



सत्यमेव जयते

**JAWAHARLAL INSTITUTE OF POSTGRADUATE  
MEDICAL EDUCATION & RESEARCH**  
(An Institution of National Importance under  
Ministry of Health & Family Welfare, Govt. of India)  
Dhanvantri Nagar, Puducherry – 605 006.

# **MBBS Revised Curriculum Phase – II**

(Approved by 11<sup>th</sup> Standing Academic Committee, JIPMER)

## **2018**



## **CURRICULUM COMMITTEE**

<b>1. Dean (Academic)</b>	<b>Chairperson</b>
<b>2. Head of the Department of Anatomy</b>	<b>Member</b>
<b>3. Head of the Department of Biochemistry</b>	<b>Member</b>
<b>4. Head of the Department of Physiology</b>	<b>Member</b>
<b>5. Head of the Department of Microbiology</b>	<b>Member</b>
<b>6. Head of the Department of Pathology</b>	<b>Member</b>
<b>7. Head of the Department of Pharmacology</b>	<b>Member</b>
<b>8. Head of the Department of Forensic Medicine</b>	<b>Member</b>
<b>9. Head of the Department of P &amp; SM</b>	<b>Member</b>
<b>10. Head of the Department of Medicine</b>	<b>Member</b>
<b>11. Head of the Department of Paediatrics</b>	<b>Member</b>
<b>12. Head of the Department of Surgery</b>	<b>Member</b>
<b>13. Head of the Department of Obst. &amp; Gynae.</b>	<b>Member</b>
<b>14. Head of the Department of Psychiatry</b>	<b>Member</b>
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<b>16. Head of the Department of Orthopaedics</b>	<b>Member</b>
<b>17. Head of the Department of ENT</b>	<b>Member</b>
<b>18. Head of the Department of Ophthalmology</b>	<b>Member</b>
<b>19. Head of the Department of Anaesthesiology</b>	<b>Member</b>
<b>20. Prof. &amp; Head, Department of Medical education</b>	<b>Member</b>
<b>21. Faculty(Academic)</b>	<b>Member Secretary</b>

## **ACADEMIC AFFAIRS MEMBERS**

<b>1. Director</b>	<b>Chairman</b>
<b>2. Dean (Academic)</b>	<b>Member Secretary</b>
<b>3. Faculty (Academic)</b>	<b>Member</b>
<b>4. Controller of Examinations</b>	<b>Member</b>
<b>5. Assistant Controller of Examinations</b>	<b>Member</b>
<b>6. HOD of Medical Education</b>	<b>Member</b>
<b>7. Professor (Examinations)</b>	<b>Member</b>

## **ACKNOWLEDGEMENT**

A curriculum is considered as the “heart” of any learning institution which means that any college or university cannot exist without a curriculum. With its importance in formal education, the curriculum has become a dynamic process due to the changes that occur in our society. Curriculum reform is a challenging and difficult task. Even the effort to ascribing a single definition to curriculum is difficult. Curriculum serves as a body of knowledge to be transmitted. It is also viewed as a process, and as praxis.

I express my heartfelt gratitude to the Director, JIPMER who inspite of being extraordinarily busy in his schedule spared his valuable time for providing guidance in making reforms in this curriculum.

I take this opportunity to express my deepest gratitude to Dr.D. Kadambari, HOD of Medical Education, Dr. Debdatta Basu, Professor (Sr.Scale) of Pathology, Dr. Zayapragassarazan. Z, Additional Professor of Medical Education, Dr. Nanda Kishore Maraju, Additional Professor of Surgery, Dr. Santosh Kumar, Technical Consultant, Medical Education and Head of the Departments and faculty members of Microbiology, Pathology, Pharmacology and Forensic Medicine who earnestly offered their support to develop this curriculum.

I would also express my thanks to the staff members of academic section for their support in bringing out this curriculum in an effective manner.

**Dr. R.P. SWAMINATHAN**  
Dean (Academic)

## **PREAMBLE**

Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Puducherry, under Government of India since the year 1956, is one of the leading Medical Institutions of India. Spread over a sprawling 195 acre campus in an urban locale of Puducherry (formerly Pondicherry), The Institute was functioning under the administrative control of Directorate General of Health Service, Ministry of Health and Family Welfare, New Delhi. On 14-7-2008 JIPMER has been declared as an “Institution of National Importance” by an Act of Parliament, JIPMER, Puducherry. A copy of the Act was Gazette notified on 14-7-2008. In order to demonstrate high standard of medical education on par with international level JIPMER is empowered to set patterns in Undergraduate and Postgraduate Medical Education in all its branches to encourage experiments in the curriculum as per the act and it is outside the jurisdiction of Medical Council of India. The Institution is now empowered to award Medical Degrees, Diplomas, etc., under the clauses 23 & 24 of the said Act. Such Degrees / Diploma, etc., shall be deemed to be included in the schedules to the respective Acts governing Medical Council of India, Indian Nursing Council and Dental Council of India, entitling the holders to the same privileges as those attached to the equivalent awards from the recognized Universities of India.

JIPMER imparts Undergraduate (UG), Postgraduate (PG) and Super Specialty Medical Training through a working hospital (JIPMER Hospital) with bed strength of 2134. Undergraduate degrees M.B.B.S., B.Sc. Nursing, B.Sc. Allied Medical Sciences and post graduate degrees M.Sc., M.D., M.S are offered in 43 disciplines. Super specialty courses (D.M./ M.Ch.) are offered in the following disciplines (Cardiology, Neurology, Cardiothoracic Surgery, Neurosurgery, Urology, Plastic Surgery, Pediatric Surgery, Pediatric Critical care, Neonatology, Clinical Immunology, Clinical Pharmacology, Nephrology, Medical Oncology, Endocrinology, Surgical Oncology, Cardiac Anaesthesia, Medical Gastroenterology and Surgical Gastroenterology). In addition to this Post-Doctoral Fellowship courses are also offered in 12 disciplines. Full-time Ph.D. Programs are also available in eleven disciplines as on date. Master of Public Health & Post Basic Diploma Courses in Nursing were started in January 2014. JIPMER also has started its outreach campus at Karaikal with an intake of 50 students for MBBS course, from the academic session 2015-16.

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## **1. OUTCOMES FOR MBBS COURSE**

### **A. GOAL**

Developing graduates who are capable of independently rendering comprehensive primary healthcare and well versed with fundamentals of course disciplines.

### **B. ENTRUSTABLE PROFESSIONAL ACTIVITIES**

1. Diagnosing and managing common Clinical Presentations
2. Diagnosing and providing first-line care for medical and surgical emergencies
3. Performing general medical procedures
4. Defining and managing common health problems of the community
5. Implementing National Health Programmes
6. Participating in health quality improvement initiatives

### **C. COMPETENCIES**

1. Medical expertise
2. Communication
3. Collaboration
4. Professionalism
5. Health advocacy
6. Leadership
7. Scholarship

### **D. LIST OF CLINICAL PRESENTATIONS (Appendix1)**

### **E. ESSENTIAL SKILLS LIST FOR MBBS (Appendix2)**

### **F. OBJECTIVES FOR EACH DEPARTMENT**

1. To learn fundamentals of the discipline
2. To enable achievement of JIPMER MBBS Curricular Goal

## **2. GUIDELINES FOR IMPLEMENTATION OF MBBS PROGRAMME**

### **A. OVERALL GUIDELINES**

1. Competencies and skills to be facilitated and assessed by formative and summative exams throughout the course to enable achievement of capability to render comprehensive primary healthcare.
2. Fundamentals of course disciplines to be facilitated and assessed by formative and summative exams throughout the course to enable further studies in various disciplines.
3. Integrated Learning to be facilitated by systems-based temporally synchronized teaching- learning and intra-departmental horizontal and vertical correlations of content.
4. Adult learning principles to be followed in teaching-learning and student centered learning strategy to be used.
5. A minimum of 10% of simple theory content in a module to be assigned for self-directed learning. Peer-assisted learning to be used.
6. Early clinical exposure to be used in Phase I. Teaching-learning of Basic Sciences to be included in Phase III.
7. Electives to be included in Phase III.
8. Student doctor method of clinical teaching to be incorporated.
9. Skills to be acquired and certified in skills lab, diagnostic lab and clinical areas.
10. E-learning methods to be used.
11. A Foundation Course to be conducted before MBBS Phase I.
12. Existing time-frame and teaching hours to be maintained.
13. Departmental identities to be maintained in teaching-learning program, examinations and mark sheets.

### **B. GUIDELINES FOR TEACHING-LEARNING**

1. Lectures to include active learning strategies.
2. Practicals to emphasize individual learning of skills.
3. Clinical teaching to emphasize individual learning of skills.
4. Skills lab to be used for skills learning.
5. Self-learning to be promoted by use of e-learning. Peer assisted learning to be promoted through discussions.
6. Spiral curriculum model to be used in clinical teaching-learning which has first cycle in Phase I, second cycle in Phase II and third cycle in Phase III.
7. Student doctor method to be used in clinical teaching using Reporter-Interpreter- Manager-Educator (RIME) strategy

### **C. GUIDELINES FOR ASSESSMENT**

1. Skills to be assessed and certified in skills lab and in practical and clinical sessions using performance criteria.
2. Assessment methods to include assignments, projects, portfolios, MCQs, OSPE and OSCE.

### **D. GUIDELINES FOR PROGRAMME EVALUATION**

Programme evaluation to be done throughout the course.

### **E. GUIDELINES FOR STUDENT SUPPORT**

Student support to be provided throughout the course.

### **F. GUIDELINES FOR FACILITATION OF IMPLEMENTATION**

Central facilitation to be provided throughout the course.



### 3. ANNUAL TIMETABLE

#### Departments of Microbiology, Pathology, Pharmacology and Forensic Medicine

Module	Name of Module	Week and Class Nos	Duration
1	<ul style="list-style-type: none"> <li>General module</li> <li>Immunological system</li> </ul> SPANDAN HOLIDAYS	<b>1-7</b> Class nos. 1-14-Micro 1-18- Path 17-Pharm	7 weeks
<b>First Internal assessment test (approximate period- middle of September)- week 8</b>			
1 cont'd.	<ul style="list-style-type: none"> <li>General module</li> <li>Immunological system</li> </ul>	<b>9-14</b> Class nos. 15-36- Micro 19-36- Path 18-36- Pharm	6 weeks
<b>Second Internal Assessment Test (approximate period- middle of November)- week 15</b>			
<b>Winter vacation- December</b>			
2	<ul style="list-style-type: none"> <li>Hematological system</li> <li>Respiratory system</li> <li>Autonomic nervous system</li> </ul>	<b>16- 25</b> Class nos. 37-67	10 weeks
<b>Third Internal Assessment Test (approximate period- beginning of February)- week 26</b>			
3	<ul style="list-style-type: none"> <li>Gastrointestinal system</li> <li>Cardiovascular system</li> </ul>	<b>27- 32</b> Class nos. 68-86	6 weeks
<b>Fourth Internal Assessment test(approximate period beginning of April) week- 33</b>			
<b>Summer vacation- May</b>			
4	<ul style="list-style-type: none"> <li>Genitourinary system</li> <li>Central nervous system</li> </ul>	<b>34- 39</b> Class nos. 87-104	6 weeks
<b>Fifth Internal Assessment test (approximate period end of July) week- 40</b>			
5	<ul style="list-style-type: none"> <li>Endocrine system</li> <li>Miscellaneous</li> </ul> SPANDAN HOLIDAYS	<b>41-50</b> Class nos. 105- end	10 weeks
<b>Internal Assessment test (approximate period end of September/ beginning of October) week-51</b>			
<b>Revision classes – week 52-53</b>			
<b>Send up examination</b>			
<b>Preparatory holidays</b>			
<b>Exit examination</b>			

Number of the weeks mentioned is only approximate and subject to change based on holidays.

#### 4. SYSTEMS - BASED & TEMPORALLY SYNCHRONISED TOPICS

Sl. NO	Microbiology	Pathology	Pharmacology	Forensic medicine	P&SM	Medicine	Surgery
<b>1. General module and Immunological system</b>							
1.	Introduction & History of Microbiology	Introduction of Pathology	Introduction of Pharmacology	Introduction and History	Nutrition – Macronutrient & Micronutrients, trace elements	Introduction on Practice of Medicine	History of Surgery
2.	Microscopy	Processing of samples and laboratory issues	Nomenclature & Sources of Drugs	Introduction and History-2			
3.	Structure of Bacteria I	Cell injury (5 classes)	Routes of Drug Administration	Medical Jurisprudence 1			
4.	Structure of Bacteria II	Cell injury 2	Pharmacokinetics – 1	Medical Jurisprudence 2	Balanced diet, dietary goals and RDA	Negligence, Patient autonomy, conflict of interest, Confidentiality, Informed consent, Euthanasia	Wound healing
5.	Classification, Nomenclature and bacterial metabolism	Cell injury 3	Pharmacokinetics – 2	Medical Jurisprudence 3			
6.	Growth, nutrition and Cultivation of bacteria	Cell injury 4	Pharmacokinetics – 3	Medical Jurisprudence 4			
7.	Sterilization and Disinfection I	Cell injury 5	Pharmacodynamics – 1	Medical Jurisprudence 5	Nutritional assessment	Genetics – Basic (modes of inheritance, pedigree, clinical application and counseling)	Wound healing 2
8.	Sterilization and Disinfection II SDL – Sterilization controls and disinfectant testing	Inflammation and repair (6)	Pharmacodynamics – 2	Medical Jurisprudence 6			

9.	TUTORIALS	Inflammation and repair 2	Adverse Drug Reactions, Drug Interactions, Bioassay & Biostandardisation	Medical Jurisprudence 7			
10.	Bacterial genetics I	Inflammation and repair 3	Drug Discovery & Development	Identification 1	Nutritional deficiency, public health problem	Nutritional assessment and requirements	Fluid balance 1
11.	Bacterial genetics II SDL-bacteriophages and bacteriocins	Inflammation and repair 4	NSAIDs – 1	Identification 2		Approach to infectious diseases	
12.	Molecular Diagnosis in Infectious Diseases	Inflammation and repair 5	NSAIDs – 2	Identification 3			
13.	Pathogenesis of infectious Disease– I	Inflammation and repair 6	Histamine & Antihistamines	Death / Thanatology 1	Food fortification and adulteration	Approach to infectious diseases - diagnostic and therapeutic principles	Fluid balance 2
14.	Pathogenesis of Infectious Disease –II	Hemodynamics 5 Classes	Serotonin agonists & antagonists	Death / Thanatology 2			
15.	Introduction to immunology and anatomy of the immune apparatus	Hemodynamics 2	Pharmacotherapy of migraine	Death / Thanatology 3			
16.	Innate Immunity	Hemodynamics 3	Drugs affecting peptide derived autacoids	Death / Thanatology 4	Introduction to Medical Sociology		Nutrition 1
17.	Antigens	Hemodynamics 4	Drugs affecting lipid derived autacoids	Death / Thanatology 5			
18.	Antibodies	Hemodynamics 5	Drugs for treatment of shock	Death / Thanatology 6			

19.	Humoral immune response SDL- complement	Immunology Hypersensitivity reactions 1	Drugs for rheumatoid arthritis & gout- 1	Medico legal Autopsy 1	Behaviour, Culture, Role of family in health and disease	Approach to infectious diseases - diagnostic and therapeutic principles; Immune defence mechanisms	Nutrition 2
20.	Cellular immune response	Hypersensitivity reactions 2	Drugs for rheumatoid arthritis & gout- 2	Medicolegal Autopsy 2			
21.	Antigen antibody reaction I	Autoimmunity 1	Essential Medicines & P drugs	Medicolegal Autopsy 3			
22.	Antigen antibody reactions II	SLE and others 2	Chelating agents	Modern mortuary and Autopsy Room Hazards	Social security, psychology and social organizations	Alterations in Temperature, Fever patterns	Metabolic response to trauma and surgery 1
23.	Immuno prophylaxis	Transplant and tumor immunity1	Immunosuppressant And Immunomodulators	Injuries 1		Pain – Pathophysiology, Clinical types, Assessment, Management	
24.	TUTORIALS	Immunodeficiency – Primary	General principles of antimicrobial use – 1	Injuries 2			
25.	Overview of bacterial infections I	Secondary immunodeficiency- AIDS Pathogenesis and pathology	General principles of antimicrobial use – 2	Injuries 3	Introduction to RCH	Alteration in Pulse and Blood Pressure	Metabolic response to trauma and surgery 2
26.	Overview of bacterial infections II	Amyloidosis	Anthelmintic drugs – 1	Injuries 4		Weight Loss and Weight Gain	
27.	Overview of bacterial infections III	Genetics and Metabolic diseases 1	Anthelmintic drugs – 2	Firearm Injuries 1			

28.	Antimicrobial agents and mechanisms of antimicrobial resistance	Genetics and Metabolic diseases 2	Antifungal agents – 1	Firearm Injuries 2	Maternal Health	Dyspnea, Chest Pain, Palpitation	Infections 1
29.	Antimicrobial susceptibility testing and interpretation	Genetics and Metabolic diseases 3	Antifungal agents – 2	Firearm Injuries 3			
30.	Overview of viral infections I	Neoplasia (6 classes)	Penicillin and Cephalosporins - 1	Regional Injuries 1			
31.	Overview of viral infections II	Neoplasia 2	Penicillin and Cephalosporins– 2	Regional Injuries 2	Newborn care	Cough, Haemoptysis, Cyanosis, Clubbing	Infections 2
32.	Overview of viral infections III	Neoplasia3	Sulfonamides	Thermal Injuries 1			
33.	Overview of parasitic infections I	Neoplasia 4	Aminoglycosides	Thermal Injuries 2			
34.	Overview of parasitic infections II	Neoplasia 5	Macrolides	Thermal Injuries 3	Child health	Herpes zoster, EBV, CMV, HHV-8	Burns 1
35.	Overview of fungal infections I	Neoplasia 6	Tetracyclines	Transportation Injuries			
36.	Overview of fungal infections II	Nutritional diseases 1(PEM and obesity) Vitamin deficiency to be taught as SDL	Fluoroquinolones	Explosion Injuries and Fall from Height			Burns 2

## 2. Hematological system, Respiratory system & Autonomic nervous system

1	Haem – 1 – Sepsis and CRBSI	Hematology – Introduction, BM, cell counts etc	Drugs for treatment of anemia – 1	Medico-legal Aspects of Injuries	Indicators of MCH care	Pallor, Bleeding, Thrombosis, Splenomegaly, Lymphadenopathy	
2	Haem – 2- Enteric fever	RBC disorders 1	Drugs for treatment of anemia – 2	Decompression, Radiation and Altitude Sickness			
3	Haem – 7- Trypanosomiasis	RBC disorders 2	Drugs for trypanosomiasis	Starvation Deaths			Burns 3
<b>End of III Semester- One week of exam (Theory and Practicals)</b>							
4.	Haem – 6 – Leishmaniasis	RBC disorders 3	Drugs for Leishmaniasis	Asphyxia	School Health Program	HIV – Definitions, transmission, epidemiology, clinical manifestations, diagnosis	Shock 1
5.	Haem – 8 – Malaria- I	Haemo parasites (plus integrated during Micro classes) Malaria, Kala Azar, Filariasis)	Drugs for malaria 1	Asphyxia 2		HIV and opportunistic infections	
6.	Haem – 9 – Malaria - II	RBC disorders 4	Drugs for malaria 2				
7.	Haem – 3 – Brucellosis	RBC disorders 5	Drugs for malaria 3	Asphyxia 3	Infectious disease epidemiology -1	Management of HIV/ AIDS	Shock 2
8.	Haem – 4 – Leptospirosis and Borreliosis Listeriosis – SDL	RBC disorders 6	Fibrinolytic & Antifibrinolytics	Asphyxia 4		Bacteremia, sepsis, SIRS, MODS, Septic shock	
9.	Haem – 5 – Rickettsia infections	WBC 1	Anticoagulants 1				

10.	Haem – 10 - Schistosomiasis	WBC 2	Anticoagulants – 2	Asphyxia 5	Infectious disease epidemiology -2	Malaria	Shock 3
11.	Haem – 11 – Lymphatic filariasis	WBC 3	Anticoagulants – 3	Asphyxia 6		Brucellosis, Plague, Anthrax	
12.	Haem – 12 – Dengue and chikungunya	WBC 4	Antiplatelet drugs				
13.	Misc – 12 Viral hemorrhagic fever	WBC 5	Drugs used in dyslipidemia	Asphyxia 7	Malaria	Clostridial infections - Tetanus, gas gangrene, botulinum, CDAD	Approach to Chest trauma 1
14.	Haem – 13 – Systemic mycosis	Platelets and coagulation 1	Introduction to Autonomic Nervous System	Asphyxia 8		Filariasis; Leishmaniasis	
15.	Haem – 14 – Candidiasis	Platelets and coagulation 2	Directly Acting Cholinergic Drugs				
16.	RS – I – Defence mechanisms of respiratory tract and normal flora	Platelets and coagulation 3	Cholinesterase Inhibitors	Virginity, Pregnancy and Delivery	Dengue, Filaria and JE	Hemorrhagic fevers (Dengue); Leptospirosis; Rickettsia infection	Approach to Chest trauma 2
17.	RS – 2 – URI - 1 – Streptococcal infections SDL- enterococci	Platelets and coagulation 4	Anticholinergic – 1	Abortion		Common fungal infections (Candida, Aspergillus, Mucor, Cryptococcus)	
18.	RS – 3 – URI - 2 – Diphtheria	Blood banking 3 classes	Anticholinergics – 2				
19.	RS – 4 – URI – 3 – Haemophilus and Bordetella	Blood banking 2	Adrenergic Drugs – 1	Infanticide and Child Abuse	Introduction to demography and vital statistics	Pneumonia	Blood transfusion
20.	RS – 5 – URI - 4 – Sinusitis and otitis including zygomycosis	Blood banking 3	Adrenergic Drugs – 2	Impotence and Sterility		Influenza	

21.	RS – 6 – URI – 5- Viral upper respiratory infections- Rhinovirus, adenovirus and infectious mononucleosis	Lymph nodes and spleen (3 classes) 1	Antiadrenergics – 1				
22.	RS – 7 –LRI -4 –ILI and orthomyxovirus	LN 2	Antiadrenergics– 2	Sexual Jurisprudence 1	Fertility and Mortality indicators	Anorexia, Nausea, Vomiting, Abdominal Pain, dysphagia	Lymphoed swelling
23.	RS – 8Paramyxoviruses	LN/spleen 3	Treatment of Alzheimer’s Disease & Glaucoma	Sexual Jurisprudence 2		Diarrhoea, Constipation, G.I.Bleeding	
24.	RS – 9Paragonimiasis	Respiratory 6 (Including Pneumoconiosis which was being covered in Gen Path	Antitussives, mucolytics & expectorants				
25.	RS –10 – Pneumocystis jirovecii, Aspergillosis and other fungal pneumonias	Respiratory 2	Drugs for treatment of bronchial asthma –1	Sexual Jurisprudence 3	Acute Respiratory Infection	Acute infectious diarrhoeal diseases - overview;	Approach to arterial disease
26.	RS- 11Pneumococcal pneumonia	Respiratory 3	Drugs for treatment of bronchial asthma – 2	Sexual Jurisprudence 4		Food poisoning and toxin mediated diarrhoea (Cholera); Traveller's diarrhoea	
27.	RS-12 typical pneumonia Mycoplasma Chlamydia and Legionella	Respiratory 4	Drugs for treatment of tuberculosis -1				Approach to venous diseases
28.	RS-13 Tuberculosis NTM – SDL	Respiratory 5	Drugs for treatment of tuberculosis -2	Forensic science	Tuberculosis		
29.	RS – 14- Ventilator Associated Pneumonia	Respiratory 6	Skeletal Muscle Relaxants	Analytical Forensics			



30.	Misc-4Bacteriology of air, water and milk	Environment al disease 2 classes	Anticancer agents-1	Analytical Forensics 2			Approach to Lymphatic diseases
31.	Bioterrorism SDL- Plague, Tularemia	Env disease 2	Anticancer agents-2		Introduction to biostatistics Types of data	Enteric fever and Salmonella infections	

### 3. Gastrointestinal system (including Liver, Pancreas) & Cardiovascular system

1.	CVS – Infective endocarditis and Rheumatic heart disease	CVS 5 classes CVS 1	Antihypertensive – 1	Forensic Psychiatry 1		Shigellosis; EIEC; Amoebiasis; Giardiasis	
2.	GIT –1 - Normal commensals– E.coli, Klebsiella, Proteus	CVS 2	Antihypertensive – 2	Forensic Psychiatry 2			Approach to cardiac trauma
3.	GIT–2– Shigellosis and non typhoidal salmonellosis	CVS 3	Antihypertensive – 3		Measures of central tendency and dispersion, concept of statistical significance	Worm infestations (Hookworm , roundworm, tapeworm, pinworm, Strongyloidiasis)	
4.	GIT –3– Cholera	<b>CVS 4</b>	Antihypertensive – 4	Forensic Psychiatry 3			
5.	GIT –4– Helicobacter and Campylobacter, Yersinia	CVS 5	Antihypertensive – 5			Jaundice, Hepatomegaly	Abdomen Pain Abdomen mass Weight changes
6.	GIT –5 – Antibiotic associated diarrhoea– C.difficile and non sporing anaerobes	GIT 1	Drugs for angina - 1		Acute Diarrheal Diseases	Hydatid disease; Toxoplasmosis	
7.	GIT – 6 – Amoebiasis	GIT 2	Drugs for angina –2				

8.	GIT – 7Giardiasis and Balantidiasis	GIT 3	Drugs for treatment of heart failure – 1				Upper GI complaints
9.	GIT –8– Intestinal coccidian parasites and microsporidia	GIT 4	Drugs for treatment of heart failure – 2		General Epidemiology – Basic measurement of health	Urinary tract symptoms (Oliguria, anuria, dysuria, pyuria, hematuria, polyuria, nocturia, chyluria and enuresis)	
10.	GIT – 9 – Intestinal helminths- I cestodes- D.latum, Taenia, Hymenolepis	GIT 5	Antiarrhythmic drugs – 1				
11.	GIT- 10 Intestinal helminths- II Intestinal nematodes- Ascaris, hookworm, Trichinella	GIT 6	Antiarrhythmic drugs – 2			Ascites, Edema, Anasarca	Upper GI complaints 2
12.	GIT-11 Intestinal nematodes- Trichuris, Enterobius and StrongyloidesSDL- Larvamigrans	Liver 1	Diuretics & Antidiuretics		Study designs		
13	GIT-12Viral gastroenteritis	Liver 2	Drugs used for peptic ulcer – 1				
14	GIT-13Food poisoning	Liver 3	Drugs used for peptic ulcer – 2		Descriptive study		Upper GI complaints 3
15.	Liver- 1Hepatitis viruses I	Liver 4	Antiemetics				
16.	Liver- 2Hepatitis viruses IISDL- Yellow fever	Liver 5	Drugs for treatment of diarrhea				

**End of IV semester**

17.	Liver 3- Echinococcus	<b>Liver6</b>	Drugs for treatment of constipation	General Toxicology 1	Case control study	Urinary tract infections – etio pathogenesi s, types, clinical features, diagnosis and treatment	Lower GI complain ts 1
18.	Liver 4Clonorchis and other parasitic infections of liver	<b>Gall bladder</b>	Drugs for treatment of inflammatory bowel disease	General Toxicology 2			Lower GI complain ts 2
19.	Misc - 11Organisms with Oncogenicpot ential	<b>Exocrine Pancreas</b>	Drugs for treatment of amoebiasis, giardiasis, trichomoniasis	General Toxicology 3			

#### 4. Genitourinary system and Central nervous system

1.	GUT-1 Urinary tract infections	Renal and urinary system 8 classes Urinalysis 1	Estrogens & antiestrogens	Corrosive Poisons 1	Cohort study	Introduction; Presenting problems in renal diseases (Edema, hypertension, renal failure, hematuria, proteinuria )	Hepatobiliary and Portal 1
2.	GUT-2 Bacterial STD-I Gonorrhoea and non gonococcal urethritis	Renal 2	Oral & injectable contraceptives	Corrosive Poisons 2			Hepatobiliary and Portal 2
3.	GUT-3 Bacterial STD- II Syphilis	Renal 3	Progestins & antiprogestins	Corrosive Poisons 3			
4.	GUT-4 Bacterial STD- III LGV, Granuloma inguinale, soft chancre, Bacterial vaginosis	Renal 4	Oxytocics & uterine relaxants	Inorganic Metallic Irritants 1	Intervention study	Glomerular disorders – overview; Nephritic syndrome – etiology, types, pathology, clinical features, diagnosis, treatment and complications	Upper urinary tract Symptomatology 1
5.	GUT-5 Herpes viruses	Renal 5	Androgens & antiandrogens	Inorganic Metallic Irritants 2			Upper urinary tract Symptomatology 2
6	GUT-6 IV-1	Renal 6	Introduction to CNS drugs	Inorganic Metallic Irritants 3			

7	GUT-7 HIV-2 SDL- Tricho monasv aginalis	Urinary Bladder 1	Opioids – 1	Inorganic Metallic Irritants 4	HIV/AIDS	Nephrotic syndrome – causes, clinical features, diagnosis, complications and treatment.	Lower urinary tract symptom atology 1
8	Congenital infections- 1Cytome galovirus and rubella	<b>Male genital system – 3 classes</b>	Opioids – 2	Inorganic Metallic Irritants 5			Lower urinary tract symptom atology 2
9	CNS – 1- Mening itis – Meningococci and other bacterial agents of acute pyogenic meningitis, brain abscess	MGT 2	Opioids – 3	Inorganic Metallic Irritants 6			
10	CNS -2 Aseptic meningitis- viral and spirochaetal	MGT 3	Sedative hypnotics – 1	Organic Irritants - Vegetable 1	Bias & Confoundin g	Tubular disorders, Ischemic Kidney Disease, Drugs and Toxin induced nephropathy.	Penile lesions 1
11	CNS 3 -Tetanus	Female reproductive tract (5 classes)FGT 1	Sedative hypnotics – 2	Organic Irritants - Vegetable 2			Penile lesions 1
12	CNS-4Parasites affecting brain- 1PAM,neurocys ticercosis	FGT 2	Alcohol	Organic Irritants - Vegetable 3			
13	CNS-5Parasites affecting brain- IIToxoplasmos is	FGT 3	Drugs for treatment of epilepsy – 1	Somniferous Poisons (Narcotic Poisons) 1	Poliomyeliti s	Headache (migraine), vertigo and dizziness	Scrotum complain ts
14	CNS-6 VIRAL INFECTIONS-I Poliomyelitis	FGT 4	Drugs for treatment of epilepsy – 2	Somniferous Poisons (Narcotic Poisons) 2			CNS Trauma 1

15	CNS-7 VIRAL INFECTI ONS-II Rabies	FGT 5	Drugs for treatment of epilepsy- 3	Inebriants- Alcohol 1			
16	CNS-8 VIRAL INFECTI ONS- III Arboviral encephalitis Tutorials	CNS (3 classes) CNS 1 LP and infections	Drugs for treatment of parkinsonism – 1	Inebriants - Alcohol 2	Rabies	Seizures, Syncope	CNS Trauma 2
17	CNS-9 VIRAL INFECTI ONS- IV Slow viral infections	CNS 2- tumors	Drugs for treatment of parkinsonism – 2	Inebriants— Alcohol 3			Dermat ologic system 1
18	CNS – 10 Cryptococcal meningitis and other fungi affecting CNS	CNS 3 – degenerative disorders	CNS stimulants & No tropic agents	Inebriants - Alcohol 4			
19	SSTI-1 Staphylococcal infections	Breast (2 classes)Non- neoplastic, benign 1	Drugs of abuse	Barbiturates	Association and Causation of Disease	Motor and sensory disturbances	Dermatol ogic system 2
20	SSTI-2Cellulitis and necrotizing fasciitis	Breast carcinoma 2	Antiviral agents (except antiretrovirals)	Deliriant 1			Approach to breast complains 1
21	SSTI-3 Myositis and gas gangrene	Disorders of skin 1	Antiretroviral drugs – 1	Deliriant 2			
22	SSTI-4 Anthrax	Disorders of skin 2 ( Including SCC, BCC, melanoma, cutaneous fungal diseases like Mycetoma, bullous lesions etc)	Antiretrovir al drugs – 2	Spinal and Peripheral Nerve Poisons	Screening of Disease and types of screening	Disturbances of consciousness, (brain death and organ donation)	Approach to breast complains 2
23	SSTI-5Leprosy	Diseases of infancy and childhood – non neoplastic	Drugs used in dermatologic disorders	Cardiac Poisons			Thyroid dysfunction 1
24	SSTI-6 Meliodosis	Tumors of childhood	Drugs affecting calcium metabolism	Cardiac Poisons 2			

25	SSTI-7 Surgical site infections	Endocrine 6 classes Pituitary 1	Drugs affecting anterior pituitary hormones	Cardiac Poisons 3	Introduction to NCD and Mental Health	Rabies and other encephalitides (JE, HSV)	Thyroid dysfunction 2
26	SSTI-8 Poxviruses	Thyroid 1	Thyroid & anti thyroid drugs – 1	Hydrocyanic Acid			
27	SSTI-9 Varicella zoster, HHV-8, Papovaviruses	Thyroid 2	Thyroid & antithyroid drugs – 2	Asphyxiants			Approach to Goitre 1
28	SSTI-10 Tissue nematodes- Onchocerca, Loa loa and Dracunculus	Diabetes 4 (Integrated with endocrine – and not to be covered in general path)	Drugs for treatment of diabetes mellitus – 1	War Gases and Biological Weapons	Risk factors for NCD	Bacterial meningitis	Approach to Goitre 2
29	SSTI-11 Superficial fungal infections	Parathyroid 5	Drugs for treatment of diabetes mellitus – 2	Agricultural Poisons			
30	SSTI-12 Subcutaneous fungal infections	Adrenal 6	Drugs for treatment of diabetes mellitus – 3	Agricultural Poisons 2			Hypocalcemia and Hypercalcemia
31	Misc-1 Ocular infections SDL- Trachoma	Skeletal system (3 classes) Bone 1	Corticosteroids – 1	Alphos (Aluminum Phosphide)	Diabetes Mellitus	Arthralgias, arthritis and myalgias; Chikungunya	Adrenal mass 1
32	Misc -2 Osteomyelitis and septic arthritis	Bone 2	Corticosteroids – 2	Medicinal Poisons			
33	Misc-3 Biomedical waste management	Joints 3	General principles of anaesthesia & preanaesthetic medication	Drug Dependence			Adrenal mass 2
34	Misc-4 Hospital infections 1	Rational use of Investigations in Pathology	Inhaled anaesthetics	Drug Dependence 2	Cardio-vascular diseases: HTN, IHD, Stroke	Nosocomial infections	

35	Misc-5 Hospital infections 2	Revision Classes on Systemic and applied pathology (Anemia, Bleeding, Nephrotic syndrome, Jaundice, PUO etc.)1-10	Intravenous anesthetics	Drug Dependence 3		Stings and bites (Snake bite, scorpion sting and others)	Musculo skeletal system 1
36	Misc-6 Antimicrobial stewardship and rational use of antibiotics 2	Revision Classes on Systemic and applied pathology	Local anesthetics – 1	Drug Dependence 4			Musculo skeletal system 2
37	Misc-7 Rational use of Microbiological investigations	Applied pathology- Processing of samples - histopatholog y	Local anesthetics – 2	Kerosene Oil Poisoning	Cancers	Poisoning - general principles; OP poisoning, Carbamate poisoning, Organochlorin e poisoning	
38	Misc-8Infections in the immune compromised patient s	Applied pathology- Processing of samples - cytology	Antipsychotics – 1	Food Poisoning		Plant poisons (Yellow oleander, abrus, cleistanthus collinus and datura)	
39	Misc -9Rodent borne viral infections	Applied pathology- Universal work precautions	Antipsychotics – 2	Anesthetic Deaths			
40	Misc- 10 Emerging and Re emerging infections	Applied pathology- Clinico pathological case discussions	Antidepressants – 1	Postmortem Artifacts	Blindness	Yellow phosphorus, Paraquat, Corrosives, Prescription drug poisoning	
41	Misc- 11 Microbiological investigations of a febrile patient	Applied pathology- Evaluation of anemias	Antidepressants – 2	Torture and Custodial Deaths		Heat related disorders; Radiation related disorders	



42	Revision class	Applied pathology- Evaluation of bleeding disorders	Drugs for treatment of mania & bipolar disorders	Medico-legal Aspects of HIV			
43	Revision class	Applied pathology- jaundice	Drugs for treatment of leprosy	Mass Disaster and Investigation	Road traffic accidents	Drowning and electrical injuries	
44	Revision class	Autopsy 1	Compliance, Placebo & FDC	Legal and Ethical issues in Biomedical Research			
45	Revision class	Autopsy 2	Therapeutic drug monitoring & Rational Use of Medicines	Legal and Ethical issues in Biomedical Research 2			

**End of V semester –send up &exam**

## 5 SYSTEMS - BASED DEPARTMENTWISE CONTENT

### MICROBIOLOGY

#### 1. GENERAL MICROBIOLOGY AND IMMUNOLOGY

Theory	<ul style="list-style-type: none"> <li>• Introduction &amp; History of Microbiology, Classification, Nomenclature of bacteria</li> <li>• Microscopy</li> <li>• Structure of Bacteria(2)</li> <li>• Growth, nutrition and bacterial metabolism</li> <li>• Cultivation and Identification of bacteria</li> <li>• Sterilization and Disinfection(2)</li> <li>• Bacterial genetics(2)</li> <li>• Molecular Diagnosis in Infectious Diseases</li> <li>• Pathogenesis of Infectious Diseases(2)</li> <li>• Introduction to immunology and anatomy of the immune apparatus</li> <li>• Innate Immunity</li> <li>• Antigens</li> <li>• Antibodies</li> <li>• Humoral immune response</li> <li>• Cellular immune response</li> <li>• Antigen antibody reaction(2)</li> <li>• Immunoprophylaxis</li> <li>• Overview of bacterial infections(3)</li> <li>• Antimicrobial agents and mechanisms of antimicrobial resistance</li> <li>• Antimicrobial susceptibility testing and interpretation</li> <li>• Overview of viral infections(3)</li> <li>• Overview of parasitic infections(2)</li> <li>• Overview of fungal infections(2)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Sterilization controls and disinfectant testing</li> <li>• Bacteriophages and bacteriocins</li> <li>• Complement</li> </ul>
Practical	<p><b>Demo :</b></p> <ul style="list-style-type: none"> <li>• Microscopy</li> <li>• Morphology of bacteria</li> <li>• Culture media and bacterial identification based on biochemical reactions</li> <li>• Visit to CSSD, sterilization and disinfection</li> <li>• Anatomy of immune apparatus</li> <li>• Antigen and antibody reactions</li> <li>• Molecular diagnosis of infectious diseases</li> <li>• Collection and transport of specimens</li> <li>• Antimicrobial susceptibility testing</li> <li>• Direct examination of samples for bacteria, viruses, parasites and fungi</li> <li>• Cultivation of viruses and viral inclusions</li> </ul> <p><b><u>Practical:</u></b></p> <ul style="list-style-type: none"> <li>• Simple staining</li> <li>• Gram staining</li> <li>• Motility of bacteria by hanging drop</li> <li>• Gram stain of specimens (CSF, pus, sputum) and interpretation</li> <li>• Interpretation of AST-problems</li> <li>• Stool examination for parasites</li> </ul>

2	HEMATOLOGY, RESPIRATORY SYSTEM AND AUTONOMIC NERVOUS SYSTEM
Theory	<ul style="list-style-type: none"> <li>• Sepsis and CRBSI</li> <li>• Enteric fever</li> <li>• Trypanosomiasis</li> <li>• Leishmaniasis</li> <li>• Malaria(2)</li> <li>• Brucellosis</li> <li>• Leptospirosis and Borreliosis</li> <li>• Rickettsial infections</li> <li>• Schistosomiasis</li> <li>• Lymphatic filariasis</li> <li>• Dengue and chikungunya</li> <li>• Viral haemorrhagic fevers</li> <li>• Systemic mycosis</li> <li>• Candidiasis</li> <li>• Defence mechanisms of respiratory tract and normal flora</li> <li>• URI -1 – Streptococcal infections</li> <li>• URI -2 –Diphtheria</li> <li>• URI - 3 – Haemophilus and Bordetella</li> <li>• URI - 4 – Sinusitis and otitis (including Zygomycosis)</li> <li>• URI - 5- Viral upper respiratory infections- Rhinovirus, adenovirus and infectious mononucleosis</li> <li>• ILI and orthomyxovirus</li> <li>• Paramyxovirus</li> <li>• Paragonimiasis</li> <li>• Pneumocystis jirovecii, Aspergillosis and other fungal pneumonias</li> <li>• Pneumococcal pneumonia</li> <li>• A typical pneumonia Mycoplasma, Chlamydia and Legionella</li> <li>• Tuberculosis</li> <li>• Ventilator Associated Pneumonia</li> <li>• Bacteriology of air, water and milk</li> <li>• Bioterrorism</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Enterococci</li> <li>• NTM</li> <li>• SDL-Plague, Tularemia</li> </ul>
Practical	<p><b>Demo:</b></p> <ul style="list-style-type: none"> <li>• Salmonella</li> <li>• Brucella</li> <li>• Leishmania</li> <li>• Plasmodium</li> <li>• Streptococcus</li> <li>• Corynebacterium diphtheriae</li> <li>• Haemophilus</li> <li>• Tuberculosis and NTM</li> <li>• Aspergillus – LPCB mount</li> <li>• Pneumocystis jirovecii</li> <li>• Diagnosis of VAP- Non fermenters</li> </ul> <p><b>Practical</b></p> <ul style="list-style-type: none"> <li>• Gram stain</li> <li>• Albert stain</li> <li>• Kinyoun stain</li> <li>• Peripheral blood smear- Leishman/Giemsa stain</li> <li>• LPCB wet mount for fungi</li> </ul>

3	<b>GASTROINTESTINAL SYSTEM (INCLUDING LIVER AND PANCREAS) AND CARDIOVASCULAR SYSTEM</b>
Theory	<ul style="list-style-type: none"> <li>• Infective endocarditis and Rheumatic heart disease</li> <li>• Normal commensals–Escherichia.coli,Klebsiella, Proteus</li> <li>• Shigellosis andnontyphoidalsalmonellosis</li> <li>• Cholera</li> <li>• Helicobacter andCampylobacter,Yersinia</li> <li>• Antibiotic associateddiarrhea-C.difficile and non sporing anaerobes</li> <li>• Amoebiasis</li> <li>• Giardiasis andBalantidiasis Intestinal coccidian parasites andmicrosporidia</li> <li>• Intestinal helminths- Icestodes-D.latum, Taenia, Hymenolepis</li> <li>• Intestinal helminths- IIIntestinal nematodes- Ascaris, hookworm,Trichinella</li> <li>• Intestinal nematodes-Trichuris,Enterobius andStrongyloides</li> <li>• Viralgastroenteritis</li> <li>• Foodpoisoning</li> <li>• Hepatitis virusesI</li> <li>• Hepatitis virusesII</li> <li>• Echinococcus</li> <li>• Clonorchis and other parasitic infections ofliver</li> <li>• Organisms with Oncogenic potential</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Yellow fever</li> <li>• Larvamigrans</li> <li>• IntestinalTrematodes</li> </ul>
Practical	<p><b>Demo:</b></p> <ul style="list-style-type: none"> <li>• Escherichia.coli, Klebsiella,Proteus</li> <li>• Shigella</li> <li>• Vibrio</li> <li>• Entamaeba,Giardia</li> <li>• Cestodes</li> <li>• Trematodes</li> <li>• Intestinal coccidianparasites</li> <li>• Intestinalnematodes</li> <li>• Non sporinganaerobes</li> </ul> <p><b>Practical:</b></p> <ul style="list-style-type: none"> <li>• Stoolexamination</li> <li>• Albert stain</li> <li>• Kinyounstaining</li> <li>• Gram staining</li> </ul>

<b>4</b>	<b>GENITOURINARY TRACT, CENTRAL NERVOUS SYSTEM</b>
Theory	<ul style="list-style-type: none"> <li>• Urinary tract infections and CAUTI</li> <li>• Bacterial STD-I Gonorrhoea and nongonococcal urethritis</li> <li>• Bacterial STD-II Syphilis</li> <li>• Bacterial STD-III -LGV, Granuloma inguinale, Soft chancre, Bacterial vaginosis</li> <li>• Herpes viruses</li> <li>• HIV-1</li> <li>• HIV-2</li> <li>• Congenital infections-1 Cytomegalovirus and rubella</li> <li>• Meningitis – Meningococci and other bacterial agents of acute pyogenic meningitis, brain abscess</li> <li>• Aseptic meningitis- viral and spirochaetal</li> <li>• Tetanus</li> <li>• Parasites affecting brain- 1 PAM, neurocysticercosis</li> <li>• Parasites affecting brain- II Toxoplasmosis</li> <li>• Viral infections-I Poliomyelitis</li> <li>• Viral infections-II Rabies</li> <li>• Viral infections-III Arboviral encephalitis</li> <li>• Viral infections-IV Slow viral infections Cryptococcal meningitis and other fungi affecting CNS</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Trichomonas vaginalis</li> </ul>
Practical	<p><b>Demo:</b></p> <ul style="list-style-type: none"> <li>• Urinary Tract Infections</li> <li>• Toxoplasma</li> <li>• Rabies</li> <li>• Neisseria meningitidis and N. gonorrhoeae</li> </ul> <p><b>Practicals:</b></p> <ul style="list-style-type: none"> <li>• Gram stain</li> </ul>

5	SKIN AND SOFT TISSUE INFECTIONS AND MISCELLANEOUS
Theory	<ul style="list-style-type: none"> <li>• Staphylococcal infections</li> <li>• Cellulitis and necrotizing fasciitis</li> <li>• Myositis and gas gangrene</li> <li>• Anthrax</li> <li>• Leprosy</li> <li>• Melioidosis</li> <li>• Surgical site infections</li> <li>• Poxviruses</li> <li>• Varicella zoster, HHV-8, Papova viruses</li> <li>• Tissue nematodes- Onchocerca ,Loa loa and Dracunculus</li> <li>• Superficial fungal infections</li> <li>• Subcutaneous fungal infections</li> <li>• Ocular infections</li> <li>• Osteomyelitis and septic arthritis</li> <li>• Biomedical waste management</li> <li>• Hospital infections(2)</li> <li>• Antimicrobial stewardship and rational use of antibiotics</li> <li>• Rational use of Microbiological investigations</li> <li>• Rodent borne viral infections</li> <li>• Approach to a patient with fever</li> <li>• Infections in the immune-compromised patients</li> <li>• Emerging and reemerging infections</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Trachoma</li> </ul>
Practical	<p><b><u>Demo:</u></b></p> <ul style="list-style-type: none"> <li>• Staphylococcus</li> <li>• Bacillus</li> <li>• Clostridium perfringens</li> <li>• Superficial and subcutaneous fungal infections</li> </ul> <p><b><u>Practical:</u></b></p> <ul style="list-style-type: none"> <li>• Gram stain</li> <li>• Albert stain</li> <li>• Kinyoun stain</li> <li>• Problem based exercises</li> </ul>

## PATHOLOGY

1	<b>CELL INJURY, INFLAMMATION AND REPAIR, HEMODYNAMICS, DISEASES OF IMMUNE SYSTEM, GENETIC AND METABOLIC DISEASES, NEOPLASIA AND NUTRITIONAL DISEASES</b>
Theory	<p><b>Cell injury :</b></p> <ul style="list-style-type: none"> <li>• Cause and mechanism: Ischemic, Toxic, Free- radical induced, Apoptosis</li> <li>• Reversible cell injury: Types, morphology, hyaline and fatty change</li> <li>• Cellular adaptation - Atrophy, Hypertrophy, Hyperplasia, Metaplasia</li> <li>• Irreversible injury: Necrosis and gangrene</li> <li>• Calcification: Dystrophic and metastatic</li> <li>• Cellular accumulations: Protein, glycogen, pigment deposition such as melanin, bilirubin, hemosiderin and carbon</li> </ul> <p><b>Inflammation &amp; Repair:</b></p> <ul style="list-style-type: none"> <li>• Acute inflammation: Features, Causes, vascular, cellular events and morphological variants</li> <li>• Inflammatory cells and mediators</li> <li>• Chronic inflammation: Causes, types, non- specific and Granulomatous with examples</li> <li>• Wound healing and repair by primary and secondary union and factors modifying them.</li> </ul> <p><b>Hemodynamic disorders:</b></p> <ul style="list-style-type: none"> <li>• Oedema: Pathogenesis and types</li> <li>• Chronic venous congestion: Lung, Liver and Spleen</li> <li>• Thrombosis and Embolism: Formation, Types and Fate, Effect on tissues</li> <li>• Infarction: Types and Common sites</li> <li>• Shock: Pathogenesis, types and morphology</li> </ul> <p><b>Diseases of immune system:</b> Introduction ( Correlated with what has been taught in Microbiology)</p> <ul style="list-style-type: none"> <li>• Type I Hypersensitivity reaction</li> <li>• Type II &amp; III Hypersensitivity reaction</li> <li>• Type IV Hypersensitivity reaction – Transplant rejection</li> <li>• Auto immunity SLE</li> <li>• Amyloidosis</li> <li>• Immunodeficiency -AIDS</li> </ul> <p><b>Genetics &amp; Metabolic disorders:</b></p> <ul style="list-style-type: none"> <li>• Autosomal &amp; sex linked disorders</li> <li>• Cytogenetic disorders &amp; diagnosis of genetic disease</li> <li>• Lysosomal disorders, Marfan syndrome, Ehlers-Danlos, Cystic fibrosis</li> </ul> <p><b>Neoplasia :</b></p> <ul style="list-style-type: none"> <li>• Growth disturbance - Aplasia, Malformation</li> <li>• Dysplasia and Intraepithelial Neoplasia including carcinoma in situ, Premalignant conditions</li> <li>• Neoplasia: Causes, Classification, Histogenesis and molecular basis, Biological behaviour,</li> <li>• Benign versus Malignant, Nomenclature</li> <li>• Malignant Neoplasms: Grade and Stage, metastasis and invasion</li> <li>• Carcinogenesis: Environmental carcinogens, viral, chemical, occupational, hereditary</li> <li>• Laboratory Diagnosis of cancer, Tumor markers, Paraneoplastic syndromes</li> <li>• Gross and microscopic features, clinical correlation, mode of spread and prognosis of common</li> <li>• benign and malignant tumors</li> </ul> <p><b>Nutritional diseases :PEM and Obesity</b></p>

Theory SDL	<p><b>Cell injury</b></p> <ul style="list-style-type: none"> <li>• Role of <math>\text{Ca}^{2+}</math> in cell injury</li> <li>• Cellular aging</li> </ul> <p><b>Inflammation &amp; Repair</b></p> <ul style="list-style-type: none"> <li>• Role of arachidonic acid metabolites in inflammation</li> <li>• Morphological patterns of inflammation</li> <li>• Fracture healing</li> </ul> <p><b>Hemodynamic disorders</b></p> <ul style="list-style-type: none"> <li>• Starling law</li> <li>• Normal hemostasis</li> <li>• Thrombosis due to hypercoagulability</li> </ul> <p><b>Diseases of immune system:</b></p> <ul style="list-style-type: none"> <li>• B &amp; T Lymphocytes</li> <li>• <math>\text{I}^0</math> immunodeficiency disorders</li> <li>• Immunological tolerance</li> <li>• Natural history of HIV infection</li> <li>• HIV genome</li> </ul> <p><b>Genetic &amp; Metabolic disorders</b></p> <ul style="list-style-type: none"> <li>• Lyons hypothesis</li> <li>• Cytogenetic testing</li> </ul> <p><b>Neoplasia:</b></p> <ul style="list-style-type: none"> <li>• Tumor immunology</li> <li>• Is cancer hereditary?</li> <li>• Occupation &amp; cancer</li> <li>• Smoking and cancer</li> </ul> <p><b>Nutritional diseases</b></p> <ul style="list-style-type: none"> <li>• Scurvy</li> <li>• Rickets</li> <li>• Beriberi</li> <li>• Vitamin A deficiency</li> </ul>
Practical	<p><b>Cell injury:</b></p> <ul style="list-style-type: none"> <li>• <u>Gross:</u> Pregnant uterus, Cardiac hypertrophy, Brown atrophy heart, Hypoplastic kidney, Granular contracted kidney</li> <li>• BPH, Endometrial hyperplasia</li> <li>• Melanoma, Anthracosis</li> <li>• Fatty liver, Gangrene foot, intestine</li> <li>• Caseous necrosis – LN, Lung</li> <li>• Splenic infarct, Liver abscess</li> <li>• <u>Slides:</u> Testicular atrophy</li> <li>• BPH</li> <li>• Anthracosis, Melanoma, Dystrophic calcification</li> <li>• Fatty liver</li> <li>• Caseous necrosis – LN, Myocardial infarct Slides</li> </ul> <p><b>Inflammation &amp; Repair</b></p> <ul style="list-style-type: none"> <li>• <u>Gross:</u> Pyaemic abscess kidney</li> <li>• Lobar pneumonia</li> <li>• Acute appendicitis</li> <li>• C/C cholecystitis</li> <li>• C/C pyelonephritis</li> <li>• TB lung &amp; LN</li> <li>• Peptic ulcer &amp; Trophic ulcer leg</li> <li>• <u>Slides:</u> Lobar pneumonia</li> <li>• Acute appendicitis</li> </ul>



- C/C cholecystitis
- Plasma cells
- FB granuloma
- TB granuloma
- Ulcer with granulation tissue

#### **Hemodynamic disorders**

- Gross: CVC liver & spleen
- Infarction spleen, lung, heart
- Thrombus
- Slides: CVC liver & spleen
- Infarctionspleen
- Recent & Organizing thrombus

#### **Diseases of immune system:**

- Gross: TB lung
- Hashimotothyroiditis
- Amyloid kidney, spleen
- Slides: Eosinophilia
- Spherocytosis(AIHA)
- TB LN
- LE cell
- Hashimoto thyroiditis
- Medullary Ca thyroid

#### **Neoplasia:**

- Gross: Characteristics of benign & malignant tumors
- Benign –circumscription,cystic,polyp
- Malig –ulcerative,diffuse,proliferative
- Benign & malig ulcers
- Benign & malig breast tumors
- Invasion – Chorio Ca, Osteosarcoma, Breast Cancer, RCC renal vein invasion
- Metastasis – Gastric & Krukenberg
- Melanoma LN mets
- Vertebral Mets
- Pleural Mets, Liver & Lung mets
- Lipoma, Haemangioma,
- Leiomyoma, Teratoma
- SCCa cervix, penis, oesophagus
- Melanoma foot
- Adenoca stomach, endometrium, colon
- Slides: Anaplasia
- Metastasis –LN,liver
- Lipoma, Haemangioma, Leiomyoma, Neurilemmoma, Teratoma
- SCC,BCC
- Melanoma
- Adenoca

2	<b>HEMATOLOGY, RETICULOENDOTHELIAL SYSTEM, RESPIRATORY SYSTEM AND ENVIRONMENTAL DISEASES</b>
Theory	<p><b><u>Hematology:</u></b></p> <p><b>RBC disorders:</b></p> <ul style="list-style-type: none"> <li>• Constituents of blood and bone marrow, regulation of hematopoiesis</li> <li>• Anemia: Classification and clinical features, Laboratory approach</li> <li>• Nutritional anemia: Iron deficiency, Vitamin B12 and Folate deficiency</li> <li>• Hemolytic Anemia: Classification and Laboratory diagnosis.</li> <li>• Thalassemia, Hemoglobinopathy like Sick cell A.</li> <li>• Hereditary Spherocytosis, G6PD deficiency</li> <li>• Acquired hemolytic anemia: Autoimmune hemolytic and Microangiopathic hemolytic anemia, hemolytic disease of newborn</li> <li>• Aplastic Anemia, PNH, Pancytopenia, myelophthisic anemia</li> </ul> <p><b>WBC disorders:</b></p> <ul style="list-style-type: none"> <li>• Leukocytosis, leukemoid reaction</li> <li>• Leukemia: Acute and Chronic – classification and diagnosis</li> <li>• Other myeloproliferative neoplasm like CML</li> <li>• Myelodysplastic syndromes</li> <li>• Plasma cell disorders</li> </ul> <p><b>Disorders of platelets and coagulation :</b></p> <ul style="list-style-type: none"> <li>• Hemostatic disorders: Platelet deficiency, ITP</li> <li>• Coagulation disorders like Hemophilia, Von Willebrand Disease</li> <li>• DIC</li> </ul> <p><b>Blood bank and immune haematology:</b></p> <ul style="list-style-type: none"> <li>• ABO &amp; Rh system. Blood grouping, cross matching, Coombs, HDN</li> <li>• Blood transfusion –donor selection, blood storage, complications</li> <li>• Rational use of blood, component therapy</li> </ul> <p><b>Hemoparasites :</b></p> <ul style="list-style-type: none"> <li>• Malaria, Leishmaniasis, Filariasis</li> </ul> <p><b>Disorders of spleen and lymph node:</b></p> <ul style="list-style-type: none"> <li>• Hodgkin lymphoma, Non Hodgkin lymphoma</li> </ul> <p><b>Diseases of respiratory system:</b></p> <ul style="list-style-type: none"> <li>• Structure of bronchial tree and alveoli, normal and altered lung function, concept of obstructive and restrictive lung disease,</li> <li>• Pneumoconiosis</li> <li>• Inflammatory diseases of lung like Chronic Obstructive Pulmonary disease, Emphysema, Chronic Bronchitis, Bronchial Asthma, Bronchiectasis</li> <li>• Pneumonia</li> <li>• Lung Abscess</li> <li>• Pulmonary Tuberculosis</li> <li>• Lung tumors: etio pathogenesis and types</li> </ul> <p><b>Environmental disorders :</b></p> <ul style="list-style-type: none"> <li>• Hazards of smoking, alcohol &amp; Radiation</li> </ul>

Theory SDL	<p><b>WBC disorders :</b></p> <ul style="list-style-type: none"> <li>• Quantitative /Reactive disorders</li> </ul> <p><b>Disorders of platelets and coagulation</b></p> <ul style="list-style-type: none"> <li>• Normal hemostasis</li> <li>• Thrombophilia</li> </ul> <p><b>Disorders of spleen and lymph node :</b> Splenomegaly, hypersplenism ,reactive lymphadenopathy</p> <p><b>Diseases of respiratory system:</b></p> <ul style="list-style-type: none"> <li>• Diseases of pleura</li> <li>• Interstitial lung disease</li> </ul> <p><b>Environmental disorders:</b></p> <ul style="list-style-type: none"> <li>• Deleterious effects of tobacco</li> <li>• Factors affecting biological effects of radiation</li> <li>• Lead poisoning</li> <li>• Deleterious effects of alcohol</li> </ul>
Practical	<p><b>RBC disorders:</b></p> <ul style="list-style-type: none"> <li>• <u>Experiment:</u> Visit to lab</li> <li>• Anticoagulant tubes</li> <li>• Peripheral smear staining</li> <li>• Hb estimation</li> <li>• Red cell indices</li> <li>• ESR,PCV</li> <li>• Reticulocyte count</li> <li>• <u>Slides:</u> Iron deficiency anemia</li> <li>• Megaloblastic A –PS &amp;BM</li> <li>• Thalassemia</li> <li>• Sickle cell Anemia</li> <li>• Spherocytosis</li> <li>• Malarial parasites</li> </ul> <p><b>WBC disorders:</b></p> <ul style="list-style-type: none"> <li>• <u>Experiment:</u></li> <li>• DC,TC</li> <li>• Bone marrow asp needle</li> <li>• <u>Slides:</u> Neutrophilia, Eosinophilia,</li> <li>• Lymphocytosis</li> <li>• Acute leuk –ALL,AML</li> <li>• c/c leuk –CLL,CML</li> <li>• Multiple myeloma</li> </ul> <p><b>Disorders of platelets and coagulation:</b></p> <ul style="list-style-type: none"> <li>• BT demonstration</li> <li>• PT, APTT – demonstration in labs</li> </ul> <p><b>Blood bank and immunoematology:</b></p> <ul style="list-style-type: none"> <li>• Blood bags</li> <li>• Blood grouping</li> <li>• Visit to blood bank</li> </ul> <p><b>Disorders of spleen and lymph node:</b></p> <ul style="list-style-type: none"> <li>• <u>Gross:</u> TBLN</li> <li>• CVC spleen</li> <li>• Hodgkin lymphoma</li> <li>• <u>Slides:</u> TBLN</li> <li>• CVC spleen</li> <li>• Hodgkin lymphoma</li> <li>• Filarial lymph node</li> </ul>

**Diseases of respiratory system:**

- Gross: TB lung-apical, fibro cavitary, military
- Pneumonia-lobar, broncho
- Abscess
- Bronchiectasis
- Ca-I<sup>0</sup>,2<sup>0</sup>
- Slides: TB lung
- Bronchiectasis

**Environmental disorders**

- Gross and slide: Anthracosis and Cirrhosis

3	<b>CARDIOVASCULAR SYSTEM, GASTROINTESTINAL SYSTEM AND HEPATOBILIARY INCLUDING PANCREAS</b>
Theory	<p><b>Cardiovascular system:</b></p> <ul style="list-style-type: none"> <li>• Hypertension, Atherosclerosis, Aneurysms</li> <li>• Ischemic heart disease</li> <li>• RHD, Infective endocarditis</li> </ul> <p><b>Diseases of gastrointestinal tract :</b></p> <ul style="list-style-type: none"> <li>• Oral pathology: Leukoplakia, Premalignant conditions and Carcinoma</li> <li>• Salivary gland pathology: Common benign and malignant tumors,</li> <li>• Diseases of esophagus: Barrett Esophagus and Carcinoma</li> <li>• Gastritis – types, H. Pylori infection</li> <li>• Tumors of stomach: benign and malignant</li> <li>• Infectious diseases of intestine: Typhoid, Tuberculosis, Amebic colitis, Hydatid cyst,</li> <li>• Inflammatory bowel disease –Ulcerative</li> <li>• Crohn’s disease</li> <li>• Intestinal tumors: Polyps, Carcinoma, Lymphoma and Carcinoid, Appendicitis</li> </ul> <p><b>Diseases of liver and gall bladder:</b></p> <ul style="list-style-type: none"> <li>• Jaundice: types, etio pathogenesis, differential diagnosis</li> <li>• Hepatitis: Acute and Chronic, Pathology</li> <li>• Cirrhosis: Etiology, classification, Post necrotic, alcoholic, metabolic, Morphology, complications</li> <li>• Alcoholic liver disease</li> <li>• Tumors of liver: hepatocellular carcinoma, metastasis</li> <li>• Gall bladder diseases: Cholecystitis, cholelithiasis, carcinoma</li> </ul> <p><b>Diseases of pancreas:</b> Pancreatitis and tumors colitis,</p>
Theory SDL	<p><b>Cardiovascular system:</b></p> <ul style="list-style-type: none"> <li>• Congenital heart disease</li> <li>• Cardiomyopathy</li> <li>• Pericarditis, Myxoma</li> </ul> <p><b>Diseases of gastrointestinal tract:</b></p> <ul style="list-style-type: none"> <li>• Oral cavity tumors</li> <li>• Malabsorption</li> </ul> <p><b>Diseases of liver:</b></p> <ul style="list-style-type: none"> <li>• Congenital hyperbilirubinemia</li> <li>• Primary biliary cirrhosis, Primary sclerosing cholangitis</li> </ul>
Practical	<p><b>Cardiovascular system:</b></p> <ul style="list-style-type: none"> <li>• <u>Gross:</u> Atherosclerosis,</li> <li>• Aneurysms-ath, syphilitic</li> <li>• MI, RHD, Infective endocarditis</li> <li>• <u>Slides:</u> Atherosclerosis</li> <li>• MI</li> <li>• Aschoff nodule</li> </ul> <p><b>Diseases of gastrointestinal tract :</b></p> <ul style="list-style-type: none"> <li>• <u>Gross:</u> Pleomorphic adenoma</li> <li>• Ca oesophagus</li> <li>• Gastric ulcer</li> <li>• Ca stomach-ulceroprolif, linitis</li> <li>• TB, Typhoid, Amoebiasis, Hydatid</li> <li>• Ca colon, multiple polyposis</li> <li>• <u>Slides:</u> Pleomorphic adenoma</li> <li>• Gastric ulcer</li> <li>• Ca stomach</li> </ul>

- TB intestine
- Adeno Ca colon

**Diseases of liver:**

- Gross: Fatty liver, CVC liver, Abscess liver,
- Cirrhosis-micro ,macro with Ca
- Ca 1<sup>0</sup>,2<sup>0</sup>
- Liver biopsy needle
- Slides: Fatty liver, CVC liver
- Cirrhosis

**Diseases of gall bladder:**

- Gross: Chronic cholecystitis with gallstones
- Slide: Chronic cholecystitis

4	GENITOURINARY AND CNS
Theory	<p><b>Diseases of urinary tract :</b></p> <ul style="list-style-type: none"> <li>• Renal function tests</li> <li>• Urinalysis</li> <li>• Acute and Chronic renal failure, End-stage renal disease</li> <li>• Glomerulonephritis: Post streptococcal, Crescentic GN</li> <li>• Secondary renal diseases</li> <li>• Nephrotic Syndrome</li> <li>• Acute tubular necrosis</li> <li>• Urinary tract infection and Pyelonephritis</li> <li>• Nephrolithiasis</li> <li>• Renal tumors : Renal cell carcinoma, Wilms Tumor</li> <li>• Urinary bladder: cystitis, urothelial carcinoma</li> </ul> <p><b>Diseases of the male genital tract:</b></p> <ul style="list-style-type: none"> <li>• Disease of penis- premalignant and carcinoma, Syphilis</li> <li>• Nodular hyperplasia of prostate and carcinoma prostate</li> <li>• Tumors of testis</li> </ul> <p><b>Diseases of female genital tract:</b></p> <ul style="list-style-type: none"> <li>• Diseases of cervix: Cervical carcinoma, PAP stain, Screening and diagnosis</li> <li>• Endometrial hyperplasia and carcinoma, Smooth muscle Tumors, Endometriosis</li> <li>• Trophoblastic diseases: Hydatidi form mole and Choriocarcinoma</li> <li>• Ovarian tumors</li> </ul> <p><b>Diseases of CNS:</b></p> <ul style="list-style-type: none"> <li>• CSF and its disturbance</li> <li>• Inflammatory disorders: Meningitis and Brain abscess</li> <li>• CNS tumors: Astrocytoma and Meningioma: classification</li> <li>• Degenerative disorder</li> </ul>
Theory SDL	<p><b>Diseases of urinary tract:</b></p> <ul style="list-style-type: none"> <li>• Immunofluorescence of renal diseases</li> <li>• Polycystic renal disease</li> <li>• Bladder cancer</li> </ul> <p><b>Diseases of the male genital tract:</b></p> <ul style="list-style-type: none"> <li>• Male infertility and Semen analysis</li> </ul> <p><b>Diseases of female genital tract:</b></p> <ul style="list-style-type: none"> <li>• Hormonal changes in endometrium</li> </ul> <p><b>Diseases of CNS:</b></p> <ul style="list-style-type: none"> <li>• PRION disease, Alzheimers</li> <li>• Subdural and intracranial hemorrhage</li> </ul>
Practical	<p><b>Diseases of urinary tract:</b></p> <ul style="list-style-type: none"> <li>• <u>Gross/ Experiment:</u> Urine Analysis</li> <li>• Polycystic kidney–adult, infantile</li> <li>• Chronic pyelonephritis</li> <li>• Hydronephrosis with urolithiasis</li> <li>• Granular contracted kidney</li> <li>• RCC, Wilms tumor, Ca bladder</li> <li>• <u>Slides:</u>RCC</li> <li>• Chronic pyelonephritis</li> <li>• Wilms tumor</li> </ul> <p><b>Diseases of the male genital tract:</b></p> <ul style="list-style-type: none"> <li>• <u>Gross:</u> BPH Ca penis</li> <li>• Seminoma</li> <li>• Non seminomatoustrs</li> <li>• <u>Slides:</u> BPH and Seminoma</li> </ul>

**Diseases of female genital tract:**

- Gross: Ayre spatula ,Ca cervix
- Leiomyoma, Endometrial Ca
- Serous /Mucinous cyst/Ca
- Dermoid cyst
- Krukenberg
- Dysgerminoma
- H mole, ChorioCa
- Slides: Leiomyoma
- Endometrial hyperplasia
- Ovteratoma
- Hmole

**Diseases of CNS:**

- Gross:
- Meningioma
- LP needle



<b>5</b>	<b>BREAST, DISEASES OF SKIN, DISEASES OF INFANCY AND CHILDHOOD, ENDOCRINES, DISEASES OF BONE AND JOINT AND MISCELLANEOUS</b>
Theory	<p><b>Diseases of breast:</b> Fibrocystic d/s, Fibroadenoma, Phyllodes Carcinoma</p> <p><b>Diseases of skin:</b>          SCC, BCC, melanoma, Leprosy          Other cutaneous infectious diseases like Mycetoma, Molluscum, Rhinosporidiosis</p> <p><b>Diseases Of Infancy and Childhood:</b> Non-neoplastic like Hydrops fetalis Tumors of childhood</p> <p><b>Diseases of endocrine system:</b>          Non neoplastic lesions of thyroid: Thyroid function tests, Iodine deficiency, Goitre, Autoimmune thyroiditis, Myxedema and thyrotoxicosis Tumors of thyroid          Adrenal diseases: Hyper function and hypo function, Tumors          Parathyroid hyperplasia and adenoma          Pituitary hyper function and hypo function, tumors Multiple endocrine neoplasia          Diabetes Mellitus</p> <p><b>Diseases of bone &amp; joints:</b> Osteomyelitis, osteoporosis, Bone tumors          Osteoarthritis, Rheumatoid arthritis, Gout</p> <p><b>Miscellaneous:</b></p> <ul style="list-style-type: none"> <li>• Revision Classes on Systemic and applied pathology</li> <li>• Anemia, Bleeding, Nephrotic syndrome, Jaundice, PUO, bleeding disorder etc</li> <li>• Processing of samples</li> <li>• Universal work precautions</li> <li>• Autopsy</li> </ul>
Theory SDL	<p><b>Diseases of skin:</b> Bullous diseases, Psoriasis</p> <p><b>Diseases of bone &amp; joints:</b></p> <ul style="list-style-type: none"> <li>• Paget disease of bone, Osteomalacia, Osteoporosis</li> <li>• Metastatic tumors in bone</li> </ul> <p><b>Endocrine:</b> Hyper function and hypo function of endocrine organs, Thyroid function tests</p>
Practical	<p><b>Diseases of breast:</b></p> <ul style="list-style-type: none"> <li>• <u>Gross:</u> Fibroadenoma and IDC</li> <li>• <u>Slide:</u> Fibroadenoma</li> </ul> <p><b>Diseases of skin:</b></p> <ul style="list-style-type: none"> <li>• <u>Gross:</u> SCC, melanoma, Mycetoma</li> <li>• <u>Slides:</u> SCC, BCC, Melanoma,</li> <li>• Mycetoma, leprosy, Molluscum, Rhinosporidiosis</li> </ul> <p><b>Diseases of endocrine system:</b></p> <ul style="list-style-type: none"> <li>• Gross/ Experiment: MNG, Colloid goiter</li> <li>• Papillary Ca thyroid</li> <li>• Pheochromocytoma</li> <li>• Urinalysis – sugar and ketones</li> <li>• <u>Slides:</u> MNG</li> <li>• Papillary Ca</li> <li>• Medullary Ca</li> <li>• KW lesion</li> </ul> <p><b>Diseases of bone &amp; joints:</b></p> <ul style="list-style-type: none"> <li>• <u>Gross:</u> Sequestrum</li> <li>• GCT</li> <li>• Osteosarcoma</li> <li>• Ewings</li> <li>• Chondrosarcoma, Vertebral mets</li> <li>• <u>Slides:</u> Osteomyelitis</li> <li>• GCT</li> <li>• Osteosarcoma</li> </ul>

## PHARMACOLOGY

1	GENERAL PHARMACOLOGY AND IMMUNOPHARMACOLOGY - I
Theory	<ul style="list-style-type: none"> <li>• Introduction to Pharmacology Course</li> <li>• Nomenclature &amp; Sources of Drugs</li> <li>• Routes of Drug Administration</li> <li>• Pharmacokinetics – 3classes</li> <li>• Pharmacodynamics – 2classes</li> <li>• Adverse Drug Reactions, Drug Interactions</li> <li>• Drug Discovery &amp; Development</li> <li>• NSAIDs – 2classes</li> <li>• Histamine &amp; Antihistamines</li> <li>• Serotonin agonists &amp; antagonists</li> <li>• Pharmacotherapy of migraine</li> <li>• Drugs affecting lipid derived autacoids</li> <li>• Drugs for treatment of shock</li> <li>• Drugs for rheumatoid arthritis &amp; gout-2classes</li> <li>• Essential Medicines &amp; P drugs</li> <li>• Chelating agents</li> <li>• Immuno suppressants &amp; immune modulators</li> <li>• General principles of antimicrobial use – 2 classes</li> <li>• Anthelmintic drugs – 2classes</li> <li>• Antifungal agents – 2classes</li> <li>• Penicillins &amp; cephalosporins – 2classes</li> <li>• Sulfonamides</li> <li>• Aminoglycosides</li> <li>• Macrolides</li> <li>• Tetracyclines</li> <li>• Fluoroquinolones</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Bioassay and biostandardisation</li> <li>• Drugs affecting peptide derived autacoids</li> <li>• General principles of poisoning</li> <li>• Chelating agents</li> <li>• Vitamins</li> <li>• Miscellaneous cell wall synthesis inhibitors</li> <li>• Chloramphenicol</li> <li>• Miscellaneous protein synthesis inhibitors</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Introduction to Practical pharmacology and sources of drugs</li> <li>• Oral and parenteral dosage forms</li> <li>• Topical dosage forms and devices</li> <li>• Parenteral drug administration</li> <li>• Prescription writing and auditing – Basic concepts</li> <li>• Prescription writing Autacoids</li> <li>• Good laboratory practice</li> <li>• Calculation of drug dosage and percentage solutions</li> <li>• Data presentation and analysis</li> <li>• Study of action of drugs on the rabbit's eye – CAL</li> <li>• Effective doctor-patient communication</li> </ul>

<b>2</b>	<b>DRUGS FOR HEMATOLOGIC DISORDERS, DRUGS AFFECTING RESPIRATORY SYSTEM AND AUTONOMIC NERVOUS SYSTEM</b>
Theory	<ul style="list-style-type: none"> <li>• Drugs for treatment of anemia - 2classes</li> <li>• Drugs for trypanosomiasis</li> <li>• Drugs for leishmaniasis</li> <li>• Drugs for treatment of malaria – 3classes</li> <li>• Fibrinolytics &amp; Antifibrinolytics</li> <li>• Anticoagulants – 3classes</li> <li>• Antiplatelet drugs</li> <li>• Drugs used in dyslipidemia</li> <li>• Introduction to Autonomic Nervous System</li> <li>• Directly Acting Cholinergic Drugs</li> <li>• Cholinesterase Inhibitors</li> <li>• Anticholinergics – 2classes</li> <li>• Adrenergic Drugs – 2classes</li> <li>• Antiadrenergics – 2classes</li> <li>• Treatment of Alzheimer's Disease &amp; Glaucoma</li> <li>• Drugs for treatment of bronchial asthma – 2 classes</li> <li>• Drugs for treatment of tuberculosis – 2classes</li> <li>• Skeletal Muscle Relaxants</li> <li>• Anticancer agents – 2classes</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Antitussives, mucolytics &amp; expectorants</li> <li>• Coagulants</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Effect of drugs on ciliary movement of frog's oesophagus -CAL</li> <li>• Effect of drugs on perfused frog's heart - CAL</li> <li>• Effect of drugs on dog's blood pressure – CAL</li> <li>• Bioassay of histamine – CAL</li> <li>• General principles of anti-microbial use</li> <li>• Prescription writing Chemotherapy1</li> </ul>

<b>3</b>	<b>DRUGS AFFECTING CARDIOVASCULAR SYSTEM AND GASTROINTESTINAL SYSTEM</b>
Theory	<ul style="list-style-type: none"> <li>• Antihypertensives – 5classes</li> <li>• Drugs for angina -2classes</li> <li>• Drugs for treatment of heart failure – 2classes</li> <li>• Antiarrhythmic drugs – 2classes</li> <li>• Diuretics</li> <li>• Drugs used for peptic ulcer – 2classes</li> <li>• Antiemetics</li> <li>• Drugs for treatment of diarrhea</li> <li>• Drugs for treatment of constipation</li> <li>• Drugs for treatment of inflammatory bowel disease</li> <li>• Drugs for treatment of amoebiasis, giardiasis and trichomoniasis</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Antidiuretics</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• P drug concept, individualization of drug therapy and pharmacoeconomics</li> <li>• Study of absorption and bio availability of drugs in man</li> <li>• Preparation of solution for test dose of penicillin</li> <li>• Therapeutic drug monitoring</li> <li>• Critical appraisal of drug advertisements</li> <li>• Essential medicines list</li> <li>• Prescription writing Chemotherapy2</li> </ul>

<b>4</b>	<b>DRUGS AFFECTING GENITOURINARY SYSTEM AND CENTRAL NERVOUS SYSTEM</b>
Theory	<ul style="list-style-type: none"> <li>• Estrogens &amp; antiestrogens</li> <li>• Oral &amp; injectable contraceptives</li> <li>• Progestins &amp; antiprogestins</li> <li>• Oxytocics &amp; uterine relaxants</li> <li>• Androgens &amp; antiandrogens</li> <li>• Introduction to CNS drugs</li> <li>• Opioids – 3classes</li> <li>• Sedative hypnotics – 2classes</li> <li>• Alcohol</li> <li>• Drugs for treatment of epilepsy – 3classes</li> <li>• Drugs for treatment of parkinsonism – 2 classes</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• CNS stimulants &amp; Nootropicagents</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Management of common poisonings</li> <li>• ADR monitoring and causality analysis</li> <li>• Medical ethics and Informed consent for research on humans</li> <li>• Randomized controlled clinical trials</li> <li>• Fixed dose drug combinations</li> <li>• Prescription writing CVS</li> </ul>

5	DRUGS AFFECTING ENDOCRINE SYSTEM AND MISCELLANEOUS
Theory	<ul style="list-style-type: none"> <li>• Drugs of abuse</li> <li>• Antiviral agents (except anti-retrovirals)</li> <li>• Antiretroviral drugs – 2classes</li> <li>• Drugs affecting calcium metabolism</li> <li>• Thyroid &amp; anti thyroid drugs – 2classes</li> <li>• Drugs for treatment of diabetes mellitus – 3 classes</li> <li>• Corticosteroids – 2classes</li> <li>• General principles of anaesthesia &amp; preanaesthetic medication</li> <li>• Inhaled anaesthetics</li> <li>• Intravenous anaesthetics</li> <li>• Local anaesthetics – 2classes</li> <li>• Antipsychotics – 2classes</li> <li>• Antidepressants – 2classes</li> <li>• Drugs for treatment of mania &amp; bipolar disorders</li> <li>• Drugs for treatment of leprosy</li> <li>• Compliance, Placebo &amp; FDC</li> <li>• Therapeutic drug monitoring &amp; Rational Use of Medicines</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Drugs used in dermatologic disorders</li> <li>• Drugs affecting anterior pituitary hormones</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Medication errors</li> <li>• Sources of drug information and evidence based drug use</li> <li>• Prescription writing CNS</li> <li>• Prescription writing Endocrine system</li> </ul>

## FORENSIC MEDICINE

1	GENERAL FORENSIC MEDICINE
Theory	<ul style="list-style-type: none"> <li>• Introduction and History</li> <li>• Inquest</li> <li>• Police Inquest</li> <li>• Magistrate Inquest</li> <li>• Courts of Law</li> <li>• Subpoena or Summons</li> <li>• Conduct Money</li> <li>• Medical Evidence</li> <li>• Types of Witness</li> <li>• Recording of Evidence</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Conduct and Duties of a Doctor in the Witness Box</li> </ul>
Practical	<b>NIL</b>

2	MEDICAL JURISPRUDENCE AND ETHICS
Theory	<ul style="list-style-type: none"> <li>• State Medical Council(SMC)</li> <li>• Duties of a Doctor</li> <li>• Privileged Communication</li> <li>• Medical Malpractice</li> <li>• Unethical Acts</li> <li>• Professional Misconduct (Infamous Conduct)</li> <li>• Erasure of Name</li> <li>• Types of Physician-Patient Relationship</li> <li>• Professional Negligence</li> <li>• Preventing Medical Litigation</li> <li>• Defenses Against Negligence</li> <li>• Doctrine of Res Ipsa Loquitur</li> <li>• Calculated Risk Doctrine</li> <li>• Doctrine of Common Knowledge</li> <li>• Doctrine of Avoidable Consequence Rule</li> <li>• Medical Maloccurrence</li> <li>• Novus Actus Interveniens</li> <li>• Contributory Negligence</li> <li>• Therapeutic Misadventure/Hazard</li> <li>• Vicarious Liability/Respondent Superior</li> <li>• Corporate Negligence</li> <li>• Products Liability</li> <li>• Consent</li> <li>• Medical Records</li> <li>• Malingering(Shamming)</li> <li>• Euthanasia (Mercy Killing)</li> </ul> <p><b>Acts Related to Medical Practice</b></p> <ul style="list-style-type: none"> <li>• The Consumer Protection Act, 1986(CPA)</li> <li>• The Workmen's Compensation Act,1923</li> <li>• The Medical Termination of Pregnancy (MTP)Act, 1971</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• The Prenatal Diagnostic Techniques (PNDT) Act, 1994 and PCPNDT Act</li> <li>• The Transplantation of Human Organs Act,1994</li> <li>• Medical Council of India(MCI)</li> <li>• Functions of MCI</li> <li>• Red Cross Emblem</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Dying declaration</li> </ul>

	<ul style="list-style-type: none"> <li>• Consent for Operation</li> <li>• Discharge Against Medical Advice</li> <li>• Police Intimation Letter</li> </ul>
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3	<b>IDENTIFICATION</b>
Theory	<ul style="list-style-type: none"> <li>• Corpus Delicti</li> <li>• Race and Religion</li> <li>• Sex</li> <li>• Nuclear Sexing</li> <li>• Intersex</li> <li>• Sex from Skeletal Remains</li> <li>• Age</li> <li>• Age from Ossification of Bones</li> <li>• Age Determination in Adults Over 25Years</li> <li>• Medico-legal Importance of Age</li> <li>• Stature</li> <li>• Anthropometry (Bertillon System)</li> <li>• Dactylography(Dactyloscopy)</li> <li>• Hair</li> <li>• Superimposition</li> <li>• Forensic Odontology</li> <li>• Miscellaneous Methods of Identification</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Scars</li> <li>• Poroscopy</li> <li>• Lip Prints(Cheiloscopy)</li> <li>• Tattoo Marks</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Estimation of Age by Bone</li> <li>• Estimation of Sex by Bone</li> <li>• Estimation of Stature</li> <li>• Estimation of Race</li> <li>• Cluster of Bone Examination</li> <li>• Forensic Radiology</li> <li>• Dental Examination</li> <li>• Age Estimation</li> <li>• Hair and Fibers</li> <li>• Fingerprint</li> </ul>

4	<b>THANATOLOGY AND POSTMORTEM CHANGES</b>
Theory	<ul style="list-style-type: none"> <li>• Brain/Brainstem Death</li> <li>• Cause, Mechanism and Manner of Death</li> <li>• Cause of Death</li> <li>• Modes of Death (Proximate Causes of Death)</li> <li>• Anoxia</li> <li>• Sudden Death</li> <li>• Coronary Atherosclerosis</li> </ul> <b>Signs of Death</b> <ul style="list-style-type: none"> <li>• Immediate Changes (Somatic Death)</li> <li>• Suspended Animation (Apparent Death)</li> <li>• Early Changes (Molecular Death)</li> <li>• Cooling of the Dead Body</li> <li>• Postmortem Staining</li> <li>• Rigor Mortis</li> <li>• Cadaveric Spasm</li> <li>• Heat Stiffening</li> <li>• Cold Stiffening</li> <li>• Decomposition/Putrefaction</li> <li>• Decomposition of Submerged Body</li> <li>• Floatation of a Dead Body on Water</li> <li>• Adipocere(Saponification)</li> <li>• Mummification</li> <li>• Estimation of Time Since Death (TSD) or Postmortem Interval(PMI)</li> <li>• Preservation of Dead Bodies</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Entomology</li> <li>• Presumption of Survivorship</li> <li>• Presumption of Death</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Autopsy demonstration</li> <li>• Forensic Entomology</li> </ul>



<b>5</b>	<b>MEDICO-LEGAL AUTOPSY</b>
Theory	<ul style="list-style-type: none"> <li>• Purpose/Objectives of Autopsy</li> <li>• Procedure for Medico-legal Autopsies</li> <li>• Instruments for Autopsy Examination</li> <li>• External Examination</li> <li>• Internal Examination</li> <li>• Skin Incisions</li> <li>• Evisceration Methods</li> <li>• Examination Proper</li> <li>• Chest</li> <li>• Heart</li> <li>• Neck</li> <li>• Skull and Brain</li> <li>• Description of an Organ</li> <li>• Report</li> <li>• Demonstration of Pneumothorax</li> <li>• Demonstration of Air Embolus</li> <li>• Collection of Samples</li> <li>• Preservation of Viscera</li> <li>• Preservation of Samples</li> <li>• Obscure and Negative Autopsy</li> <li>• Second Autopsy</li> <li>• Examination of Decomposed, Mutilated and Skeletonized Remains</li> <li>• Exhumation</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Samples for Laboratory Investigations</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Autopsy demonstration</li> </ul>

<b>6</b>	<b>MODERN MORTUARY AND AUTOPSY ROOM HAZARDS</b>
Theory	<ul style="list-style-type: none"> <li>• Criteria of a modern mortuary.</li> <li>• Commonly Acquired Infections</li> <li>• Autopsy of HIV Positive and HBV Patients Second Autopsy</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Autopsy and Disposal of Radioactive Corpse Practical</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Autopsy demonstration</li> </ul>

<b>7</b>	<b>Injuries</b>
Theory	<ul style="list-style-type: none"> <li>• Classification of Wounds/Injuries</li> <li>• Abrasion</li> <li>• Bruise/Contusion</li> <li>• Lacerated Wound</li> <li>• Incised Wound</li> <li>• Chop Wounds</li> <li>• Stab Wound</li> <li>• Defense Wounds</li> <li>• Fabricated Wounds (Fictitious/Forged Wounds)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Therapeutic or Diagnostic Wounds</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Medical Sickness/Under Treatment Certificate</li> <li>• Medical Fitness Certificate</li> <li>• Certificate of Physical Fitness</li> <li>• Injury / Wound Certificate</li> <li>• Examination of Weapon</li> </ul>

8	<b>Firearm Injuries</b>
Theory	<ul style="list-style-type: none"> <li>• Classification of Firearms</li> <li>• Rifled Firearms</li> <li>• Smooth Bore Firearms/Shotguns</li> <li>• Bore(Gauge/ Calibre)</li> <li>• Bullet</li> <li>• Cartridge</li> <li>• Gun powders (Propellant Charge)</li> <li>• Mechanism of Discharge of Projectile</li> <li>• Wound Ballistics and Mechanism of Injury</li> <li>• Firearm Wounds</li> <li>• Characteristics of Shotgun Wounds</li> <li>• Characteristics of Rifled Firearms Wounds</li> <li>• Firearm Wounds on Skull</li> <li>• Exit Wounds</li> <li>• Postmortem Examination</li> <li>• Preservation and Marking of Exhibits</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Peculiar Effects of Firearms</li> </ul>
Practical	<b>NIL</b>
9	<b>. Regional Injuries</b>
Theory	<ul style="list-style-type: none"> <li>• Cranio cerebral Injuries</li> <li>• Soft Tissue Injury</li> <li>• Skull Fractures</li> <li>• Coup and Contre-coup Injury</li> <li>• Brain Injury</li> <li>• Cerebral Concussion</li> <li>• Diffuse Axonal Injury (DAI)</li> <li>• Cerebral Contusion and Laceration</li> <li>• Intracranial Hematoma</li> <li>• Extradural/Epidural Hematoma(EDH)</li> <li>• Subdural Hematoma(SDH)</li> <li>• Subarachnoid Hematoma(SAH)</li> <li>• Intracerebral Hematoma(ICH)</li> <li>• Diffuse Injury to the Brain</li> <li>• Spinal Cord</li> <li>• Neck</li> <li>• Vertebral Column</li> <li>• Chest &amp; Lungs</li> </ul>
Theory SDL	Heart, Abdomen, Kidneys, Bones and Joints
Practical	<b>NIL</b>
10	<b>Thermal Injuries</b>
Theory	<ul style="list-style-type: none"> <li>• Cold &amp; Heat Injury</li> <li>• Heat Hyperpyrexia or Heat Stroke</li> <li>• Burns</li> <li>• Postmortem Examination</li> <li>• Medico-legal Questions</li> <li>• Scalds</li> <li>• Electrical Injuries(Electrocution)</li> <li>• Lightning Stroke</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Judicial Electrocution</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Autopsy demonstration</li> </ul>

11	<b>Transportation Injuries</b>
Theory	<ul style="list-style-type: none"> <li>• Pedestrian Injuries</li> <li>• Injuries Sustained by Vehicle Occupants</li> <li>• Role of Seat Belts and Air Bags</li> <li>• Motorcycle and Cycle Injuries</li> <li>• Postmortem Examination</li> <li>• Alcohol, Drugs and Trauma</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Railway Injuries</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Autopsy demonstration</li> </ul>

12	<b>Explosion Injuries and Fall from Height</b>
Theory	<ul style="list-style-type: none"> <li>• Explosion Injuries</li> <li>• Mechanism of Action</li> <li>• Classification of Injuries</li> <li>• Medico-legal Aspects</li> <li>• Injury Patterns</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Fall from Height</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Autopsy demonstration</li> </ul>

13	<b>. Medico-legal Aspects of Injuries</b>
THEORY	<ul style="list-style-type: none"> <li>• Simple Hurt/Injury</li> <li>• Grievous Hurt/Injury</li> <li>• Punishments</li> <li>• Cause of Death from Wounds</li> <li>• Medico-legal Questions</li> <li>• Injury Report</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

14	<b>Decompression, Radiation and Altitude Sickness</b>
Theory	<ul style="list-style-type: none"> <li>• Decompression Sickness</li> <li>• Autopsy in Decompression Sickness</li> <li>• Altitude Illness</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Ionizing Radiation Reactions</li> </ul>
Practical	<b>NIL</b>

15	<b>Starvation Deaths</b>
Theory	<ul style="list-style-type: none"> <li>• Mode of Starvation</li> <li>• Pathophysiology</li> <li>• Signs and Symptoms</li> <li>• Postmortem Findings</li> <li>• Medico legal questions</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

15	<b>Asphyxia</b>
Theory	<ul style="list-style-type: none"> <li>• Pathophysiology of Asphyxia</li> <li>• Etiology of Asphyxia</li> <li>• Clinical Effects of Asphyxia</li> <li>• Hanging</li> <li>• Autopsy of Neck (Asphyxial Deaths)</li> <li>• Postmortem Findings in Hanging</li> <li>• Medico-legal Questions</li> <li>• Lynching</li> <li>• Judicial Hanging</li> <li>• Strangulation</li> <li>• Ligature Strangulation</li> <li>• Postmortem Examination</li> <li>• Medico-legal Questions</li> <li>• Throttling or Manual Strangulation</li> <li>• Postmortem Examination</li> <li>• Medico-legal Questions</li> <li>• Hyoid Bone Fractures</li> <li>• Suffocation</li> <li>• Café-coronary</li> <li>• Drowning</li> <li>• Postmortem Examination</li> <li>• Medico-legal Questions</li> <li>• Sexual Asphyxia (Autoerotic Asphyxia/ Hypoxyphilia, Asphyxiophilia)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Hyperventilation Deaths</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Autopsy demonstration</li> </ul>

17	<b>Virginity, Pregnancy and Delivery</b>
Theory	<ul style="list-style-type: none"> <li>• Normal Female Anatomy (in Virgins)</li> <li>• Medico-legal Aspects</li> <li>• Presumptive Signs/Symptoms</li> <li>• Probable Signs of Pregnancy</li> <li>• Positive/Conclusive Signs of Pregnancy</li> <li>• Pseudocyesis (Spurious/False/Phantom Pregnancy)</li> <li>• Legitimacy and Paternity</li> <li>• Signs and Symptoms of Recent Delivery in Living</li> <li>• Signs of Remote Delivery in Living</li> <li>• Medico-legal Aspects of Pregnancy and Delivery</li> <li>• Nullity of Marriage and Divorce</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Superfecundation</li> <li>• Superfetation</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Certification of Recent delivery</li> </ul>

18	<b>Abortion</b>
Theory	<ul style="list-style-type: none"> <li>• Classification of Abortion</li> <li>• Criminal Abortion</li> <li>• Complications of Criminal Abortion</li> <li>• Duties of a Doctor in Suspected Criminal Abortion</li> <li>• Examination of a Woman with Alleged History of Abortion</li> <li>• Postmortem Examination</li> <li>• Trauma and Abortion</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Trauma and Abortion</li> </ul>
Practical	<b>NIL</b>

19	<b>Infanticide and Child Abuse</b>
Theory	<ul style="list-style-type: none"> <li>• Postmortem Examination of Infants</li> <li>• Age of Fetus</li> <li>• Rule of Hasse</li> <li>• Demonstration of Centres of Ossification</li> <li>• Features of Dead-Born Fetus</li> <li>• Signs of Live Birth</li> <li>• Postmortem Examination</li> <li>• Infant Death</li> <li>• Battered Baby Syndrome(Caffey /Maltreatment Syndrome)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Sudden Infant Death Syndrome (SIDS, Cot Death or Crib Death)</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Examination of Foetus</li> </ul>
20	<b>Impotence and Sterility</b>
Theory	<ul style="list-style-type: none"> <li>• Causes of Impotence and Sterility in Males</li> <li>• Causes of Impotence and Sterility in Female</li> </ul> <p>Examination of a Person in an Alleged Case of</p> <ul style="list-style-type: none"> <li>• Impotence and Sterility</li> <li>• Sterilization &amp; Artificial Insemination(AI)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Surrogate Mother</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Determination of Potency</li> </ul>
21	<b>Sexual Jurisprudence</b>
Theory	<p><b>Natural Sexual Offences</b></p> <ul style="list-style-type: none"> <li>• Rape</li> <li>• Duties of a Doctor in case of an Alleged Victim of Rape</li> <li>• Examination of the Rape Victim</li> <li>• Examination</li> <li>• Corroborative Signs of Rape</li> <li>• Rape on Deflorate/Sexually Active Woman</li> <li>• Rape on Children</li> <li>• Medico-legal Questions</li> <li>• Rape Trauma Syndrome</li> <li>• Examination of Rape Accused</li> </ul> <p><b>Unnatural Sexual Offences</b></p> <ul style="list-style-type: none"> <li>• Sodomy</li> <li>• Examination of Passive Agent of Sodomy</li> <li>• Opinion</li> <li>• Examination of Active Agent of Sodomy</li> <li>• Tribadism/Lesbianism</li> <li>• Bestiality (Zoophilia)</li> <li>• Buccal Coitus</li> </ul> <p><b>Sexual Perversions/Deviations</b></p> <ul style="list-style-type: none"> <li>• Sadism (Algolagnia)</li> <li>• Masochism (Passive Algolagnia)</li> <li>• Transvestic Fetishism (Eonism)</li> <li>• Voyeurism(Scotophilia)</li> <li>• Exhibitionism</li> <li>• Fetishism</li> <li>• Frotteurism (Toucherism)</li> <li>• Pedophilia</li> <li>• Masturbation (Onanism) &amp; Indecent Assault</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Incest &amp; Adultery</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Examination of Accused &amp; Examination of Victim</li> </ul>

21	<b>Forensic science</b>
Theory	<ul style="list-style-type: none"> <li>• Forensic Science Laboratory</li> <li>• Forensic Science Organization and its sections</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Locard's Principle</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Forensic Serology &amp; Hair and Fibers</li> </ul>
22	<b>Analytical Forensic Bloodstain Analysis</b>
Theory	<ul style="list-style-type: none"> <li>• Bloodstain Pattern Analysis</li> <li>• Presumptive Tests for Blood</li> <li>• Confirmatory Tests for Blood</li> <li>• Species Identification</li> <li>• Genetic Markers in Blood</li> <li>• Medico-legal Application of Blood(Groups)</li> </ul> <p><b>Seminal Stain and Other Biological Samples</b></p> <ul style="list-style-type: none"> <li>• Purpose of Seminal Identification</li> <li>• Examination of Seminal Stains</li> <li>• Confirmatory Tests</li> <li>• Identification of Species Origin</li> <li>• Individualization of Seminal Stains</li> <li>• Identification of Biological Samples and Body Fluids</li> </ul> <p><b>DNA Fingerprinting</b></p> <ul style="list-style-type: none"> <li>• RFLP &amp; PCR</li> <li>• Specimen Selection and Preservation</li> <li>• Uses of DNA Fingerprinting</li> <li>• Limitations of DNA Testing</li> </ul> <p><b>Newer Techniques and Recent Advances</b></p> <ul style="list-style-type: none"> <li>• Polygraph</li> <li>• Brain Fingerprinting (Brain Mapping)</li> <li>• Narco-Analysis</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Species Identification, Genetic Markers in Blood</li> <li>• Identification of Biological Samples and Body Fluids</li> <li>• Limitations of DNA Testing</li> </ul>
Practical	<b>NIL</b>
23	<b>Forensic Psychiatry</b>
Theory	<ul style="list-style-type: none"> <li>• Delusion</li> <li>• Hallucination</li> <li>• Illusion</li> <li>• Impulse</li> <li>• Obsession</li> <li>• Lucid Interval</li> <li>• Role of Forensic Psychiatrist</li> <li>• Psychiatric Assessment</li> <li>• Classification of Mental and Behavioral Disorders</li> <li>• Organic Mental Disorders</li> <li>• Schizophrenia</li> <li>• Mood (Affective) Disorders</li> <li>• Neurotic and Somatoform Disorders</li> <li>• Behavioral Syndromes</li> <li>• Mental Disorder and Responsibility</li> <li>• The Mental Health Act, 1987</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Mental Retardation</li> </ul>
Practical	<b>NIL</b>

24	<b>General Toxicology</b>
Theory	<ul style="list-style-type: none"> <li>• Medico-legal Aspects of Poisons</li> <li>• Classification of Poisons</li> <li>• Factors Modifying the Action of Poisons</li> <li>• Diagnosis of Poisoning in Living</li> <li>• Diagnosis of Poisoning in Dead</li> <li>• Failure to Detect Poison</li> <li>• Management of Poisoning Cases</li> <li>• Removal of Unabsorbed Poison</li> <li>• Administration of Antidotes</li> <li>• Elimination of Poison by Excretion</li> </ul> <p>Samples Preserved for Toxicological Analysis</p>
Theory SDL	<ul style="list-style-type: none"> <li>• Duties of a Doctor in a Case of Suspected Poisoning</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Doctors, Poisoning and Law</li> <li>• Preservation of Viscera In Case of Suspected Poisoning</li> </ul>

25	<b>Corrosive Poisons</b>
Theory	<ul style="list-style-type: none"> <li>• Mineral Acids</li> <li>• Vitriol age (Vitriol Throwing)</li> <li>• Oxalic Acid (Acid of Sugar)</li> <li>• Carbolic Acid(Phenol)</li> <li>• Strong Alkalis (Caustic Alkalis)</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

26	<b>Inorganic Metallic Irritants</b>
Theory	<p><b>Arsenic</b></p> <ul style="list-style-type: none"> <li>• Signs and Symptoms (Acute Poisoning)</li> <li>• Treatment</li> <li>• Postmortem Findings</li> <li>• Chronic Arsenic Poisoning</li> <li>• Postmortem Imbibition of Arsenic</li> </ul> <p><b>Mercury</b></p> <ul style="list-style-type: none"> <li>• Signs and Symptoms (Acute Poisoning)</li> <li>• Treatment</li> <li>• Postmortem Findings</li> <li>• Chronic Mercury Poisoning (Hydrargyrism)</li> </ul> <p><b>Lead</b></p> <ul style="list-style-type: none"> <li>• Chronic Lead Poisoning (Plumbism/Saturnism)</li> <li>• Signs and Symptoms</li> <li>• Treatment</li> <li>• Postmortem Findings</li> <li>• Postmortem Findings</li> <li>• Chronic Copper Poisoning</li> </ul> <p><b>Copper</b></p> <ul style="list-style-type: none"> <li>• Signs and Symptoms (Acute Poisoning)</li> <li>• Treatment</li> </ul> <p><b>Thallium</b></p> <ul style="list-style-type: none"> <li>• Signs and Symptoms</li> <li>• Treatment</li> <li>• Postmortem Findings</li> </ul>

	<b>Non-metallic and Mechanical Irritants</b> <ul style="list-style-type: none"> <li>• Phosphorus</li> <li>• Chronic Phosphorus Poisoning</li> <li>• Mechanical Irritants</li> </ul>
Theory SDL	<b>Other Inorganic Metallic Irritants</b> <ul style="list-style-type: none"> <li>• Cadmium, Barium, Zinc, Metal Fume Fever (MFF), Methemoglobinemia Inducing Agents</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Toxicology Spotters</li> </ul>

27	<b>Organic Irritants—</b>
Theory	<b>Vegetable</b> <ul style="list-style-type: none"> <li>• Ricinus Communis(Castor)</li> <li>• Croton Tiglium (Jamalgota)</li> <li>• Abrus Precatorius (Rati, Gunchi, Jequirity)</li> <li>• Suis</li> <li>• Semecarpus Anacardium</li> <li>• Capsicum Annum</li> <li>• Calotropis (‘RubberBush’)</li> <li>• Ergot</li> </ul> <b>Animal</b> <ul style="list-style-type: none"> <li>• Snakes</li> <li>• Signs and Symptoms of Ophitoxemia</li> <li>• Management</li> <li>• Postmortem Findings</li> <li>• Medico-legal Aspects</li> <li>• Cantharides (Spanish Fly)</li> <li>• Scorpions</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Bees and Wasps</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Spotters</li> </ul>

28	<b>Somniferous Poisons (Narcotic Poisons)</b>
Theory	<ul style="list-style-type: none"> <li>• Opium</li> <li>• Signs and Symptoms</li> <li>• Treatment</li> <li>• Postmortem Findings</li> <li>• Body Packers</li> <li>• Chasing the Dragon</li> <li>• Chronic Morphine Poisoning (Morphinism)</li> <li>• Fentanyl</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>



29	<b>Inebriants—Alcohol</b>
Theory	<ul style="list-style-type: none"> <li>• Signs and Symptoms (Acute Poisoning)</li> <li>• Treatment</li> <li>• Postmortem Findings</li> <li>• Medico-legal Aspects</li> <li>• Chronic Alcoholism (Systemic Effects)</li> <li>• Delirium Tremens</li> <li>• Alcoholic Hallucinosi</li> <li>• Wernicke's Encephalopathy</li> <li>• Korsakoff's Psychosis</li> <li>• Drunkenness</li> <li>• Diagnosing a Case of Drunkenness</li> <li>• Laboratory Investigations</li> <li>• Collection of Samples in Living</li> <li>• Methyl Alcohol(Methanol)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Isopropyl Alcohol, Ethylene Glycol</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Examination of A Case of Drunkenness</li> </ul>

30	<b>Barbiturates</b>
Theory	<ul style="list-style-type: none"> <li>• Signs and Symptoms</li> <li>• Management</li> <li>• Treatment</li> <li>• Postmortem Findings</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Barbiturate Automatism(Self-poisoning)</li> </ul>
Practical	<b>NIL</b>

31	<b>Deliriant – Dhatura /Datura</b>
Theory	<ul style="list-style-type: none"> <li>• Dhatura /Datura</li> <li>• Signs and Symptoms</li> <li>• Treatment</li> <li>• Postmortem Findings</li> </ul> <p><b>Cannabis</b></p> <ul style="list-style-type: none"> <li>• Signs and Symptoms</li> <li>• Treatment</li> </ul> <p><b>Cocaine</b></p> <ul style="list-style-type: none"> <li>• Signs and Symptoms</li> <li>• Treatment</li> <li>• Cocainism (Cocainomania /Cocainophagia)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Run-amok</li> <li>• Magnan's Syndrome/Cocaine Bugs</li> </ul>
Practical	<b>NIL</b>

32	<b>Spinal and Peripheral Nerve Poisons</b>
Theory	<ul style="list-style-type: none"> <li>• Strychnos Nux-vomica(Kuchila)</li> <li>• Curare</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Conium Maculatum (Hemlock)</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Nil</li> </ul>

33	<b>Cardiac Poisons</b>
Theory	<ul style="list-style-type: none"> <li>• Aconite (Monk's Hood, Mitha Zaher, Bish)</li> <li>• Nicotiana Tabacum (Tobacco)</li> <li>• Digitalis Purpurea (Foxglove)</li> <li>• Nerium Odorum (White Oleander, Kaner)</li> <li>• Cerbera Thevetia (Yellow Oleander, Pila Kaner)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Quinine</li> </ul>
Practical	<b>NIL</b>

34	<b>Hydrocyanic Acid</b>
Theory	<ul style="list-style-type: none"> <li>• Signs and Symptoms</li> <li>• Treatment</li> <li>• Postmortem Findings</li> <li>• Judicial Execution</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

35	<b>Asphyxiants</b>
Theory	<ul style="list-style-type: none"> <li>• Carbon Monoxide(CO)</li> <li>• Carbon Dioxide(CO<sub>2</sub>)</li> <li>• Hydrogen Sulphide (H<sub>2</sub>S)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Nil</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Nil</li> </ul>

36	<b>War Gases and Biological Weapons</b>
Theory	<ul style="list-style-type: none"> <li>• War Gases</li> <li>• Types of Chemical Warfare Agents(CWAs)</li> <li>• Biological Weapons</li> <li>• Types of Biological Warfare Agents</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

37	<b>Agricultural Poisons</b>
Theory	<ul style="list-style-type: none"> <li>• Organophosphorus Compounds(OPCs)</li> <li>• Signs and Symptoms</li> <li>• Treatment</li> <li>• Postmortem Findings</li> <li>• Endrin</li> <li>• Naphthalene</li> <li>• Paraquat</li> <li>• Pyrethrins and Pyrethroids</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Pyrethrins and Pyrethroids</li> </ul>
Practical	<b>NIL</b>

38	<b>Alphos (Aluminum Phosphide)</b>
Theory	<ul style="list-style-type: none"> <li>• Signs and Symptoms</li> <li>• Treatment</li> <li>• Postmortem Findings</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

39	<b>Medicinal Poisons</b>
Theory	<ul style="list-style-type: none"> <li>• Paracetamol(Acetaminophen)</li> <li>• Iron</li> <li>• Antipsychotic Drugs(Tranquillizers)</li> <li>• Antihistaminics</li> <li>• Tricyclic Antidepressants(TCAs)</li> <li>• Benzodiazepines</li> <li>• Acetylsalicylic Acid(Aspirin)</li> <li>• Chloral Hydrate</li> </ul>
Theory SDL	• Acetylsalicylic Acid (Aspirin), Chloral Hydrate
Practical	<b>NIL</b>

40	<b>Drug Dependence</b>
Theory	<ul style="list-style-type: none"> <li>• Patterns of Drug Use Disorders</li> <li>• DSM-IV Criteria for Diagnosis of Substance Dependence</li> <li>• Psychoactive Substances</li> <li>• Complications of Drug Abuse</li> <li>• Postmortem Findings</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

41	<b>Kerosene Oil Poisoning</b>
Theory	<ul style="list-style-type: none"> <li>• Signs and Symptoms</li> <li>• Treatment</li> <li>• Postmortem Findings</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

42	<b>Food Poisoning</b>
Theory	<ul style="list-style-type: none"> <li>• Bacterial Food Poisoning</li> <li>• Botulism (Allantiasis)</li> <li>• Lathyrus Sativus ('KesariDhal')</li> </ul>
Theory SDL	• Food poisoning by Mushrooms, Argemone Mexicana (Prickly Poppy)
Practical	<b>NIL</b>

43	<b>Anesthetic Deaths</b>
Theory	<ul style="list-style-type: none"> <li>• Death during Administration of Anesthesia</li> <li>• Deaths Directly Related to Administration of an Anesthetic</li> <li>• Postmortem Examination</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

44	<b>Postmortem Artifacts</b>
Theory	<ul style="list-style-type: none"> <li>• Artifacts due to Postmortem Changes</li> <li>• Third Party Artifacts</li> <li>• Environmental Artifacts</li> <li>• Other Artifacts</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

45	<b>Torture and Custodial Deaths</b>
Theory	<ul style="list-style-type: none"> <li>• Types of Torture</li> <li>• Medical Practitioner and Torture</li> <li>• Custodial Deaths</li> </ul>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

46	<b>Medico-legal Aspects of HIV</b>
Theory	<ul style="list-style-type: none"> <li>• HIV Testing Policy</li> <li>• Health Care Workers and HIV Infection</li> <li>• Partner Notification</li> <li>• Clinical Trials and HIV</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Blood Donation and HIV</li> </ul>
Practical	<b>NIL</b>

47	<b>Mass Disaster and Investigation</b>
Theory	<b>Mass Disaster and Investigation</b>
Theory SDL	<b>NIL</b>
Practical	<b>NIL</b>

48	<b>Legal and Ethical issues in Biomedical Research</b>
Theory	<ul style="list-style-type: none"> <li>• Legal and Ethical issues in Biomedical Research</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• ICMR regulation</li> <li>• Procedure adopted</li> <li>• Rules and regulations</li> <li>• Informed consent</li> </ul>
Practical	<b>NIL</b>

## **PREVENTIVE AND SOCIAL MEDICINE**

<b>1</b>	<b>NUTRITION</b>
Theory	<ul style="list-style-type: none"> <li>• Macronutrient&amp; Micronutrients, trace elements</li> <li>• Balanced diet, dietary goals and RDA</li> <li>• Nutritional assessment</li> <li>• Nutritional deficiency, public health problem</li> <li>• Food adulteration, fortification and standards</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Public health acts related to food quality</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Principles of Nutrition&amp; Diet planning</li> <li>• Nutrition &amp; Diet planning- case scenarios</li> <li>• Nutrition spotters demonstration</li> </ul>

<b>2</b>	<b>Sociology</b>
Theory	<ul style="list-style-type: none"> <li>• Introduction to Medical Sociology</li> <li>• Behaviour, Culture, Role of family in health and disease</li> <li>• Social security, psychology and social organizations</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Student seminar based on case scenarios – ( Role of Behaviour, Role of Culture, Social problems, Social class, Role of family in health and disease)</li> <li>• Group Discussions - Social security , Social Organizations, Intelligence, Psychology , Motivation, Art of Interviewing</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Social Problems Related to Geriatric Care</li> </ul>

<b>3</b>	<b>REPRODUCTIVE AND CHILD HEALTH</b>
Theory	<ul style="list-style-type: none"> <li>• Introduction to RCH</li> <li>• Maternal health</li> <li>• New Born Care</li> <li>• Child Health ( Growth &amp; Development ,ICDS)</li> <li>• Indicators of MCH Care</li> <li>• Programmes ( School Health Programme)</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Juvenile Delinquency</li> <li>• Child abuse, Street Children , Refugee and Displaced Children, Child Labour, Child Trafficking</li> <li>• Maternal and child tracking system</li> <li>• Every New Born Action Plan</li> <li>• India New Born Action Plan</li> <li>• Mission Indradhanush</li> <li>• Elimination of maternal and neonatal tetanus</li> <li>• Global strategic measles and rubella Plan</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Immunisation</li> <li>• Immunisation spotters</li> <li>• Family welfare measures</li> <li>• Family welfare spotters</li> <li>• Integrated management of neonatal and childhood illness</li> <li>• Exercises on IMNCI</li> <li>• Adolescent health</li> <li>• Spotters on IMNCI</li> <li>• Growth monitoring</li> </ul>

<b>4</b>	<b>Biostatistics</b>
Theory	<ul style="list-style-type: none"> <li>• Introduction to biostatistics, Types of data</li> <li>• Measures of central tendency and dispersion, concept of statistical significance</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Sources of health information</li> <li>• Sampling- revision</li> <li>• Probability</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Measures of central tendency/Location</li> <li>• Measures of dispersion(Range, Standard deviation, Standard error, Co-efficient of variation)</li> </ul>

<b>5</b>	<b>Demography</b>
Theory	<ul style="list-style-type: none"> <li>• Introduction to demography and vital statistics, uses and demographic transition</li> <li>• Fertility and Mortality indicators</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Family planning measures-Revision</li> <li>• Population stabilisation</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Fertility indicators, dependency ratios</li> <li>• Mortality indicators</li> </ul>

<b>6</b>	<b>Epidemiology</b>
Theory	<ul style="list-style-type: none"> <li>• Introduction to Epidemiology &amp; Study Designs</li> <li>• Basic Measurements in Epidemiology</li> <li>• Descriptive Studies</li> <li>• Case control Studies</li> <li>• Cohort Studies</li> <li>• Interventional Studies</li> <li>• Bias and confounding</li> <li>• Association &amp; Causation of Disease</li> <li>• Screening for Diseases- Types of screening, definitions</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Measurements in health and disease</li> <li>• Standardization</li> <li>• International death certificate</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Exercises on Morbidity indicators</li> <li>• Exercises on case control study</li> <li>• Exercises on Cohort study</li> <li>• Investigation of outbreak</li> <li>• Exercise on Outbreak investigation</li> <li>• Exercises on Screening –Sensitivity, Positive Predictive value, Negative Predictive value</li> </ul>

<b>7</b>	<b>ENVIRONMENT</b>
Theory	<ul style="list-style-type: none"> <li>• ENVIRONMENT</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Water – Sources, Water related diseases</li> <li>• Air Pollution – Prevention and control</li> <li>• Noise Pollution –Effects, Prevention and control</li> <li>• Radiation</li> </ul>
Practical Block posting	<ul style="list-style-type: none"> <li>• Sewage treatment methods - Visit to Sewage treatment plant</li> <li>• Water quality standards - Visit to Water works, Muthirapalayam</li> <li>• Water purification methods - Horrock's apparatus and Choloroscope demonstration</li> <li>• Housing – Housing assessment during Family health advisory posting</li> <li>• Light and ventilation – Housing assessment during Family health advisory posting</li> <li>• Medical Entomology</li> </ul>

<b>8</b>	<b>COMUNICABLE DISEASES</b>
Theory	<ul style="list-style-type: none"> <li>• Infectious disease epidemiology, Dynamics of disease control</li> <li>• Principles of Disease prevention and control</li> <li>• Acute Respiratory Illness</li> <li>• Tuberculosis</li> <li>• Malaria</li> <li>• Dengue, Filariasis &amp; JE</li> <li>• Acute Diarrheal Diseases</li> <li>• Poliomyelitis</li> <li>• Rabies</li> <li>• HIV/AIDS</li> </ul>
Theory SDL	<ul style="list-style-type: none"> <li>• Control of Infectious diseases - Achievements in public health</li> <li>• Small Pox, ChickenPox, Measles</li> <li>• Diphtheria, Pertussis Tetanus</li> <li>• Emerging and re-emerging diseases- Influenza, ebola, zika</li> <li>• Plague ,leptospirosis</li> <li>• Leishmaiasis</li> <li>• Syndromic approach for STD's</li> <li>• Typhoid, cholera</li> <li>• Rickettsial infections</li> <li>• RF/ RHD</li> </ul>
Practical	<ul style="list-style-type: none"> <li>• Exercises on Communicable diseases control –Malaria</li> <li>• Exercises on Communicable diseases control – Filariasis, others</li> <li>• Communicable diseases control –TB</li> </ul>

<b>9</b>	<b>NCD Epidemiology</b>
Theory	<ul style="list-style-type: none"> <li>• Introduction to NCD and Mental Health</li> <li>• Risk factors for NCD</li> <li>• Diabetes Mellitus</li> <li>• Cardio-vascular diseases: HTN, IHD, Stroke</li> <li>• Cancers</li> <li>• Blindness</li> <li>• Road Traffic Injuries</li> <li>• Health Promotion 2,3,4,5,6,7,8: SCL . 1,9,10 : Lecture-Discussion</li> </ul>
Theory SDL	
Practical (Family Health Advisory programme)	<ul style="list-style-type: none"> <li>• Practical session on “Prevention and Control of Injuries” – 2sessions</li> <li>• WHO-ISH carting and risk calculation as a part of FHAP</li> <li>• IDRS calculation as a part of FHAP</li> <li>• Behavioural change communication as a part of FHAP</li> <li>• GHQ assessment as a part of FHAP</li> <li>• Assessment of ADL as a part of FHAP</li> <li>• Health Communication with the elderly as a part of FHAP</li> <li>• Case scenario discussion – 1, 2- 7: Skill based learning and evaluation</li> </ul>

## **GENERAL MEDICINE**

### **III Semester**

Introductory classes	1	Introduction on Practice of Medicine (Art of Medicine, Doctor-Patient relationship, Responsibilities of a doctor and Evidence Based Medicine)
	2	Negligence, Patient autonomy, conflict of interest, Confidentiality, Informed consent, Euthanasia
	3	Genetics – Basic (modes of inheritance, pedigree, clinical application and counseling)
	4	Nutritional assessment and requirements
General symptoms	5	Pain - Pathophysiology, Clinical types, Assessment, Management
	6	Weight Loss and Weight Gain
Infectious diseases - introduction	7	Approach to infectious diseases - diagnostic and therapeutic principles; Immune defence mechanisms
	8	Alterations in Temperature, Fever patterns
Symptomatology; Infectious diseases - RS, CVS	9	Alteration in Pulse and Blood Pressure
	10	Dyspnea, Chest Pain, Palpitation
	11	Cough, Haemoptysis, Cyanosis, Clubbing
	12	Pneumonia
	13	Influenza

### **IV Semester**

GIT	14	Anorexia, Nausea, Vomiting, Abdominal Pain, dysphagia
	15	Diarrhoea, Constipation, G.I. Bleeding
	16	Jaundice, Hepatomegaly
	17	Acute infectious diarrhoeal diseases - overview; Food poisoning and toxin mediated diarrhoea (Cholera); Traveller's diarrhea
	18	Shigellosis; EIEC; Amoebiasis; Giardiasis
	19	Enteric fever and Salmonella infections
	20	Worm infestations (Hookworm, roundworm, tapeworm, pinworm, Strongyloidiasis)
Renal, urinary tract	21	Urinary tract symptoms (Oliguria, anuria, dysuria, pyuria, hematuria, polyuria, nocturia, chyluria and enuresis)
	22	Ascites, Edema, Anasarca
	23	Urinary tract infections - etio-pathogenesis, types, clinical features, diagnosis and treatment
Hematology	24	Pallor, Bleeding, Thrombosis, Splenomegaly, Lymphadenopathy
Central nervous system	25	Headache (migraine), vertigo and dizziness
	26	Seizures, Syncope
	27	Motor and sensory disturbances
	28	Disturbances of consciousness, (brain death and organ donation)
	29	Rabies and other encephalitides (JE, HSV)
	30	Bacterial meningitis
Articular symptoms	31	Arthralgias, arthritis and myalgias; Chikungunya
Not classifiable into a particular system: ID	32	Malaria
	33	Haemorrhagic fevers (Dengue); Leptospirosis; Rickettsial infection
	34	Bacteremia, sepsis, SIRS, MODS, Septic shock
	35	Brucellosis, Plague, Anthrax
	36	Clostridial infections - Tetanus, gas gangrene, botulinum, CDAD
	37	Nosocomial infections
	38	Herpes zoster, EBV, CMV, HHV-8



Not classifiable into a particular system: ID	39	HIV - Definitions, transmission, epidemiology, clinical manifestations, diagnosis
	40	HIV and opportunistic infections
	41	Management of HIV/ AIDS
<b>V SEMESTER</b>		
Not classifiable into a particular system: ID	42	Common fungal infections (Candida, Aspergillus, Mucor, Cryptococcus)
	43	Filariasis; Leishmaniasis
	44	Hydatid disease; Toxoplasmosis
Not classifiable into a particular system: Envenoma	45	Stings and bites (Snake bite, scorpion sting and others)
	46	Poisoning - general principles; OP poisoning, Carbamate poisoning, Organochlorine poisoning
	47	Plant poisons (Yellow oleander, abrus, cleistanthus collinus and datura)
	48	Yellow phosphorus, Paraquat, Corrosives, Prescription drug poisoning
Not classifiable into a particular system: Environment	49	Heat related disorders; Radiation related disorders
	50	Drowning and electrical injuries
Nephrology: Few classes	51	Introduction; Presenting problems in renal diseases (Edema, hypertension, renal failure, hematuria, proteinuria)
	52	Glomerular disorders – overview; Nephritic syndrome – etiology, types, pathology, clinical features, diagnosis, treatment and complications.
	53	Nephrotic syndrome – causes, clinical features, diagnosis, complications and treatment.
	54	Tubular disorders, Ischemic Kidney Disease, Drugs and Toxin induced nephropathy.

## GENERAL SURGERY

Clinical presentation	Theory	Theory SDL	Practical
1. Nervous system	Trauma		Assessment
<b>2. Endocrine system</b>			
1. Thyroid	a. Approach to Goitre b. Thyroid dysfunction	Thyroid function test Interpretation	Clinical examination of Thyroid
2. Parathyroid	a. Hypocalcemia and Hypercalcemia	Investigations	
3. Breast	a. Approach to breast complaints b. Gynecomastia c. Investigations		Clinical examination of Breast
4. Adrenal mass	a. Presentation		
<b>3. Cardiovascular system Assessment</b>	a. Shock b. Approach to arterial disease c. Approach to venous diseases d. Approach to Lymphatic diseases e. Approach to cardiac trauma		Assessment of shock Clinical examination of Arterial disease Clinical examination of venous disease Clinical examination of lymphatic diseases
<b>4. Respiratory system</b>	Approach to Chest trauma		
<b>5. Gastrointestinal system</b>	a. Abdomen Pain b. Abdomen mass c. Weight changes d. Upper GI complaints a. Oral lesions b. Dysphagia c. Vomiting d. Bleeding e. Abdomen distension f. Upper abdomen pain e. <b>Lower GI complaints</b> a. Abdomen distension b. Abdomen pain c. Vomiting d. Constipation e. Diarrhoea f. Fecal incontinence g. Anorectal pain f. <b>Hepatobiliary and Portal</b> a. Hepatosplenomegaly b. Jaundice c. Liver function test	a. Gastric function tests b. Liver function test c. Pancreatic function test	Clinical examination of Acute abdomen Clinical examination of Chronic abdomen complaints Clinical examination of jaundice

<b>6. Renal and Urinary system</b>	<b>a. Upper urinary tract Symptomatology</b> a. Hematuria/pyuria b. Dysuria c. Flankpain d. Abdomenmass <b>b. Lower urinary tract symptomatology</b> a.Dysuria/Pain b.Hematuria/pyuria c.Urinary incontinence d.Urinary retention e.Ostructive and irritative symptoms f.Prostatomegaly		
<b>7. Male reproductive system</b>	a. Penile lesions b. Scrotum complaints		Clinical examination of Penile lesions Clinical examination of Scrotal mass
<b>8. Musculoskeletal system</b>	a. Soft tissue swelling b. Limb swelling c. Foot Infection		Clinical examination of Swelling Examination of Foot Infections
<b>9. Hematologic system</b>	Lymph node swelling		Clinical examination of lymph node
<b>10. Dermatologic system</b>	a. Swellings b. Ulcers c. Pigmentation abnormalities/ Colour changes/ skin changes		Clinical examination of Skin lesions
<b>11. General surgery</b>	Wound healing Infections Fluid balance Nutrition Preoperative care Post-operative care Blood transfusion		

**OBSTETRICS & GYNECOLOGY**  
**IV and V Semesters**

<b>1</b>	<b>Introduction</b>
Theory	Definition of Obstetrics, Epidemiology of Obstetrics,
Theory SDL	Importance of obstetrics
<b>2</b>	<b>Maternal and perinatal morbidity and mortality</b>
Theory	Causes Prevalence Rates
Theory SDL	Maternal mortality rate in India
<b>3</b>	<b>Fundamentals of reproduction</b>
Theory	Fertilization, Implantation
Theory SDL	Decidua
<b>4</b>	<b>Embryogenesis</b>
Theory	Stages of embryo development
Theory SDL	Pictorial representation of stages
<b>5</b>	<b>Factors influencing normal development</b>
Theory	Drugs Radiation Infections
Theory SDL	Environmental influences
<b>6</b>	<b>Development of fetus</b>
Theory	Fetal physiology Fetal circulation and changes at birth
Theory SDL	Abnormalities of fetal circulation
<b>7</b>	<b>Development of placenta</b>
Theory	Development Placenta circulation, function, ageing
Theory SDL	Umbilical cord
<b>8</b>	<b>Tutorial</b>
<b>9</b>	<b>Endocrinology of pregnancy</b>
Theory	Placental endocrinology Protein hormones
Theory SDL	Importance of various hormones
<b>10</b>	<b>Endocrinology of pregnancy</b>
Theory	Steroid hormones Changes of endocrine glands
Theory SDL	Maintenance of lactation
<b>11</b>	<b>Symptoms of pregnancy</b>
Theory	Trimesters-1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> Chronological appearance of symptoms of pregnancy Differential diagnosis Estimation of gestational age and prediction of expected date of delivery
Theory SDL	Different methods of estimation of gestational age

<b>12</b>	<b>Signs of pregnancy</b>
Theory	Trimesters-1 <sup>st</sup> ,2 <sup>nd</sup> ,3 <sup>rd</sup> Chronological appearance of signs of pregnancy Differential diagnosis Estimation of fetal weight
Theory SDL	Signs of previous childbirth
<b>13</b>	<b>Tutorial</b>
<b>14</b>	<b>Physiological and Emotional changes during pregnancy</b>
Theory	Genital organs Breasts Cutaneous changes Hematologic changes
Theory SDL	Importance of changes in pregnancy
<b>15</b>	<b>Physiological and Emotional changes during pregnancy</b>
Theory	Body and water metabolism Cardiovascular changes Metabolic changes Systemic changes
Theory SDL	Weight gain
<b>16</b>	<b>Diagnosis of pregnancy ( laboratory &amp; ultrasound )</b>
Theory	Urine/Blood -pregnancy Test Ultrasound - 1 <sup>st</sup> ,2 <sup>nd</sup> ,3 <sup>rd</sup> Trimesters
Theory SDL	False positive/negative urine pregnancy tests
<b>17</b>	<b>Theory test</b>
<b>18</b>	<b>Antenatal Care</b>
Theory	Procedure at first and subsequent visits Methods of obstetrical Examination
Theory SDL	Values of antenatal care
<b>19</b>	<b>Antenatal care 2</b>
Theory	Minor ailments in pregnancy Antenatal advice Preconceptional care
Theory SDL	Folic acid supplementation
<b>20</b>	<b>Antenatal care 3</b>
Theory	Clinical evaluation of fetal well being Special investigations Pregnancy assessment
Theory SDL	Antenatal counselling
<b>21</b>	<b>Tutorial</b>
<b>22</b>	<b>Nutrition in pregnancy</b>
Theory	Calories Daily requirement of Carbohydrates, Protein, Fats Micronutrients
Theory SDL	Sources of dietary iron
<b>23</b>	<b>Anatomy of normal labour</b>
Theory	Causes of onset of labour Contractile system of myometrium
Theory SDL	Pictorial representation of anatomical changes

<b>24</b>	<b>Physiology of normal labour</b>
Theory	Stages Events in labour Mechanism of normal labour
Theory SDL	<b>Labour video</b>
<b>25</b>	<b>Partogram</b>
Theory	Concept Uses Components Advantages
Theory SDL	WHO partogram
<b>26</b>	<b>Normal puerperium</b>
Theory	Involution of the uterus Lochia General physiologic changes lactation
Theory SDL	Menstruation and ovulation after delivery
<b>27</b>	<b>Tutorial</b>
<b>28</b>	<b>Family welfare programme</b>
Theory	Family planning infrastructure/organization Evolution of the programme Trends and Indian statistics
Theory SDL	Population policy
<b>29</b>	<b>Fertility control</b>
Theory	Contraception Introduction to various methods
Theory SDL	Reasons for fertility control
<b>30</b>	<b>Demography</b>
Theory	World population statistics National population policy Demographic changes
Theory SDL	Indian statistics
<b>31</b>	<b>Population dynamics.</b>
Theory	Terminology Population growth
Theory SDL	National rural health mission
<b>32</b>	<b>Theory test</b>

## PEDIATRICS

1.	<b>Introduction to Pediatrics</b>
	1.1 Definition of Pediatrics, differences between child and adult 1.2 Symptoms based approach to pediatrics (common symptoms related to CVS, RS,GIT) 1.3 Symptoms based approach to pediatrics (common symptoms related to renal, CNS, musculoskeletal systems) 1.4 Cardinal signs relevant to pediatrics (Pallor, Icterus, Cyanosis, Clubbing, Lymphadenopathy and Edema) 1.5 Vital signs: normative data in children 1.6 Recognition of a sick child
	Integrated management of neonatal and childhood illness
2	<b>Introduction to Neonatology</b>
	2.1 Definition of Neonatology and normal findings in a newborn 2.2 Gestational and birth weight based classification of neonates 2.3 Temperature regulation and feeding of neonates
SDL.	Community based interventions for the prevention of low birth weight babies
3	<b>Growth and development</b>
	3.1 Principles of growth and development and factors affecting growth and development 3.2 Key developmental milestones (gross motor, fine motor, cognitive, social and language) 3.3 Developmental delay- risk factors and assessment 3.4 Assessment of growth 3.5 Disorders of growth 3.6 Adolescent growth and development
SDL	Growth charts and their utilities
4	<b>Fluid and Electrolyte Homeostasis</b>
	4.1 Principles of fluid therapy in children 4.2 Regulation of acid base balance in children and disorders related to them 4.3 common electrolyte abnormalities in children and their management 4.4 Fluid management in special situations
SDL	Composition of different types of intravenous fluid preparation and their utility
5	<b>Nutrition</b>
	5.1 Basics of nutrition and nutritional requirements of children 5.2Principles of breast feeding and advantages 5.3 Impediments to breast feeding and their management 5.4 principles of complementary feeding 5.5 Fat soluble vitamins: Vitamin A and D- sources, deficiency features, toxicity and management 5.6 Fat soluble vitamins: Vitamin E and K- sources, deficiency features, toxicity and management 5.6 Water soluble vitamins: Thiamine, Riboflavin, Niacin, Pantothenic acid- source, deficiency features and management 5.7 Water soluble vitamins: Pyridoxine, Biotin, Folic acid, cyanacobalamin, vitamin C- source, deficiency features and management 5.8 Minerals and trace element deficiencies in children 5.9 Protein Energy Malnutrition – Definition, classification, clinical features, management strategies and prevention
SDL	Age independent anthropometric measures for detecting malnutrition in the community

### TOTAL TEACHING HOURS

	Subject Discipline	Theory	Practicals	Total
1	Microbiology	131	66	197
2	Pathology	131	65	196
3	Pharmacology	131	90	221
4	Forensic Medicine	136	84	220

### WEEKLY TIMETABLES FOR MBBS PHASE II

#### III SEMESTER (REGULAR) –JULY END-AUGUST TO DECEMBER

Days	8.00-9.00 AM	9.00-10.00 AM	10.00- 1.00 PM	2.00-3.00PM	3.00-4.30 PM
<b>Monday</b>	Forensic Medicine - 1 (Theory)	Pharmacology -1 (Theory)	Clinics/ Skills lab	Pathology - 1 (Theory)	<b>Pathology</b> Practicals <b>A,B</b> batch <b>Microbiology</b> Practicals <b>C, D</b> batch
<b>Tuesday</b>	Medicine (Theory)	Microbiology - 1 (Theory)	Clinics/ Skills lab	Community Medicine	
<b>Wednesday</b>	Forensic Medicine -2 (Theory)	Pathology – 2 (Theory)	Clinics/ Skills lab	Microbiology – 2 (Theory)	<b>Pathology</b> Practicals <b>C, D</b> batch <b>Microbiology</b> Practicals <b>A,B</b> batch
<b>Thursday</b>	Pathology -3 (Theory)	Community Medicine	Clinics/ Skills lab	<b>Time :- 02.00 PM to 3.15 PM</b> <b>Pathology</b> Practicals <b>A,B</b> batch <b>Forensic Medicine</b> Practicals <b>C, D</b> batch <b>Time :- 3.15 PM to 04.30 PM</b> <b>Pathology</b> Practicals <b>C,D</b> batch <b>Forensic Medicine</b> Practicals <b>A, B</b> batch	
<b>Friday</b>	Surgery (Theory)	Pharmacology -2 (Theory)	Clinics/ Skills lab	Pharmacology	
<b>Saturday</b>	Microbiology -3 (Theory)	Pharmacology – 3 (Theory)	Clinics/ Skills lab		



#### IV SEMESTER (REGULAR) – DECEMBER TO MAY

Days	8.00-9.00 AM	9.00-10.00 AM	10.00- 1.00 PM	2.00-3.00PM	3.00-4.30 PM
Monday	Pharmacology -1 (Theory)	Pathology -1 (Theory)	Clinics/ Skills lab	Microbiology-1 (Theory)	<b>Pathology</b> Practicals <b>A,B</b> batch <b>Microbiology</b> Practicals <b>C, D</b> batch
Tuesday	Paediatrics	Forensic Medicine - 1 (Theory)	Clinics/ Skills lab	Pathology – 2 (Theory)	Forensic Medicine - Practical
Wednesday	Obst & Gynae	Pharmacology – 2 (theory)	Clinics/ Skills lab	Pathology – 3 (theory)	<b>Pathology</b> Practical <b>C,D</b> batch <b>Microbiology</b> Practical <b>A, B</b> batch
Thursday	Medicine (Theory)	Community Medicine	Clinics/ Skills lab	Microbiology 2 (theory)	Community Medicine
Friday	Medicine	Pharmacology -3 (Theory)	Clinics/ Skills lab	Pharmacology	
Saturday	Surgery (Theory)	Microbiology – 3 (Theory)	Clinics/ Skills lab		

#### V SEMESTER (REGULAR) - MAY - DECEMBER

Days	8.00-9.00 AM	9.00-10.00 AM	10.00- 1.00 PM	2.00-3.00PM	3.00-4.30 PM
Monday	Surgery	Microbiology - 1(Theory)	Clinics/ Skills lab	Pharmacology	
Tuesday	Paediatrics	Forensic Med – 1(Theory)	Clinics/ Skills lab	Microbiology 2 (theory)	<b>Pathology</b> Practical <b>A,B</b> batch <b>Microbiology</b> Practical <b>C, D</b> batch
Wednesday	Obst & Gynae	Pharmacology – 1(Theory)	Clinics/ Skills lab	Forensic Medicine	
Thursday	Pharmacology – 2(Theory)	Community Medicine	Clinics/ Skills lab	Microbiology 3(theory)	Community Medicine
Friday	Medicine	Pharmacology – 3 (Theory)	Clinics/ Skills lab	Pathology 1(theory)	<b>Pathology</b> Practicals <b>C,D</b> batch <b>Microbiology</b> Practicals <b>A, B</b> batch
Saturday	Surgery	Pathology – 2(theory)	Clinics/ Skills lab		

## TIME TABLE FOR CLINICAL TRAINING OF III, IV & V SEMESTER

### CLINICAL POSTINGS OF III SEMESTER

Period	Surgery	OBGY	Medicine	Community Medicine
1 Month	A	B	D	C
1 Month	C	A	B	D
1 Month	D	C	A	B
1 Month	B	D	C	A

### CLINICAL POSTINGS OF IV & V SEMESTER

End	Batch A	Batch B	Batch C	Batch D
2 Weeks	Medicine	Surgery	Community M	Community M
2 Weeks	Medicine	Surgery	Community M	Community M
2 Weeks	Medicine	Surgery	OBG	Paediatrics
2 Weeks	Surgery	Medicine	OBG	Paediatrics
2 Weeks	Surgery	Medicine	OBG	Paediatrics
2 Weeks	Surgery	Medicine	OBG	Skin
2 Weeks	OBG	Paediatrics	Medicine	Surgery
2 Weeks	OBG	Paediatrics	Medicine	Surgery
2 Weeks	OBG	Paediatrics	Medicine	Surgery
2 Weeks	OBG	Ortho	Surgery	Medicine
2 Weeks	Skin	Ortho	Surgery	Medicine
2 Weeks	Anaesthesiology	Skin	Surgery	Medicine
2 Weeks	Community M	Community M	Anaesthesiology	OBG
2 Weeks	Community M	Community M	ID	OBG
2 Weeks	Paediatrics	Anaesthesiology	ID	OBG
2 Weeks	Paediatrics	ID	Ortho	OBG
2 Weeks	Paediatrics	ID	Ortho	Anaesthesiology
2 Weeks	ID	OBG	Paediatrics	Ortho
2 Weeks	ID	OBG	Paediatrics	Ortho
2 Weeks	Ortho	OBG	Paediatrics	ID
2 Weeks	Ortho	OBG	Skin	ID

### **III Semester – Clinical Training in the subjects of Medicine, Surgery & OG – content – first four months of intensive clinical posting in various departments.**

- 1. Communication skills development**
- 2. Bedside Manners**
- 3. History Recording of a patient**
- 4. Physical Examination of a patient**
- 5. Analysis of Symptoms and signs**
- 6. Diagnosis**

1. Communication skills development – Tamil Language teaching at bedside
2. Bedside Manners – How to behave in front of a patient, developing rapport with patient, getting consent for examination, learning empathy and sympathy
3. History Recording of a patient – Name, age, sex, address, occupation, Present illness, past illness, family pedigree, drug intake,
4. Physical Examination of a patient – Height, weight, BMI, vitals recording (pulse, blood pressure, temperature and respiratory rate), system examination-inspection, palpation, percussion and auscultation
5. Analysis of symptoms and signs – to identify the system involved and focus on the examination of the particular system in an algorithmic manner.
6. Arriving at a diagnosis using not a single physical sign but using multiple physical signs.
7. Learning to use clinical medicine tools – stethoscope, Torch light, tongue depressor, tuning fork, inch tape, knee hammer, trans illuminator, wearing gloves, proctoscopy.

#### **Clinical training in IV & V Semester**

1. Clinical case record maintenance
2. Clinical case presentation
3. OSCE
4. Learning about investigations
5. Interpretation of investigations
6. Learning algorithm of investigations for various disorders
7. Learning about various formulae used in clinical medicine

<b>II - PROFESSIONAL YEAR (Para-Clinical Subjects)</b>			
<b>Name of the Subject</b>	<b>Evaluation parameter</b>	<b>Maximum Marks</b>	<b>Passing minimum</b>
<b>Microbiology</b>	Written (2 Papers)	160	80
	Written including oral	180	90
	Practical	100	50
	Internal Assessment (Theory-40; Practical-30)	70	35
	<b>Overall (Total)</b>	<b>350</b>	<b>175</b>
<b>Pathology</b>	Written (2 Papers)	160	80
	Written including oral	180	90
	Practical	100	50
	Internal Assessment (Theory-40; Practical-30)	70	35
	<b>Overall (Total)</b>	<b>350</b>	<b>175</b>
<b>Pharmacology</b>	Written (2 Papers)	160	80
	Written including oral	180	90
	Practical	100	50
	Internal Assessment (Theory-40; Practical-30)	70	35
	<b>Overall (Total)</b>	<b>350</b>	<b>175</b>
<b>Forensic Medicine</b>	Written (1 Paper)	80	40
	Written including oral	100	50
	Practical	100	50
	Internal Assessment (Theory-20; Practical-20)	40	20
	<b>Overall (Total)</b>	<b>240</b>	<b>120</b>

#### **Eligibility to appear for examination**

**Attendance = 75 %**

**Internal Assessment Marks = 50%**

#### **Marks qualifying for pass**

50% in Theory

50% in Theory including Viva-Voce

50% in Practical

50% in Internal Assessment

50% in Total Aggregate

## **LEARNING RESOURCE MATERIALS**

### **MICROBIOLOGY**

#### **RECOMMENDED TEXTBOOKS**

1. Jawetz Melnick and Adelberg's Medical Microbiology, 2016, 27<sup>th</sup> edition , LANGE Publications
2. Ananthanarayan , Paniker and Arti Kapil's Textbook of Microbiology, 2013, 9<sup>th</sup> edition, University Press
3. Subhash Chandra Parija Textbook of Microbiology and Immunology, 2016, 3<sup>rd</sup> edition, Elsevier India
4. Subhash Chandra Parija Textbook of Medical Parasitology, 2013, 4<sup>th</sup> edition, All India Publishers New Delhi
5. Sastry Apurba Sankar Essentials of Medical Microbiology, 2016, 1<sup>st</sup> edition, JAYPEE BROTHERS Publishers
6. Mandell, Douglas and Bennett's Principles and Practice of Infectious Disease, vol 1 and 2, 2015, 8<sup>th</sup> edition, Elsevier

#### **REFERENCE TEXTBOOK**

1. Lynne S. Garcia, Diagnostic Medical Parasitology, 2016, 6<sup>th</sup> edition, Garland Science, Taylor and Francis Group
2. Peter J. Delves, Seamus J. Martin, Dennis R. Burton, Ivan M. Roitt Essential Immunology, 2016, 13<sup>th</sup> edition, Wiley- Blackwell publications
3. Jagdish Chander, Textbook of Medical Mycology, 2009, 3<sup>rd</sup> edition, Mehta publications
4. Kasper, Fauci, Hauser, Longo, Jameson, Loscalzo, Harrison's Principles of Internal Medicine, vol 1 and 2, 2015, 19<sup>th</sup> edition, McGraw Hill Publications
5. N.N Damani, Manual of Infection Control Procedures, 2004, 2<sup>nd</sup> edition, Cambridge University Press
6. Peter Lydyard, Michael Cole, John Holton, Will Irving, Nino Porakishvili, Pradhib Venkatesan, Kate Ward, Case Studies in Infectious Diseases, 2010, 1<sup>st</sup> edition, Garland Science, Taylor and Francis Group

## **PATHOLOGY**

### **BOOKS:**

1. Kumar V, Abbas A, Aster JC. Pathologic basis of disease: South Asia edition. 9 ed. Haryana: Elsevier; 2014.
2. Kumar V, Abbas A, Aster JC. Robbins Basic Pathology. 9 ed. Philadelphia: Elsevier ;2013.
3. Walter JB, Talbot IC. Walter and Israel General Pathology. 7 ed. Edinburgh; Elsevier ;1963
4. Cross SS. Underwood's Pathology: A clinical approach. 6 ed. China; Elsevier;2013
5. Singh T. Text and Practical Hematology for MBBS. New Delhi: APC Publications;2010.
6. Chaturvedi U, Singh T. Practical Pathology. 2 ed. New Delhi: Arya Publications;2015.

### **Online Resources:**

1. [www.pathologyoutlines.com/](http://www.pathologyoutlines.com/)
2. <http://www.webpathology.com>

## **PHARMACOLOGY**

1. Katzung BG, Trevor AJ, Master SB. Basic and clinical pharmacology. 13th ed. New York: Mc Graw Hill;2015.
2. Bennett PN, Brown MJ, Sharma P. Clinical pharmacology. 11th ed. Edinburgh: Churchill Livingstone;2012.
3. Trevor AJ, Katzung BG, Knudering-Hall M. Katzung & Trevor's Pharmacology examination and board review. 11th ed. New York:McGraw-Hill;2015.
4. Brenner GM, Stevens C. Pharmacology. 4th ed. Edinburgh: ChurchillLivingstone;2013.
5. Neal MJ. Medical Pharmacology at a glance. 8th ed. Oxford:Wiley-Blackwell;2016.
6. Whalen K. Lippincott Illustrated Reviews: Pharmacology. 6th ed. New Delhi: Wolters Kluwer (India); 2014.
7. Rang HP, Dale MM, Ritter JM, Flower RJ, Henderson G. Rang & Dale's Pharmacology. 8th ed. Edinburgh: ChurchillLivingstone;2015.
8. Papadakis MA, Mcphee SJ, Rabow MW. Current medical diagnosis and treatment 2017. 56th edition. New York: McGrawHill;2016.
9. Kasper DL, Fauci AS, Hauser SL, Longo DL, Jameson JL, Loscalzo J. Harrison's Principles of internal medicine. 19th ed. New York: Mc GrawHill;2015.
10. Bhat P, Dretler A, Gdowski M, Ramgopal R, Williams D. The Washington manual of medical therapeutics. 35<sup>th</sup> ed. New Delhi: Wolters Kluwer (India).2016.

## **A. FORENSIC MEDICINE**

### **LIST OF BOOKS**

1. Knight's Forensic Pathology Saukko & Knight 3rd Ed
2. Colour Atlas of Forensic Medicine A. Govindiah 2ndEd
3. The Essentials of Forensic Medicine &Toxicology K.S.Narayan Reddy 33rdEd
4. Textbook of Forensic Medicine &Toxicology V V Pillay 17thEd
5. Review of Forensic Medicine & Toxicology Gautam Biswas 3rdEd
6. Principle of Forensic Medicine & Toxicology Rajesh Bardale 1stEd
7. Textbook of Forensic Medicine &Toxicology Nagesh Kumar Rao 2ndEd
8. Modern Medical Toxicology VV Pillay 4th Ed
9. Textbook of Forensic Medicine &Toxicology KrishnanVij 6th Ed
10. Oral & Practical Examination Questions in ForensicMedicine D.Govindiah 1stEd
11. Practical Forensic Medicine Nagesh KumarRao 3rdEd
12. Textbook of Medical Jurisprudence, Forensic Medicine & Toxicology Parikh 7thEd
13. Modi A textbook of Medical Jurisprudence &Toxicology KKannanetal25thEd
14. Practical Aspect of Forensic Medicine RK Gorea et al 1stEd
15. Principles of Forensic Medicine including Toxicology Apurba Nandy 3rdEd
16. Lyon's Medical Jurisprudence and Toxicology Dogra,T.D 11thEd
17. Forensic Medicine & Toxicology: Theory, Oral and Practical Karmakar, R. L 5thEd
18. Forensic Medicine and Toxicology Ignatius, P.C2ndEd
19. Textbook of Forensic Medicine &Toxicology Anil Agarwal 1stEd

### **LIST OF JOURNALS**

1. Journal of Indian Academy of Forensic Medicine
2. Journal of Indian Society of Toxicology
3. Legal Medicine
4. Journal of Forensic and Legal Medicine
5. American Journal of Forensic Medicine and Pathology
6. Forensic Science International

## ESSENTIAL SKILLS LIST: LAB PROCEDURALSKILLS

### MICROBIOLOGY

S. No	Practical skill	Timing of Assessment
1	Performance and interpretation of Gram stain of direct and culture smears	Internal assessment and Final exam
2	Performance and interpretation of Albert stain for granules of <i>Corynebacterium diphtheria</i>	Internal assessment
3	Performance and interpretation of Kinyoun stain of sputum smears for AFB	Internal assessment and Final exam
4	Preparation and interpretation of wet mount of stool specimens for ova/cysts of parasites	Internal assessment and Final exam
5	Preparation of thick and thin smears of peripheral blood for malarial parasites	Formative assessment
6	Collection, transport and storage of samples for microbiological investigations	Formative assessment
7	Interpretation of culture and AST reports Choice of empirical therapy for different clinical syndromes	Internal assessment and final exam
8	Interpretation of common serological tests – Widal, VDRL/RPR, Weil-Felix. SAT for brucellosis, ASLO, CRP etc	Internal assessment and final exam
9	Principles of sterilization and biomedical waste management	Formative assessment
10	Principles of universal/airborne/contact precautions and other measures to control HAI	Internal assessment

### PATHOLOGY

- Be able to collect, store and transport materials for various pathological tests including histopathology, cytopathology, hemato pathology, Blood bank and clinical pathology in a proper manner.
- Describe accurately and arrive at a logical diagnosis of common macroscopic specimens (gross appearance) such as cirrhosis, gangrene, tumors etc. Interpret and arrive at a conclusive diagnosis in the microscopic analysis of common diseases like tuberculosis, carcinoma, acute inflammation etc.
- Perform with accuracy and reliability various hematological procedures such as Hemoglobin estimation, Total and differential leucocyte count, peripheral smear staining and reporting.
- Calculate red cell indices and interpret the significance
- Perform independently complete examination of urine and detect abnormal findings and interpret the results
- Perform independently grouping of blood.
- Be aware of the procedure for common tests like Bleeding time, Clotting time, ESR, PCV, bone marrow examination, semen analysis and interpret abnormal findings.
- Interpret abnormal laboratory (biochemical, hematological and serological) values of common diseases.
- Adopt universal precautions for self-protection against HIV and hepatitis



## PHARMACOLOGY

S. No	Skill
1	Loading the given amount of drug in the syringe
2	Administering the drug subcutaneously / intramuscularly / intravenously in the given model
3	Setting up of an intravenous infusion
4	Prescribing for common medical conditions that will be encountered by a general practitioner
5	Communicate effectively regarding the correct use, storage and disposal of medicines and devices like metered dose inhaler and spacer
6	Interpreting the results of therapeutic drug monitoring report
7	Critically appraise the drug promotional literature

## **FINAL EXIT EXAMINATION – RULES & REGULATIONS**

Final exit examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimum skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him/her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible. **Eligibility to appear for final exit examination for all the subjects include 75% attendance in theory, 75% attendance in practicals, 50% marks in theory internal assessment and 50% marks in practicals internal assessment, duly certified by the concerned department HOD/ Faculty In-charge of examinations from the department.**

The candidates who lacks eligible attendance and/ or internal assessment marks will be detained. The detained candidates in phase II has to improve the attendance and/or internal assessment by attending special classes/ notified tests within the period of next examination. Those candidates who fulfil the above said criteria alone will be permitted along with other candidates in the next examinations. Medical leave of absence of more than one month has to be certified by Medical board of JIPMER. Medical Leave more than three months, the candidate will be permitted to appear for examination.

Nature of questions will be structured essay, short answer type/objective type and marks for each part indicated separately.

Practical/clinical examinations will be conducted in the laboratories or hospital wards. The objective will be to assess proficiency and skill to conduct experiments, interpret data and form logical conclusion. Clinical cases kept in the examination must be common conditions that the student may encounter as a physician of first contact in the community. Rare syndromes and disorders are to be discouraged. Emphasis should be on candidate's capability in elicit a history demonstrate physical signs write a case record, analyze the case and develop a management plan.

Viva/oral includes assessment of management approach and handling of emergencies, ethical and professional values. Candidate's skill in interpretation of common investigative data, X-Rays, identification of specimens, ECG, etc. also is to be assessed.

**A student shall not be allowed to graduate later than 09 (nine) years of joining first MBBS course (Double the duration of the course). The candidate's name will be struck off from the roll if he/she did not complete the entire course within the stipulation mentioned (Double the duration of the course).**

## **Annexure- I – MODEL QUESTION PAPERS**

# **MICROBIOLOGY**

## **Paper - I**

**Time: Three Hours**

**Maximum Marks: 80**

**Each Section to be answered in separate answer book**

**Illustrate your answers with suitable diagrams**

### **SECTION A (Marks : 40)**

(General Microbiology and Immunology)

#### **I. Long questions**

**1X10=10**

A 17-year old student who has recently joined MBBS, came back to the hostel after the first vacation. After entering her hostel room, she suddenly developed an episode of severe sneezing, and dyspnea. She had to be admitted to the casualty and when asked, she gave a history of similar episodes since her childhood.

- a. What type of immune reaction is this? (3 marks)
- b. Describe the pathogenesis of this condition and management. (7 marks)

#### **II. Short notes**

**5X4=20**

- a. Bacterial cell wall- structure with labelled diagram
- b. Spaulding's classification of medical devices
- c. PCR-principle and application pertaining to diagnostic microbiology
- d. Automated blood culture system- types, principle, advantages over conventional system
- e. Monoclonal antibody- hybridoma technology, application

#### **III. Ultrashort notes**

**5X2=10**

- a. Selective media-definition with example
- b. Define minimal inhibitory concentration (MIC) of an antibiotic and name the methods of detection of MIC
- c. Differences between innate immunity and acquired immunity
- d. Subunit vaccines- Definition and examples
- e. Applications of immunochromatographic test

## SECTION B (Marks : 40)

(Blood Stream Infections, CVS Infections And Respiratory Infections)

### I. Long question

1X10=10

A 9-year-old boy was admitted with complaints of productive cough, chest pain, and shortness of breath for past 3 days. Clinical examination revealed dullness over left sixth intercostal space on percussion and crepitations and rales with reduced breath sounds over left sixth intercostal space on auscultation. Chest X-ray showed homogeneous ground glass opacification in the left lower lobe. His sputum was collected and subjected to microscopy (revealed Gram-positive cocci in pairs, lanceolate shaped) and culture (revealed alpha-hemolytic, carrom coin colonies).

#### Questions:

- What is your clinical and etiological diagnosis of these cases? (2 marks)
- What are pathogenesis and clinical manifestations of these conditions? (3 marks)
- Describe in detail about your approach for the laboratory diagnosis of this clinical condition? (3 marks)
- What are the treatment modalities for these clinical conditions? (2 marks)

### II. Short notes

5X4=20

- Laboratory diagnosis of infective endocarditis
- Laboratory diagnosis of cerebral malaria
- Infectious mononucleosis- clinical features and laboratory diagnosis
- Laboratory diagnosis of pulmonary tuberculosis
- Laboratory diagnosis of influenza

### III. Ultrashort notes

5X2=10

- What is atypical pneumonia?
- Standard agglutination test- For which clinical disease this test is done and its principle
- Criteria for diagnosis of Dengue haemorrhagic fever
- Diagnostic criteria for Catheter related blood stream infection
- Oriental sore- agent and vector

## **MICROBIOLOGY**

### **Paper - II**

**Time: Three Hours**

**Maximum Marks: 80**

**Each Section to be answered in separate answer book**

**Illustrate your answers with suitable diagrams**

#### **SECTION A (Marks : 40)**

(Gastrointestinal Infections, Liver, Genitourinary Infections, CNS Infections)

#### **I. Long question**

**1X10=10**

A 4-year-old boy developed severe watery diarrhea and vomiting. The stool collected has a rice water type of appearance. It was sent for bacteriological analysis.

- a. What is the probable etiological diagnosis of this condition? (2 marks)
- b. Describe in detail the pathogenesis of this condition. (4 marks)
- c. Add a note on its laboratory diagnosis. (4 marks)

#### **II. Short notes**

**5X4=20**

- a. Risk factors and laboratory diagnosis of antibiotic associated diarrhoea
- b. Laboratory diagnosis of hookworm infection
- c. Markers of hepatitis B infection
- d. Etiological agents and laboratory diagnosis of urinary tract infection
- e. VDRL test – principle , merits and demerits

#### **III. Ultrashort notes**

**5X2=10**

- a. Agents causing nongonococcal urethritis
- b. Differences between pyogenic and aseptic meningitis in the cerebrospinal fluid
- c. Triad of congenital rubella syndrome
- d. Neurocysticercosis- agents, infective form, mode of transmission
- e. National immunization schedule for polio

## SECTION B

(Skin and soft tissue infections, Hospital infection control and Miscellaneous microbiology)

### I. Long question

**1X10=10**

A 55-year-old male was admitted to the hospital with complaints of severe pain in the lateral aspect of his left calf and small amount of pus discharge from the site. On physical examination, the local area was found to be red, warm and tender. Pus was aspirated and was subjected to Gram stain (showed gram-positive cocci in clusters), culture on blood agar (showed golden yellow pigmented beta haemolytic colonies).

- What is the clinical diagnosis and its causative organism? (2 marks)
- Enumerate various agents producing similar clinical condition. (2 marks)
- List the infections caused by this organism. (2 marks)
- List the virulence factors of this organism. (2 marks)
- Briefly discuss the laboratory diagnosis. (2 marks)

### II. Short notes

**5X4=20**

- Recent change in 2016 biomedical waste management guidelines
- Virulence factors of *Bacillus anthracis*
- Clinical features and laboratory diagnosis of Melioidosis
- Prevention of surgical site infections
- Pathogenesis of gas gangrene, draw a neat labelled gram-stained morphology of *Clostridium perfringens*

### III. Ultrashort notes

**5X2=10**

- Enumerate the agents causing dermatophytosis
- Agents causing eumycotic mycetoma
- Five moments of hand hygiene
- India ink wet mount examination
- Parasitic agents causing ocular infection

# **PATHOLOGY**

## **PAPER - I**

**Time: Three Hours**

**Maximum Marks: 80**

**Each Section to be answered in separate answer book**

**Illustrate your answers with suitable diagrams**

### **SECTION A (Marks : 40)**

**(General Pathology)**

#### **I. Long question**

**1X10=10**

Define apoptosis with examples. Discuss the biochemical features and mechanisms of apoptosis  
(2+3+5=10 marks)

#### **II. Short answer questions**

**5X4=20**

- Explain the pathogenesis and mediators of Granulomatous inflammation
- Discuss the pathogenesis of edema in renal diseases
- Discuss the role of Human papilloma virus in carcinogenesis
- Discuss common causes and morphology of fatty liver
- Write briefly Pathogenesis of Type I hypersensitivity

#### **III. Very short answer questions**

**5X2=10**

- Write very briefly on the components of Virchow's triad
- What is the mechanism by which a patient with carcinoma lung develops Cushing syndrome?
- What is the morphological appearance and the clinical significance of Barrett esophagus?
- Name the biochemical abnormality and the classical morphological appearance of Gauchers disease?
- Enumerate the cardinal signs of acute inflammation

### **Section B**

**(Hematology, Transfusion Medicine and Reticuloendothelial system (Lymph Node, Spleen))**

#### **I. Long question**

**1X10=10**

A 20 year old engineering student presented with complaints of easy fatiguability, bleeding gums. No jaundice and organomegaly on examination. Routine hemogram showed Hb- 5gm/dl with normocytic normochromic anemia; Reticulocyte count – <0.2%. TLC of 2100/mm<sup>3</sup>, DLC shows N20 L77 E2 M1. No atypical cells and platelet count of 10,000/mm<sup>3</sup>.

- What is the most probable diagnosis? (1)
- What is the next investigation to be done to confirm the diagnosis and what are the findings expected? (4)
- What is the etiopathogenesis of this condition? (5)

#### **II. Short answer questions**

**5X4=20**

- Write briefly on the laboratory diagnosis of multiple myeloma
- Write briefly about pathophysiology of DIC
- Discuss the pathogenesis and morphology of Burkitt lymphoma
- Discuss the utility of ESR in clinical practice
- Discuss the types and indications of Coombs test

#### **III. Very short answer questions**

**5X2=10**

- A 20 week pregnant lady is evaluated for anemia. Hb 11gm%, RBC count – 6 million /mm<sup>3</sup> with MCV – 60 fl, MCH – 21, MCHC- 25 and RDW of 12. TLC and Platelet are normal. What is your diagnosis?
- Mention two causes of prolonged PT?
- What is Philadelphia Chromosome and in which condition it is seen?
- Define massive splenomegaly and gives two causes
- What is the pathogenesis of cerebral malaria in Plasmodium falciparum infection?



# **PATHOLOGY**

## **PAPER II**

**Time: Three Hours**

**Maximum Marks: 80**

**Each Section to be answered in separate answer book**

**Illustrate your answers with suitable diagrams**

### **SECTION A (Marks: 40)**

(Blood Vessels and CVS, Respiratory System, GIT, Hepatobiliary tract, CNS)

#### **I. Long question**

**1X10=10**

Describe the autopsy findings in lungs and heart in a 40 year old male with longstanding rheumatic heart disease with mitral stenosis (5+5 marks)

#### **II. Short answer questions**

**5X4=20**

- What are the macroscopic changes and complications seen in a case of bronchiectasis?
- Tabulate the differences in CSF findings between tuberculous and pyogenic meningitis.
- Explain the macroscopic and microscopic changes seen in alcoholic cirrhosis with a labeled diagram
- Discuss the morphological appearance of Primary pulmonary tuberculosis.
- Discuss the adenoma- carcinoma sequence pertaining to colonic cancer.

#### **III. Very short answer questions**

**5X2=10**

- Explain why smokers develop emphysema.
- A 10 year old boy, known thalassemia develops gall stones. Mention the reason and the gross appearance of gall stones
- Explain the term "Interface hepatitis".
- Explain the basis of treebark appearance seen in syphilitic aneurysm.
- Briefly enumerate the etiology of chronic pancreatitis.

### **Section B**

(Renal, Male and female reproductive system, Breast, Endocrine, Musculoskeletal system, and Skin)

#### **I. Long question**

**1X10=10**

A 35 year old male presents with painless enlargement and heaviness of the right testis since 2 months. Ultrasound showed a hypoechoic and homogenous mass in the right testis. (4+4+2)

- Discuss the investigations you would like to do to arrive at a diagnosis.
- How are testicular tumors classified broadly?
- Discuss the clinical relevance of this classification of testicular tumors.

#### **II. Short answer questions**

**5X4=20**

- A 45 year old male presents with a swelling over the right knee joint of three months duration. X-Ray reveals an expansile lytic lesion, predominantly in the epiphyseal region of right lower femur without any cortical breach. (2+2)
  - What is the likely diagnosis and why?
  - Explain with a labeled diagram, the likely histological features of this condition.
- Discuss the etiopathogenesis and urinary findings in post streptococcal glomerulonephritis.
- Discuss the gross and microscopic appearance (with a diagram) of hydatid form mole.
- Discuss the etiopathogenesis of multinodular goitre.
- Explain the molecular basis of classification of Carcinoma breast.

#### **III. Very short answer questions**

**5X2=10**

- Discuss briefly the genetic basis of Ewing sarcoma
- Describe two histological features seen in papillary carcinoma thyroid
- Write the risk factors for endometrial carcinoma
- Mention the light microscopic and ultrastructural findings in minimal change disease of kidney
- What are Virchows cells and in which disease are they seen?

# **PHARMACOLOGY**

## **PAPER - I**

**Time: Three Hours**

**Maximum Marks: 80**

**Each Section to be answered in separate answer book**

**Illustrate your answers with suitable diagrams**

### **SECTION A** (General Pharmacology and CNS)

#### **I. Long Answer Question**

1. A 26 year old man experiences frequent (twice in a month) episodes of sudden unconsciousness and jerking movement of extremities for 2 minutes. After this he regains consciousness but is confused. He is diagnosed to have epilepsy (generalised tonic clonic seizures).
  - a. List the first line antiepileptics for this patient and explain the mechanism of action of any one. (1+2)
  - b. What are the adverse effects that are common to many antiepileptics? (2)
  - c. If this patient is started on a first line agent, dose slowly titrated over two years to a maximum but still uncontrolled, should he be switched to combination therapy? Justify with reason(s). (2)
  - d. Name two antiepileptics that are first line drugs for many types of seizure and mention the types of seizure for which they are effective. Why are they effective against a wide range of seizures? (1+2)

#### **II. Short Answer Questions**

2. **Write short notes for the following:** 5 x 4 = 20
  - a. Explain the clinical implications of a drug possessing high volume of distribution.
  - b. Differentiate first order and zero order drug elimination with an example. Why should a treating physician be aware of the order of elimination of the drug prescribed?
  - c. Explain the rationale for therapeutic drug monitoring.
  - d. Explain the mechanism of action and adverse effects of opioids.
  - e. Explain the pharmacological basis for using selective serotonin reuptake inhibitors in depression

#### **III. Very Short Answer Questions**

3. **Explain the reasons for the following** 5 x 2 = 10
  - a. Even though both benzodiazepines and barbiturates act on the same receptors, barbiturates have less margin of safety than benzodiazepines,
  - b. Antipsychotics can cause parkinsonism.
  - c. Adrenaline is combined with lignocaine.
  - d. Sevoflurane is close to an ideal anaesthetic.
  - e. Ethyl alcohol is used in methyl alcohol poisoning.

## **SECTION B** (Chemotherapy and GIT)

### **IV. Long Answer Question**

4. A 36 year old man weighing 50 kg presents with evening rise of temperature, cough with expectoration and weight loss for the past one month. Sputum microscopy reveals acid fast bacilli and chest radiography shows cavitory lesions. (3 + 3 + 3 + 1 = 10)
- Explain the treatment for this patient according to the national programme.
  - If this patient becomes a defaulter during therapy and later presents after one year how should he be treated?
  - List three serious adverse effects of this therapy and mention ways to prevent / reduce each of them.
  - Mention briefly the mechanism of action of any one first line agent for this disease.

### **V. Short Answer Questions**

5. Write short notes for the following 5 x 4 = 20
- Explain the pharmacological basis for once a day aminoglycoside therapy.
  - Explain the treatment of chloroquine resistant falciparum malaria.
  - Explain the rationale for each constituent of oral rehydration salt
  - Explain the mechanism of action, uses and adverse effects of bisacodyl.
  - Differentiate the mechanism of action of alkylating agents and antimetabolites. Why anticancer agents are administered in cycles with intervening periods of no treatment?

### **VI. Very Short Answer Questions**

6. Explain the reasons for the following 5 x 2 = 10
- The actions of penicillin and aminoglycosides are synergistic.
  - Fluoroquinolones should be used with caution in children.
  - Neomycin is used only as a topical agent.
  - Proton pump inhibitors should not be coadministered with any other acid suppressing agent.
  - Prokinetic agents can hasten the onset of action of coadministered drugs.

# **PHARMACOLOGY**

## **PAPER - II**

**Time: Three Hours**

**Maximum Marks: 80**

**Each Section to be answered in separate answer book**

**Illustrate your answers with suitable diagrams**

### **SECTION A** (Endocrines, Cardiovascular system and Blood)

#### **I. Long Answer Question**

1. A 10 year old boy presents with weight loss despite increased appetite. He has polyuria and polydipsia. His fasting blood glucose is 170 mg/dL and 2 hour postprandial glucose is 250 mg/dL.
  - a. What is the drug of choice for this patient? Justify with reason(s). ( $\frac{1}{2}+1\frac{1}{2}$ )
  - b. Describe the principles / steps to be followed while initiating therapy with this drug.(3)
  - c. What are the glycemic goals of therapy in this patient? (2)
  - d. Differentiate insulin analogs and incretin analogs with an example for each. (3)

#### **II. Short Answer Questions**

2. **Write short notes for the following:** 5 x 4 = 20
  - a. Explain the mechanism of action and uses of loop diuretics
  - b. Explain the treatment of acute myocardial infarction
  - c. Differentiate unfractionated heparin and low molecular weight heparin. What are the clinical implications of these differences?
  - d. Explain the mechanism of action and uses of low dose combined oral contraceptive pills.
  - e. Explain the treatment of hypertensive emergencies

#### **III. Very Short Answer Questions**

3. **Explain the reasons for the following** 5 x 2 = 10
  - a. Angiotensin converting enzyme inhibitors can cause hyperkalemia.
  - b. Oral iron is always administered as ferrous salts and not in ferric form.
  - c. Low dose aspirin is used for antiplatelet action.
  - d. Patients on nitrates require eight hour drug free interval.
  - e. Levothyroxine ( $T_4$ ) is preferred over triiodothyronine ( $T_3$ ) for hypothyroidism.

## **SECTION B**

(Respiratory system, Autonomic nervous system, Autacoids & their antagonists, therapy of common poisoning and heavy metal antagonists)

### **IV. Long Answer Questions**

4. A 30 year old lady presents with repeated attacks (5 times a month) of unilateral throbbing headache with vomiting and photophobia lasting for 8 to 10 hours for the past 6 months. Her neurological examination is normal and is diagnosed to have migraine.

- a. Which group of drugs is effective in relieving moderate to severe attacks in this patient? Explain how it relieves a acute attack. ( $\frac{1}{2}+1\frac{1}{2}$ )
- b. Explain the rationale / lack of rationale for the use of the combination, ergotamine with caffeine in migraine. (2)
- c. State the criteria for initiating prophylactic drug therapy in migraine. How long the prophylaxis should be continued? (1+1)
- d. List four drugs (belonging to different class) that are effective for prophylaxis in this patient and explain how they reduce the frequency of attacks. (4)

### **V. Short Answer Questions**

#### **5. Write short notes for the following**

5 x 4 = 20

- a. Explain the uses and adverse effects of beta blockers.
- b. Explain the treatment of acute severe asthma (status asthmaticus).
- c. Mention the first line agents for chronic open angle glaucoma. Explain the rationale fr each.
- d. Explain the mechanism of action and uses of dimercaprol.
- e. Explain the treatment of organophosphorus poisoning.

### **VI. Very Short Answer Questions**

#### **6. Explain the reasons for the following**

5 x 2 = 10

- a. Adrenaline is the drug of choice for anaphylactic shock.
- b. Anticholinergics should be used with caution in elderly.
- c. Saline gargling is advised after inhaled corticosteroids.
- d. Mast cell stabilisers are not effective for an acute attack of asthma.
- e. N acetyl cysteine is used in paracetamol poisoning.

# **FORENSIC MEDICINE & TOXICOLOGY**

## **Paper - I**

**Time: Three Hours**

**Maximum Marks: 80**

**Each Section to be answered in separate answer book**

**Illustrate your answers with suitable diagrams**

### **SECTION A (Marks : 40)**

**(Forensic Pathology, Clinical Forensic Medicine)**

#### **I. Long question**

**1X10=10**

A forty year old male was found dead in the bushes. The police took custody of the corpse and sent for medico legal autopsy. Enumerate the various methods of assessing the time since death. Explain how time since death can be estimated with core temperature of the corpse and the various factors affecting this method of time estimation

**(5+5)**

#### **I. Short answer questions**

**5X4=20**

- Explain the mechanism of skull fracture. What are the various skull fractures that can be caused due to gun-shot injury to skull? **(2+3)**
- A four month old baby was physically abused by his/her step mother. One fine day she had violently shaken the baby and the child became unconscious. The child was brought to the hospital for treatment. What are the findings in the baby that will give clues of abuse to the treating doctor? **(5)**
- A pregnant woman, with 20 week gestation, belonging to low socio economic status came to OPD for medical termination of pregnancy. What is the act that regulates the termination of pregnancy? Explain the rules of the act and the punishments for non-compliance. **(1+4)**
- A person found dead near to the beach due to drowning. What are the types of drowning? What is the pathophysiology of death in above mentioned case? **(1+4)**

#### **II. Very short answer questions**

**5X2=10**

- What is suspended animation?
- What is corpus delicti?
- What is café coronary?
- Draw labeled diagram of the entry wound of rifled firearm, fired from close range.
- What is acid phosphatase test?

### **Section B (Marks : 40)**

**(Medical Jurisprudence, Forensic Psychiatry, Forensic Toxicology)**

#### **I. Long question**

**1X10=10**

A 45 year old male suffering from paranoid schizophrenia was found wandering in the street. Due to his mental defect he assaulted a police officer during enquiry. What is the procedure to restrain him? Explain the legal tests that will protect him from legal action by the police

**(4+6)**

#### **II. Short answer questions**

**5X4=20**

- A 16 year old boy was working in an oil mill. During the castor oil extraction process he accidentally consumed the left over cake from the seeds. He became sick and was admitted to the hospital. What is the active principle, mechanism of action and clinical features of this poison?
- What is professional misconduct? What is the procedure for punishing the Doctor for professional misconduct?
- What is the consent? What are the rules of obtaining informed consent?
- What is the treatment for removal of unabsorbed poison?

#### **III. Very short answer questions**

**5X2=10**

- What is therapeutic privilege?
- Enlist the conditions where magistrate inquest is conducted.
- What is testamentary capacity?
- What are various preparations of cannabis and its active principle
- What are the clinical features of chronic lead poisoning?