020	Partial fractions introduction, sums
<b>67</b>	22-02-2020	Definition of integration
<b>Tutorial -23</b>	22-02-2020	--
<b>68</b>	26-02-2020	Integration formulae and derivation
<b>69</b>	28-02-2020	Integration of simple functions
<b>70</b>	29-02-2020	Integration by parts
<b>Tutorial -24</b>	29-02-2020	--
<b>71</b>	04-03-2020	Definite integrals, sums
<b>72</b>	06-03-2020	Integration by substitution
<b>73</b>	07-03-2020	Integration by using trigonometric identities
<b>Tutorial -25</b>	07-03-2020	--
<b>Unit-7: Differential Equations</b>		
<b>74</b>	11-03-2020	Definition and use of differential equations
<b>75</b>	13-03-2020	Pharmaceutical applications of differential equations
	25-03-2020	<b>Revision Test - 1</b>
	27-03-2020	<b>Revision Test - 2</b>
	28-03-2020	<b>Revision Test - 3</b>

**Text books**

1. Differential calculus By Shantinakaran
2. Text book of Mathematics for second year pre-university by Prof.B.M.Sreenivas

**References:**

1. Integral calculus By Shanthinarayan
2. Engineering mathematics By B.S.Grewal
3. Trigonometry Part-I By S.L.Loney

### LECTURE PLAN -Theory

**SUBJECT** : Remedial Biology (Theory)  
**NAME OF THE STAFF** : Mr. Balaji H  
**DESIGNATION** : Research Scholar

Sessional	Number of Hours of Didactic Lecture	No. of Hours of other Pedagogy/ Activity	Total Number of Lecture Hours	Tutorial Classes
I	25	02	27	09
II	21	05	26	08
III	26	01	27	04
<b>Total Number of Hours</b>	72	08	80	21

#### I SESSIONAL : 25 Lectures + 02 activities

Lecture No.	Date	Lecture Details
<b>Unit-1: Introduction to Plants 02 Hours</b>		
1.	05-07-2019	General introduction about the subject
2.	06-07-2019	Introduction to plants
<b>Tutorial - 1</b>	06-07-2019	--
<b>Unit-2: General organization of plants cell and its inclusions 04 Hours</b>		
1.	10-07-2019	Introduction to plant cell
2.	12-07-2019	Cell wall
3.	13-07-2019	Cell membrane
<b>Tutorial -2</b>	13-07-2019	--
4.	17-07-2019	Cell organelles
<b>Unit-3: Plant tissues 04 Hours</b>		
1.	19-07-2019	Introduction to plant tissues
2.	20-07-2019	Various types of plant tissues
<b>Tutorial -3</b>	20-07-2019	--
3.	24-07-2019	Various types of plant tissues (cont...)
4.	26-07-2019	Plant tissue system
<b>Unit-4: Plant kingdom and its classification 04 Hours</b>		
1.	27-07-2019	Algae
<b>Tutorial -4</b>	27-07-2019	--
2.	31-07-2019	Bryophytes
3.	02-08-2019	Pteridophytes
4.	03-08-2019	Spermatophytes
<b>Tutorial -5</b>	03-08-2019	--
<b>Unit-5: Morphology of plants 04 Hours</b>		
1.	07-08-2019	Morphology of aerial parts
2.	09-08-2019	Morphology of aerial parts (cont...)
3.	10-08-2019	Morphology of underground parts
<b>Tutorial -6</b>	10-08-2019	---
4.	14-08-2019	Morphology of underground parts

<b>Unit-6: Modification of Root, Stem and Leaf</b>		<b>03 Hours</b>
1.	16-08-2019	Modification of Root
2.	17-08-2019	Modification of Root (cont...)
<b>Tutorial -7</b>	17-08-2019	---
3.	21-08-2019	Modification of Stem
4.	24-08-2019	Modification of Stem
<b>Tutorial -8</b>	24-08-2019	
5	28-08-2019	Modification of Leaf
6	30-08-2019	Modification of Leaf
7	31-08-2019	Modification of Leaf
<b>Tutorial -9</b>	31-08-2019	---
<b>Activity I</b>	04-09-2019	Class test I
<b>Activity II</b>	06-09-2019	Class test II

**II SESSIONAL : 21 Lectures + 05 Activities**

<b>Lecture No.</b>	<b>Date</b>	<b>Lecture Details</b>
<b>Unit-7: Inflorescence and pollination of flowers</b>		<b>03 Hours</b>
1.	07-09-2019	Inflorescence
<b>Tutorial -1</b>	07-09-2019	
2.	11-09-2019	Inflorescence (cont...)
3.	25-09-2019	Pollination of flowers
<b>Unit-8: Morphology of fruits and seeds</b>		<b>04 Hours</b>
1.	27-09-2019	Morphology of fruits
2.	28-09-2019	Morphology of fruits (cont...)
<b>Tutorial -2</b>	28-09-2019	---
3.	04-10-2019	Morphology of seeds
4.	05-10-2019	Morphology of seeds (cont...)
<b>Tutorial -3</b>	05-10-2019	---
<b>Unit-9: Plant physiology</b>		<b>04 Hours</b>
1.	09-10-2019	Introduction to plant physiology and mineral nutrition
2.	11-10-2019	Various types of soil and plant hormones
3.	12-10-2019	Respiration and transpiration
<b>Tutorial -4</b>	12-10-2019	---
4.	16-10-2019	Photosynthesis
<b>Unit-10: Taxonomy</b>		<b>06Hours</b>
1.	18-10-2019	Taxonomy of Leguminosae
2.	19-10-2019	Taxonomy of Umbelliferae
<b>Tutorial -5</b>	19-10-2019	---
3.	23-10-2019	Taxonomy of Solanaceae
4.	25-10-2019	Taxonomy of Lilliaceae
5.	30-10-2019	Taxonomy of Zingiberaceae
6.	01-11-2019	Taxonomy of Rubiaceae
<b>Unit-11: Study of microbes and antibiotic</b>		<b>04 Hours</b>
1.	02-11-2019	Study of fungi
<b>Tutorial -6</b>	02-11-2019	---
2.	06-11-2019	Study of yeast
3.	08-11-2019	Study of bacteria
4.	09-11-2019	Study of penicillin
<b>Tutorial -7</b>	09-11-2019	----
<b>Activity 1</b>	13-11-2019	Group discussion
<b>Activity 2</b>	15-11-2019	Class Test I

<b>Activity 3</b>	16-11-2019	Class Test II
<b>Tutorial -8</b>	16-11-2019	
<b>Activity 4</b>	20-11-2019	Group Discussion
<b>Activity 5</b>	22-11-2019	Quiz

**III SESSIONAL : 26 Lectures + 01 Activity**

<b>Lecture No.</b>	<b>Date</b>	<b>Lecture Details</b>
<b>Unit-1: Study of Animal Cells 05 Hours</b>		
Tutorial 1	07-12-2019	--
1.	23-11-2019	Study of animal cell
2.	18-12-2019	Study of animal cell
3.	20-12-2019	Study of animal cell
4.	21-12-2019	Study of animal cell
Tutorial 2	21-12-2019	--
5.	17-01-2020	Study of animal cell
<b>Unit-2: Study of Animal Tissues 05 Hours</b>		
1.	18-01-2020	Study of animal tissues
2.	22-01-2020	Study of animal tissues
3.	24-01-2020	Study of animal tissues
4.	25-01-2020	Study of animal tissues
Tutorial 3	25-01-2020	
5.	12-02-2020	Study of animal tissues
<b>Unit-3: Detailed Study of Frog</b>		<b>04 Hours</b>
1.	14-02-2020	Detailed study of frog
2.	15-02-2020	Detailed study of frog
3.	19-02-2020	Detailed study of frog
4.	22-02-2020	Detailed study of frog
Tutorial 4	22-02-2020	--
<b>Unit-4: Study of Pisces, Reptiles, Aves</b>		<b>05 Hours</b>
1.	26-02-2020	Study of pisces
2.	28-02-2020	Study of pisces
3.	29-02-2020	Study of reptiles
Activity I	29-02-2020	Class test
4.	04-03-2020	Study of reptiles, aves
5.	06-03-2020	Study of aves
<b>Unit-5: General Organization of Mammals 06 Hours</b>		
1.	07-03-2020	General organization of mammals
2.	07-03-2020	General organization of mammals
<b>Unit-6: Study of Poisonous Animals 07 Hours</b>		
1.	11-03-2020	Study of poisonous animals
2.	13-03-2020	Study of poisonous animals
3.	25-03-2020	Study of poisonous animals
4.	27-03-2020	Study of poisonous animals
5.	28-03-2020	Study of poisonous animals

### Lecture Plan -Practicals

**SUBJECT** : Remedial Biology  
**NAME OF THE STAFF** : Mr.Balaji H  
**DESIGNATION** : Research scholar

Sessional	Number of Practicals (Mention the Highest Number Amongst Various Batches)	Total Number of Practical Hours (Number of Practicals X 3)
I	8	24
II	9	27
III	10	30
<b>Total Number of Practicals/Hours</b>	27	81

#### I SESSIONAL

Practical No.	Name of the Experiment	Date
1.	Introduction of biology experiments (section cutting techniques),	04/07/2019
2.	Mounting and staining, permanence slide preparation and Microscope)	11/07/2019
3.	Study of cell wall constituents and cell inclusions	18/07/2019
4.	Study of Stem modifications	25/07/2019
5.	Study of Root modifications	01/08/2019
6.	Study of Leaf modifications	08/08/2019
7.	Identification of Fruits and seeds	22/08/2019
8.	Record work	05/09/2019

#### II SESSIONAL

Practical No.	Name of the Experiment	Date
1.	Preparation of Permanent slides	26/09/2019
2.	Simple plant physiological experiments	03/10/2019
3.	Identification of animals	10/10/2019
4.	Record work	17/10/2019
5.	Record work	24/10/2019
6.	Repeat	31/10/2019
7.	Repeat	07/11/2019
8.	Repeat	14/11/2019
9.	Repeat	21/11/2019

#### III Sessional

Practical No.	Name of the Experiment	Date
1	Identification of animals	05/12/2019
2	Identification of animals	19/12/2019
3	Detailed study of Frog by using computer models	23/01/2020
4	Detailed study of Frog by using computer models	30/01/2020
5	Computer based tutorials	06/02/2020
6	Computer based tutorials	10/02/2020
7	Record work	20/02/2020
8	Record work	27/02/2020
9	Record work	05/03/2020
10	Record work	12/03/2020



## JSS Academy of Higher Education & Research, Mysuru

(Deemed to be University, Accredited 'A+' Grade by NAAC)

### JSS College of Pharmacy, Rocklands, Ooty – 643 001

(An ISO 9001-2015 Certified Institution)

#### I Pharm. D Time Table (AY: 2019-20)

Day	9-10 am	10-11 am	11-12 am	12 -1 pm	1-2 pm	2-3 pm	3-4 pm	4-5 pm
Monday	MBC (Tu) [MJNC]	Batch I- HAP (P)[JS] Batch II- MBC(P) [SBS]			LUNCH BREAK	HAP (T) [JS]	POC (T) [RK]	PC (T) [DNV]
Tuesday	MBC (T) [MJNC]	Batch I - POC (P) (RK) Batch II - PIC (P) [LK]				HAP (T) [JS]	POC (T) [RK]	PC (T) [DNV]
Wednesday	MBC (T) [MJNC]	Batch I- MBC(P) [SBS] Batch II- POC (P)[RK]				HAP (T) [JS]	POC [T] [RK]	RM/RB (T) [CJ/BH]
Thursday	MBC (T) [MJNC]	Batch I- PC(P) [DNV] Batch II - HAP (P)[JS]				PIC (T) [SJ]	RB (P) [BH]	
Friday	POC [Tu] [RK]	Batch I- PIC (P) [LK] Batch II- PC (P) [DNV]				PIC (Tu) [SJ]	PC (Tu) [DNV]	RM/RB (T) [CJ/BH]
Saturday	HAP- (Tu) [JS]	PIC (T) [SJ]	RM/RB (T) [CJ/BH]	RM/RB (Tu) [CJ/BH]		Library/Sports		

\*T- Theory, P- Practical, Tu-Tutorial hour.

#### Subject-in-Charges:

- |   |  |
|---|--|
| 1. Human Anatomy and Physiology (HAP)                 | - Mr. J. Saravanan (JS)                          |
| 2. Pharmaceutics (PC)                                 | - Dr. D. Nagasamy Venkatesh (DNV)                |
| 3. Medicinal Biochemistry (MBC)                       | - Dr. M.J.N. Chandrasekar (MJNC)/Mr. S B Santosh |
| 4. Pharmaceutical Organic Chemistry (POC)             | - Dr. R. Kalirajan (RK)                          |
| 5. Pharmaceutical Inorganic Chemistry (PIC)           | - Dr. Srikanth Jupudi (JS)/Mr. L Kaviarasan      |
| 6. Remedial Mathematics (R.M)/ Remedial Biology (R.B) | - Mr. C. Jayakumar (CJ)/ Mr. Balaji H (BH)       |

**Class in Charge: Mr. Saravanan J**