Anatomy

1. Academic year starts from 1st August.
2. First internal exam should be held between 16 to 31st January.
3. Preliminary examinations to be held between 15th to 30th May / November.

A. Syllabus for term wise

1st term – 3 minor and 1 Major part. (Lower Limb, Upper limb, Thorax, Abdomen), General Anatomy, General Embryology, General Histology.

2nd term- Head & Neck, Brain and Genetics.

Syllabus for Genetics – Chromosomal Anomalies, Karyotyping, Down's Syndrome, Klinfelter's Syndrome, Turner's Syndrome, Genetic Counselling, Mutation, Inheritance, Amniocentesis, RH incompatibility, Prenatal Diagnosis, Translocation, Lyon's Hypothesis

B. Internal Examinations

First Internal Theory Paper Scheme

Time: 3 hrs **Total- 50 marks**

Q.1	Write short notes	09marks
	A. Or A. (General Anatomy)	
	B. Or B.(General & Systemic histology)	
	C. Or C. (General & Systemic embryology)	
Q.2	Write short notes (Upper Limb) (2 Out of 3)	06 marks
Q.3	Write short notes (Lower Limb) (2 Out of 3)	06 marks
Q.4	Write short notes (Thorax) (2 Out of 3)	06 marks
Q.5	Write short notes (Abdomen/ H&N) (4 Out of 5)	12 marks
Q.6	M.C.Q.	05 marks
	(UL-1, LL-1, TH-1, ABD/H&N-2, GE-1, SE-1, GH-1, SH-1, GA-1)	
Q.7	Give Anatomical or Embryological basis of following conditions	06 marks
	(UL-1, LL-1, TH-2, ABD/H&N-2, GA-1) (6 out of 7)	

Practical Scheme

Total marks- 50

Table-1: Soft part	15 marks
Table-2: Hard part and embryology	15 marks
Table-3: Histology	10 marks
Table-4: Surface anatomy & X-ray	(5+5) 10 marks

Distribution of Internal marks (Total 40 Marks)

Existing Pattern of examination	**Internal theory (20)**	**Internal practical (20)**
1st Internal Examination	**5**	**5**
Preliminary Examination	**7.5**	**7.5**
Day to Day Evaluation	**7.5**	**7.5**
Subdivision of Day to Day Evaluation		
Part Ending Examination	6	6
Journal of Students Gross Journal (minimum 20 Figures)	1.5	00
Histology Journal (minimum 5 Questions)	00	1.5

Preliminary and University examination

Practical Scheme **Total marks- 60**

Table-1: Soft part (2 EXAMINERS)	20 marks
Table-2: Hard part and embryology (2 EXAMINERS)	20 marks
Table-3: Histology (1 EXAMINER)	10 marks
Table-4: Surface anatomy & X-ray (1 EXAMINER)	(5+5) 10 marks

Preliminary and University theory examinations scheme:

Duration: 3 Hrs **Total Marks- 50**

Paper – I (General Anatomy, General histology, General Embryology, Upper Limb, Neuro-anatomy, Head & Neck and related systemic embryology)

Section – I

Q-1	Applied Anatomy of topics Covered in Paper-I	Two short notes out of three	2 x 5 marks = 10 ma
Q-2	(a) Neuro anatomy	Two short notes out of three	2 x 3 marks = 6 marks
	(b) Systemic Histology of Head, Neck & Neuroanatomy	One short notes out of two	1 x 3 marks = 3 marks
Q-3	(a) General Anatomy	One short notes out of two	1 x 3 marks = 3 marks
	(b) General Embryology	One short notes out of two	1 x 3 marks = 3 marks
			25 marks

Section – II

Q-4	Head & Neck	Two short notes out of three	2 x 5 marks = 10 marks
Q-5	(a) Upper Limb	Two short notes out of three	2 x 3 marks = 6 marks
	(b) Systemic Embryology of Head & Neck, & Neuroanatomy	One short notes out of two	1 x 3 marks = 3 marks
Q-6	Objectives from Head & neck, Neuroanatomy & Upper limb	Six out of eight	6 x 1 marks = 6 marks
			25 marks

Paper – II (Family welfare, all Systemic histology, Genetics, Lower Limb, Thorax, Abdomen, Pelvis, Perineum and related embryology)

Section – I

Q-1	Applied Anatomy of topics covered in Paper-II	Two short notes out of three	2 x 5 marks = 10 marks
Q-2	(a) Thorax	Two short notes out of three	2 x 3 marks = 6 marks
	(b) Systemic Histology of Abdomen, and Thorax	One short notes out of two	1 x 3 marks = 3 marks
Q-3	(a) Genetics	One short notes out of two	1 x 3 marks = 3 marks
	(b) Family welfare	One short notes out of two	1 x 3 marks = 3 marks
			25 marks

Section – II

Q-4	Abdomen, Pelvis and Perineum	Two short notes out of three	2 x 5 marks = 10 marks
Q-5	(a) Lower Limb	Two short notes out of three	2 x 3 marks = 6 marks
	(b) Systemic Embryology of Abdomen & Thorax	One short notes out of two	1 x 3 marks = 3 marks
Q-6	Objectives from Abdomen, Pelvis, Perineum & Lower Limb	Six out of eight	6 x 1 marks = 6 marks
			25 marks

Physiology

<table>
<tr><td>Common Dates for Internal Examination</td><td colspan="2"><u>For Regular Batch</u>
First Internal
16th – 31st January Every Year
Preliminary Examination
16th – 30 May Every Year
<u>For Repeater Batch</u>
16th – 30 November Every Year</td></tr>
<tr><td>Common Syllabus Term wise distribution</td><td colspan="2">Term I (1st August -31st January)
1. General Physiology, BioPhysics,
2. Blood
3. Excretory System including skin,
4. Respiratory System including Environmental and Exercise Physiology
5. Cardiovascular System
6. Gastrointestinal System
7. Autonomic Nervous System
8. Nerve & Muscle Physiology
Tem II (1st Feb-31st July)
1. Endocrinology
2. Reproductive System
3. Special Senses
4. Central Nervous System
See Annexure I for Detail Syllabus</td></tr>
<tr><td>Prepare Uniform Exam Pattern</td><td colspan="2"></td></tr>
<tr><td rowspan="2">First Internal Examination</td><td>Theory Examination
(50 Marks- 3 Hours)</td><td>Practical Examination
(50 Marks – 3 Hours)</td></tr>
<tr><td>See AnnexureII for Paper Style</td><td>See Annexure III for Distribution of Marks</td></tr>
<tr><td>Preliminary (Second Internal) Examination</td><td>Theory Examination consists of Paper I and Paper II having 50 Marks each - 3 Hours duration</td><td>Practical Examination
(60 Marks – 3 Hours)</td></tr>
<tr><td></td><td><u>Topics Covered in Paper I</u>
1. General Physiology, BioPhysics
2. Blood
3. Excretory System including Skin and Body Temperature Regulation
4. Respiratory System including Environmental and Exercise Physiology
5. Cardiovascular System
<u>Topics Covered in Paper II</u>
1. Nerve & Muscle Physiology
2. Special Senses
3. Gastrointestinal Physiology
4. Endocrinology</td><td>See Annexure V for Distribution of Marks</td></tr>
</table>

	5. Reproductive System 6. Central Nervous System including Autonomic Nervous System **See Annexure IV for Paper Style**	
Task 4 Prepare Internal marking system	**It is as per the old system of the Gujarat University** **See Annexure VII**	

ANNEXURE I

GOAL

The broad goal of the teaching of undergraduate students in physiology AIMS at providing the student comprehensive knowledge of normal functions of the organ system of the body and to facilitate understanding of physiological basis of health and disease.

OBJECTIVE

(A)KNOWLEDGE: - At the end of the course the student shall be able to (1) Understand the normal functions of all organ system and their interactions. (2) Assess relative contributions of each organ system in maintenance of milieu interior. (3) Describe physiological response and adaptations to environmental stress. (4) List the physiological principles underlying pathogenesis and treatment of diseases.

(B)SKILL: - At the end of the course the student shall be able to (1) Conduct experiment/investigations designed for study of physiological phenomenon. (2) To interpret expt /investigations data and, (3) To distinguish between normal and abnormal data derived as result of test done in lab.

(C)INTEGRATION: - At the end of the course student shall be able to acquire an integrated knowledge of organ, structure, function, and its regulatory mechanism and apply the knowledge in understanding of disease and its treatment.

TOTAL WORKING HOURS: - 480 Hours (240Hours/Terms)

General Physiology:-

- Cell physiology
- Body Fluid Compartments
- Transport across cell membrane
- Homeostasis & stress
- Action Potential
- Apoptosis

BIOPHYSICS :-

- Principles of biophysics and its applied aspects – Osmosis, Diffusion, Biopotentials and its applied aspects & Resting membrane Potential

ENVIRONMENTAL, REGULATORY & EXERCISE PHYSIOLOGY:-

- Physiology of exercise & yoga
- Physiology of High altitude and Acclimatization &

- Effect of High atmospheric pressure
- Aviation and Space physiology &
- Deep sea physiology and other hyperbaric condition

BLOOD :-

- Composition and function of blood
- Plasma proteins
- RBC – functions of RBC, Erythropoiesis & factors affecting it
- Haemoglobin&Haemoglobinopathies
- Anaemias
- WBC – Development and functions
- Platelets, Blood coagulation disorders
- Mechanism of Haemostasis, Jaundice
- Blood Groups / Blood Transfusion/Blood volume
- Immunity
- R.E. system & Lymphatic system

EXCRETION :-

- Structure, blood supply & functions of kidney
- Mechanism of filtration & GFR
- Mechanism of Tubular Transport, Tubular function & Tm, Splay
- Mech of urine formation & Concentration of urine,
- Counter current mechanism & Sodium- Potasium Reabsorption, Acid Base Balance
- Micturition & its control, Cystometro gram
- Renal function tests & pathogenesis of renal disorders
- Functions of skin & Regulation of body temperature,
- Hypo & Hyperthermia
- Water balance, dialysis and Applied physiology
- Tissue fluid formation, oedema

MUSCLE NERVE :-

- Structure, Functions and classification of Neurons
- Origin & transmission of impulse in nerve fiber, Types of nerves & Properties of Nerve fiber
- Degeneration & Regeneration in nerve, reaction of degeneration.
- Structure and functions of skeletal muscle & smooth muscle
- Properties of skeletal muscle& generation of potentials
- Properties of smooth muscle & Transmission along cell membrane
- Mechanism of muscle contraction of skeletal & smooth muscle
- Neuromuscular junction Transmission of impulse along NMJ
- Myasthenia gravis and neurotransmitters, Neuromuscular blocking agents , Applied Physiology Related to Neuromuscular Junction

RESPIRATORY SYSTEM :-

- Structure of Respiratory tract & functions of respiratory system
- Non –Respiratory functions of lung.
- Mechanism of Breathing
- Mechanics of Pressure changes (intrapulmonary, intrapleural, transpulmonary) with respiration
- Pulmonary Surfactant& Lung volume & capacities
- Pulmonary ventilation & V/P ratio &Lung Compliance
- Pulmonary circulation
- Diffusion and transport of oxygen, O2-Hb Dissociation curve
- Diffusion and transport of carbon dioxide, CO2-Hb Dissociation curve

- Regulation of respiration
- Hypoxia, Asphyxia and Cyanosis
- Periodic Breathing

DIGESTIVE SYSTEM :-

- Physiological Anatomy of GIT
- Digestive tract and functions of salivary glands
- Composition, function & mechanism of secretion of saliva& its regulation, Deglutition
- Anatomy of stomach, Composition, function & mechanism of secretion of gastric juice& its regulation,
- Hypochlorhydria, hyperchlorhydria, peptic & duodenal ulcer; their correlation with stress.
- Composition, functions & mechanism of secretion of pancreatic juices& its regulation
- Composition, functions & mechanism of secretion of bile& its regulation
- Composition, functions& mechanism of secretion of success entericus & its regulation
- Functions of large intestine
- Functions of liver
- Movements of alimentary canal
- Digestion & absorption of various food stuff

C.V.S.:-

- Structure & properties of cardiac muscle
- Generation of action potential & transmission of cardiac impulse through conductive system in heart
- Cardiac cycle, Volume and pressure changes, correlation with ECG & Phonocardiogram.
- Heart sounds and murmurs
- ECG
- Hemodynamic
- Heart rate and its control, various arrhythmias, heart blocks
- Cardiac output & its control
- Arterial B.P. & its control, Hypertension & Hypotension
- Physiology of coronary circulation
- Other Regional circulation
- Physiological basis of shock

ENDOCRINE :-

- General considerations of endocrine system, Mechanism of Action of hormones
- Names, synthesis, actions, control of secretion, function tests & disorders of hormones of anterior & posterior Pituitary gland.
- Thyroid gland& its Disorders.
- Parathyroid gland& its Disorders.
- Adrenal cortex& its Disorders.
- Adrenal medulla& its Disorders.
- Pancreatic Hormones, Diabetes mellitus & Diabetes insitidus
- Thymus, pineal and local hormones
- Applied Physiology of endocrine

REPRODUCTION:-

- Growth & Development of body, influence of various hormones
- Puberty in male & female
- Male reproductive system & functions of testes its disorders
- Reproductive cycles in female & its disorders
- Physiology of pregnancy
- Placenta & its hormones
- Parturition & physiology of lactation

- Pathogenesis & treatment of gonad disorders in males & females
- Contraceptives & Infertility in detail
- Physiology of Newborn, Respiratory distress syndrome, CirculatoryChanges

ANS & CNS

- General considerations of CNS & ANS
- Autonomic nervous system, functions of Adrenal medulla
- Structure & properties of synapse and synaptic transmission
- Receptors, their functions & their properties, Neurotransmitters
- Reflexes, Reflex action and their properties
- Stretch reflex including Muscle spindle & Golgi tendon organ
- Physiology of pain
- Tracts of spinal cord - Ascending & Descending tracts, their functions
- Effects of hemi section and complete transaction of spinal cord,
- Physiology of sleep with their disorders, E.E.G.
- Functions of C.S.F. and lumbar puncture, cerebral circulation,
- Blood brain barrier
  Normal functioning of the following parts of the brain, their disorders And an outline of treatment
- Cerebral cortex- motor cortex, cortico spindal tract prefrontal lobe & its lesions
- Hypothalamus
- Thalamus
- Reticular formation
- Limbic system
- Basal Ganglia
- Cerebellum
- Vestibular Apparatus & semicircular canals,
- Muscle Tone & gait & Postural Reflex & Equilibrium
- Conditioned Reflex, Brain stem & its lesion
- Higher Functions – Speech & its disorders , Memory, Learning

SPECIAL SENSES

- Anatomy Functions of External ear, Middle ear and cochlea (inner ear)
- Organ of corti, Mechanism of hearing and endocochlear potentials (electrophysiology of Hearing)&Auditory pathway, Vestibular Apparatus
- Physiology of smell & olfactory pathway
- Physiology of taste
- Various parts of eyeball and their functions
- Refractive media and optics
- Errors of refraction
- Accommodation in eye
- Photochemistry of vision& neural connections of retina
- Acuity & field of vision with disorders
- Colour vision and colour blindness
- Dark & light adaptation, monocular and binocular vision
- Visual pathway and lesions at different levels

PRACTICALS

General Practicals:	
1	Study of appliances - Experimental instruments
2	Study of appliances - Hematology and clinical instruments
3	Study of appliances - Compound microscope
HaematologyPracticals:	
1	Estimation of Haemoglobin
2	Total white cell count
3	Total red cell count
4	Cells in peripheral blood film
5	Differential WBC count
6	Absolute count
7	Packed cell volume & Erythrocyte sedimentation rate**Only Demonstration**
8	Blood indices and related calculation
9	Blood grouping
10	Coagulation - B.T.& C.T.
11	Effect of tonicity of saline, fragility :**Only Demonstration**
Clinical Physiology Practicals:	
1	Radial pulse
2	Arterial blood pressure
3	Cardiac efficiency tests
4	Clinical examination in general
5	Clinical examination of Cardiovascular system
6	Clinical examination of Respiratory system
7	Artificial respiration and Cardio pulmonary resuscitation
8	Spirometry
9	Respiratory efficiency tests
10	Examinations of sensory functions
11	Examinations of motor functions
12	Examinations of reflexes
13	Examinations of cranial nerves – I,III,IV,V,VI
14	Examinations of cranial nerves – II
15	Examinations of cranial nerves – VII,VIII, IX.X.XI,XII
16	Clinical examinations of abdomen
17	Thermometry
18	Ergography
19	Endocrine disorder photographs
20	O_2 and CO_2 dissociation curve

21	ECG
22	EEG- EMG **Only Demonstration**
23	Contraceptives, menstrual cycle and BBT
24	GTT- GFT
25	Excretory system –Cystometrogram, Renal function tests
26	Stethography **Only Demonstration**
	Experimental Physiology
1	Gastrocnemius muscle, sciatic nerve preparation
2	Simple muscle curve,
3	Effect of temperature on SMC
4	Effect of load on SMC
5	Effect of two successive stimuli
6	Genesis of tetanus
7	Phenomenon of Fatigue
8	Velocity of nerve impulse
9	Perfusion of amphibian heart
10	Frog's heart beat & Effect of temperature on frog's heart
11	Properties of cardiac muscle
12	Effect of vagus, crescent stimulation and vagal escape.
13	Effect of drugs & ions on frog's heart
14	Quantal summation & Strength duration curve

Anexure I I

First Internal Theory Examination Physiology

Max Marks: 50

SECTION I

Q.1 Write Briefly on. (Any Two/ Three) :**ANS/Gen Physio /RS/Blood** **10**

Q.2 (A) Write Briefly on (Any Two/ Three): **Blood** **06**

(B) Write Briefly on (Any One/Two): **Nerve Muscle** **03**

Q.3 Write Briefly on (Any Two/ Three): **GIT** **06**

SECTION II

Q.4 Write Briefly on. (Any Two/ Three): **CVS** **10**

Q.5 (A) Write Briefly on Any Two/ Three): **RS** **06**

(B) Write Briefly on (Any One/Two): **Kidney** **03**

Q.6 Write answer in TWO or THREE sentences (Any Six / Eight): **06**

First Internal Examination Practical

Total Marks : 50

Examination	Marks
Haematology Practical including Calculations	15
Clinical Practical	10
Instruments	05
Experimental Graphs	05
Viva	15

ANEXURE III

Preliminary and University Theory Examination scheme:

Time: 3 Hours **Total Marks - 50**

Topics Division

Paper–I :-

General Physiology, Bio physics, Blood, Excretory system including skin, cardio-vascular system and respiratory system, environmental Physiology and Exercise Physiology.

Paper–II :-

Nerve-muscle physiology, Special senses, Central Nervous System including Autonomic Nervous system, Digestive system, Endocrine system and reproductive system.

PAPER-I

Section I

Q.1		Write Briefly on. (Any Two/ Three) :	
		(Applied Physiologyof Systems Covered in Paper I)	**10**
Q.2	(A)	Write Briefly on (Any Two/ Three):	
		(**Blood)**	**06**
	(B)	Write Briefly on (Any One/Two):	
		(**General Physiology Including Biophysics)**	**03**
Q.3		Write Briefly on (Any Two/ Three):	
		(**Excretory System Incl. Skin & Body Temp. Reg)**	**06**

Section II

Q.4		Write Briefly on. (Any Two/ Three):	
		(**CVS)**	**10**
Q.5	(A)	Write Briefly on Any Two/ Three):	
		(**RS)**	**06**
	(B)	Write Briefly on (Any One/Two):	
		(Environmental & Exercise Physiology)	**03**
Q.6		Write answer in TWO or THREE sentences (Any Six / Eight):	
		(**All above Systems)**	**06**

PAPER-II

Section I

Q.1		Write Briefly on. (Any Two/ Three) :	
		(Applied Physiologyof Systems Covered in Paper II)	**10**
Q.2	(A)	Write Briefly on (Any Two/ Three):	
		(**Endocrionology)**	**06**
	(B)	Write Briefly on (Any One/Two):	
		(**ReproductivePhysiology)**	**03**
Q.3		Write Briefly on (Any Two/ Three):	
		(**Gastro-Intestinal System)**	**06**

Section II

Q.4 Write Briefly on. (Any Two/ Three):
(**CNS & ANS)** **10**

Q.5 (A) Write Briefly on Any Two/ Three):
(**Special Senses)** **06**

(B) Write Briefly on (Any One/Two):
(Nerve & Muscle Physiology) **03**

Q.6 Write answer in TWO or THREE sentences (Any Six / Eight):
(**All above Systems of Paper II)** **06**

ANNEXURE IV

Preliminary Practical Examination Total Marks : 60

Examination	**Marks**
Haematology Practical including Calculations	15
Clinical Practical	10
Instruments	05
Experimental Graphs, Charts, Photographs	10
Viva of Paper I	10
Viva of Paper II	10

ANNEXURE V

Internal Marks Calculation For Physiology

No.	Type	Marks	Month
1.	1st Periodic Exam	50	
2.	2nd Periodic Exam	50	
3.	1st Internal Exam Theory Practical	50 50	january
4.	2nd Internal / Preliminary Exam Practical + Viva	100(50+50) (I+II) 60 (40+20)	May
Preliminary Exam as per University Exam.			
Marks distribution Internal marks			
1	Theory	20 marks	
2	Practical	20 marks	
Internal marks Calculation			
1	**(i) Theory**		
	Lectures Attendance	2.5 marks	
	1st Internal Exam	05 marks	
	Preliminary	7.5 marks	
	1st& 2nd Periodic Exam	05 marks	
	Total	20 marks	
2	**(ii) Practical**		
	Practical Attendance	2.5 marks	
	1st Internal Practical	05 marks	
	Prelim Exam	7.5 marks	
	Journal	05 marks	
	Total	20 marks	

Bio-Chemistry

Syllabus

First M.B.B.S 1st term Theory Syllabus	
Duration 1st August to 31st January	
PROTEIN	Total=10
Cell and Organelles	1
Cell Membrane and Transport Mechanisms	1
Amino Acids-Structure, Classification & Properties	2
Protein-Structure, Classification & Properties-1	1
Collagen -Structure & its Disorders	1
Biologically Active Peptides	1
Immunohistochemistry-Immun System, Paraproteinemia, Complement System	3
Lipids	Total=5
Lipids-Chemistry, Classification, Properties and Function	1
Lipids-Phospholipids,Glycolipids, Sphingolipid etc.	1
Lipids-Fatty Acids, PUFA, Lipid Peroxidation	1
Cholesterol/Lipoproteins-Chemistry and Functions	1
Eicosanoids - Prostaglandins Classification & their Clinical Importance, Thromboxane, Leucotrines	1
Enzyme	Total= 5/6
Enzymes:Classification , Properties, Co-enzymes,Enzyme Kinetics &	
Enzyme-Mechanism of Action	
Enzyme-Inhibition- Reversible and Irreversible & their Clinical Importance	
Enzyme - Allosteric Inhibition & its role in Metabolic Pathways	
Enzyme Regulation- Induction , Phosphorylation	
Diagnostic Importance of Enzymes & Isoenzymes	
Therapeutic Enzymes, Immobilized Enzymes	
Genetics	Total=05/6
Overview of Purines and Pyrimidines :Nucleosides, Nucleotides & Their Biological Importance	1
Purines:Synthesis,Catabolism. Gout & Other Disorders	2
Pyrimidine-Synthesis,Catabolism and Disorders	1
Overview of DNA & RNA	1

Carbohydrate	Total=3
Carbohydrate-Structure, Function, Classification And Properties	1
Monosaccharides and Disaccharides - Biological Importance	1
Homo & Hetero Polysaccharides & their Biological Importance	1
Heme Synthesis & Porphyrias	3
Heme Catabolism & Jaundice	3
Biological Oxidation - ETC, Inhibitors	2
Oxidative phosphorylation & Brown Tissue Metabolism	1
Metabolism Of Lipid -	Total=3
Beta Oxidation (Odd & Even) of FA, Regulation & EnergeticsOther types of Oxidation of Fatty Acids	3
Metabolism Of Carbohydrate	Total=1
Gluconeogenesis	1
Replication Of DNA	3

Total=44 to 45 Before 1st Terminal Exam (31st January)

Metabolism of Carbohydrate	Total=6
TCA cycle (Amphibolic Nature) and its Regulation	1
Glycogen Metabolism, Regulation and GSDs	1
HMP shunt, Biological Significance & G6 PD Deficiency	1
Blood Glucose Regulation, Role of Insulin& Glucagon-Diabetes Mellitus	2
Carbohydrate Metabolism in Different Tissues ,Minor Pathways, Inborn Errors	1
Metabolism of PROTEIN	Total=8
Proteins-N2 Balance, Reactions of Amino Acids, Fate of AA	1
Urea Cycle and Related Disorders	2
Metabolism of Aromatic AA & Physiological Importance - Phenyalanine,Tyrosine,Tyrtophan, Histidine	2
Amino Acids -Glycine, Serine and Sulphur Containing AA	1
Metabolism & Physiological Importance of Branch chain Amino Acids & one Carbon Metabolism	1
Inborn Error of Amino Acid Metabolism	1
Metabolism of Lipids	Total=8
Fatty Acid Synthesis & Regulation	1

Ketone Body Synthesis, Breakdown & Diabetic Ketoacidosis	1
Adipose Tissue MetabolismFatty liver, Lipotropic factors	1
Cholesterol Synthesis, Regulation & Atherosclerosis	1
Structure, Types & Functions of Lipoprotein	1
Metabolism of Cylomicron, LDL, HDL Lipoprotein with Disorders	2
Stravation & Obesity & Integration of Metabolism	1
Molecular biology	Total=11
Genetic Code & Mutation	1
Transcription	1
Post-Transcriptional Modification	1
Translation	1
Post-Translational Modification	1
Regulation of Gene Expression	1
Recombinant DNA Technology	1
Cloning, PCR, GENE Therapy	1
Blotting and Hybridization Techniques	1
RFLP and DNA Fingerprinting	1
Monoclonal Antibody, DNA Sequencing and GENE Mapping	1
	Total=10
Acid Base Balance & Disorders	3
Xenobiotics	1
Free Radicals & Antioxidant	1
Mechanism of Hormone Action, Insulin, Steroid Hormones	2
Muscle & Cytoskeleton- Troponin, Myoglobin & BNP	1
Blood Chemistry - WBC, RBC	1
Bioinformatics	1
Total=43 to 45 Before 30th of April	
Theory Lectures During one Academic Year TOTAL=	**90**

Sr. No.	PRACTICAL EXERCISE FIRST MBBS 1st TERM SYLLABUS
1	**Familiarization to the Laboratory, Basic Laboratory Principles and Preparation of Laboratory Reagents**
	Qualitative Analysis –
2	Tests For Carbohydrates **A. Demo -** Composition of Saliva & Role Of Salivary Amylase in
3	Tests For Proteins
	Study of Composition of Body Fluids
4	Composition of Cerebrospinal Fluid
5	Composition of Normal and Abnormal Gastric Juice
6	Composition of Normal Urine
7	Composition of Abnormal Urine
	Colorimetry
8	Principle of Beer's and Lambert's Law & its Application in Quantitative Estimation of Biochemical Parameters
	Quantitative Analysis of Biochemical Parameters
9	**Diabetic Profile**
	Estimation of Plasma Glucose **Demo:GTT**
	PRACTICAL EXERCISE FIRST MBBS 2nd TERM
10	**Renal Function Tests**
	Estimation of Serum Urea
	Estimation of Serum Creatinine
	DEMO: Calculation of Creatinine Clearance
11	**Liver Function Test**
	Estimation of Serum Total Protein & Serum Albumin & Calculation
	Estimation of Serum Total Bilirubin
	Estimation of Serum ALT , AST & ALP
12	**Lipid Profile**
	Estimation of Serum Cholesterol **A. Demo- Estimation of HDL &** calculation of Serum LDL
13	**Estimation of Serum Uric Acid**
14	**Pancreatic Function Test**
	Estimation of Serum Amylase

<table>
<tr><th colspan="5">Internal Mark Pattern For University Exam</th></tr>
<tr><th>Name Of Exam.</th><th>Theory Marks</th><th>Theory Marks Counted For Internal</th><th>Practical Marks</th><th>Practical Marks Counted For Internal</th></tr>
<tr><td>Internal Exam.</td><td>50 Marks</td><td>5</td><td>50 Marks</td><td>5</td></tr>
<tr><td rowspan="3">Preliminary Exam.</td><td>Total-100</td><td rowspan="3">7.5</td><td rowspan="3">50 Marks</td><td rowspan="3">7.5</td></tr>
<tr><td>Paper-I (50)</td></tr>
<tr><td>Paper-Ii (50)</td></tr>
<tr><td rowspan="7"></td><td rowspan="3">Attendance</td><td></td><td rowspan="3">Journal Submission</td><td></td></tr>
<tr><td>2.5</td><td>2.5</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Periodic -I (25)</td><td rowspan="3">5</td><td>Periodic-I (40)</td><td rowspan="3">5</td></tr>
<tr><td>Periodic-II(50)</td><td>Periodic-Ii (40)</td></tr>
<tr><td>MCQ-(25)</td><td>Viva (20)</td></tr>
<tr><td>Total</td><td>7.5</td><td>Total</td><td>7.5</td></tr>
<tr><td colspan="2">Grand Total</td><td>20</td><td></td><td>20</td></tr>
</table>

Practical Examination University Pattern

- **Practical**
  - Oral Viva — 20 Marks
  - Exercise I — 20 Marks
  - Exercise II — (a) Major Exercise — 14 Marks
    (b) Minor Exercise — 06 Marks

- **Division of marks in pairs**
  - Pair I — Oral Viva — 20 Marks — Half Candidates
    Exercise I — 20 Marks — All Candidates
  - Pair II — Oral Viva — 20 Marks — Half Candidates
    Exercise I — 20 Marks — All Candidates

BIOCHEMISTRY : DISTRIBUTION OF TOPICS IN PAPER I & II

PAPER - I

Cell, Cell membrane, chemistry and metabolism of Fat, Carbohydrates and Hemoglobin, Porphyrins, Enzymes Body Fluids, pH buffers. Acid base balance and regulation, Biological oxidation, Body defense mechanism and its application in medicine. Environmental Biochemistry and Cancer Biochemistry, Organ Function Tests, Newer Techniques., Signal Transduction & Endocrine functions, Muscle & cytoskeleton. Biochemistry of Blood cells.

PAPER - II

Protein Chemistry and Metabolism, Nucleic and Transcription, Replication, Translation, Melecular Biology, Genetic Engineering Bio-Technology, Integration of Metabolism, Purine, Pyrimidine Chemistry, and Metabolism, Vitamins. Minerals and Nutrition. Chemistry of Collagen & associated disorders, Immuno-histochcmistry

SCHEME FOR PAPER - 1			**50 MARKS**
Section -1			**25 marks**
Q-l	Applied aspects of topics covered under paper - **1** course.	**2 short notes out of three**	**2 x 5 = 10**
Q-2	Chemistry of Enzymes, Heme, Carbohydrates and fat. Endocrine, pH Homeostasis, Body Fluids& Blood Cells	**3 short notes out of five**	**3 x 3 = 9**
Q-3	Short notes	**2 short notes out of three**	**2 x 3 = 6**
SECTION – II			**25 marks**
Q-4	Fat, Carbohydrates and Hemoglobin Metabolism	**2 short notes out of three**	**2 x 5 = 10**
Q-5	Body defence mechanism, Biological oxidation, environmental Bio-chemistry. Cancer Biochemistry, organ function test, newer techniques, Muscle & Cytoskeleton	**3 short notes out of five**	**3 x 3 = 9**
Q-6	Interpretative clinical chemistry short explanatory objective questions / Case notes	**6 out of eight**	**6 x 1 = 6**
SCHEME FOR PAPER- 2			**50 MARKS**
Section -1			**25 marks**
Q-l	Applied aspects of topics covered under paper - II course.	**2 short notes out of three**	**2 x 5 = 10**
Q-2	Nucleic acids, Chemistry and metabolism, molecular Biology.	**3 short notes out of five**	**3 x 3 = 9**
Q-3	Short Notes	**2 short notes out of three**	**2 x 3 = 6**
Section – II			**25 marks**
Q-4	Protein metabolism^ minerals and Protein chemistry, Chemistry of Collagen & associated disorders, Immuno-histochemistry	**2 short notes out of three**	**2 x 5 = 10**
Q-5	Integration of metabolism and nutrition, Vitamins, Purine, Pyrimidine, chemistry and metabolism.	**3 short notes out of five**	**3 x 3 = 9**
Q-**6**	Interpretative chemistry with Short explanatory objective questions / Case notes	**6 out of eight**	**6 x 1 = 6**

GUJARAT UNIVERSITY, AHMEDABAD

COURSE CURRICULUM OF MEDICAL PHARMACOLOGY FOR UNDERGRADUATES CONDUCTED AT

B. J. Medical College, Smt. N. H. L. Municipal Medical College, L.G. Medical College, GMERS Medial College Sola & Gandhinagar, G.C.S. Medical College, Ahmedabad ,w.e.f 2014

1. Goal

The broad goal of teaching undergraduate students in Pharmacology is to inculcate a rational and scientific basis of therapeutics.

2. Objectives

(a) Knowledge

At the end of the course the student shall be able to,

- Describe the pharmacokinetics and pharmacodynamics of essential and commonly used medicines
- List the indications, contraindications, interactions and adverse reactions of commonly used drugs
- Indicate the use of appropriate drug in a particular disease after consideration of the cost, efficacy and safety for individual needs
- Mass therapy under national health programmes
- Describe the pharmacokinetic basis, clinical presentation, diagnosis and management of common poisoning
- List the drugs of addiction and recommend the management
- Classify environment and occupational pollutants and state the management issue
- Indicate causation in prescription of drugs in special medical situation such as pregnancy, lactation, infancy and old age
- Integrate the concept of rational drug therapy in clinical pharmacology
- State the principles underlying the concept of Essential Drugs
- Evaluate the ethics and modalities involved in development and introduction

of new drug

(b) Skills

At the end of course the student shall be able to,

- Prescribe drugs for common ailments
- Recognize adverse reactions and interactions of commonly used drugs
- Observe experiments designed for study of effects of drugs, bioassay, and interpretation of experimental data
- Seek information on common pharmacological preparations and critically evaluate the drug formulations

SYLLABUS

A) THEORY (knowledge area): will include course of lectures, tutorials, discussions, seminars and symposia on:

- General Principles of Pharmacology
- Systemic Pharmacology- Drugs acting on physiological system and organs
- Chemotherapy of infectious diseases and cancer

Note: Throughout the course of study emphasis will be laid on therapeutic aspects of the drugs

I. Pharmacology theory

Theory topics are divided into two main areas. These are not the absolute divisions and are likely to change from time to time.

1. *Core areas:* Include topics which are vital and essentials to learn to enable the student to function as *first contact doctor* and hence are expected to be *learnt thoroughly* and are *evaluated accordingly.*

2. *Additional areas*: include remaining drugs belonging to specialist usage which require *moderate coverage*, so as to provide *awareness* about them.

1.1 General principles of pharmacology and therapeutics

A. Core Areas

- Definitions, Sources of drugs, Drug nomenclature, Types of drugs (OTC, Prescription drugs etc)

- Dosage forms, Routes of drug administration (with an emphasis on choosing the appropriate dosage and route for a given drug)
- Pharmacokinetics (ADME, First and Zero order kinetics, Steady state concentration, Bioavailability, plasma half life, PPB, V_d, Clearance and their application in determining dosing schedule of medicines)
- Pharmacodynamics and mechanisms of drug actions
- Factors modifying drug action and their application to therapeutics
- Adverse Drug Reactions- Types, Classification and ADR Reporting
- Medicines used in special populations: Pregnancy, lactation, geriatric and paediatric, patients with hepatic and renal dysfunction
- An overview of drug development process
- Essential Medicines and Rational use of medicines

B. Additional Areas:

- Special drug delivery systems
- Therapeutic drug monitoring
- Drug Regulations, Orphan drugs
- Drug Compliance
- Drug Interactions and their importance in therapeutics

1.2 Systemic Pharmacology

Note: Emphasis should be laid on commonly used essential medicines/prototype drugs

(1) Central Nervous System

A. Core Area

- Analgesics - opioid analgesics and non-steroidal anti-inflammatory drugs (NSAIDs). Pharmacotherapy of pain, gout and rheumatic disorders
- Drugs used in epilepsies
- Local anesthetics
- Sedatives, hypnotics and treatment of insomnia
- Psycho-pharmacology - drug treatment of anxiety, and depression

- Alcohols- ethanol and methanol including alcohol dependence and methanol poisoning
- Drugs of abuse, prevention and management of drug dependence

B. Additional Areas

- General anesthetics
- Drug therapy of psychoses and mania
- Drugs for CNS degenerative disorders
- Drug therapy of Myasthenia gravis

(2) Autocoids and related drugs

A. Core Area

- Histamine and Anti-histaminics and drug treatment of allergic disorders
- Drugs acting on Prostaglandins, leukotrines, 5-HTreceptors
- Drug treatment of migraine

(3) Autonomic nervous system

A. Core area

- General principles of drugs acting on autonomic nervous system (Sympathetic and parasympathetic neurotransmitters and its modifications by diseases and drugs)
- Pharmacology and therapeutic applications of Parasympathomimetic drugs
- Pharmacology and therapeutic applications of Parasympatholytic drugs
- Pharmacology and therapeutic applications of Sympathomimetic drugs
- Pharmacology and therapeutic applications of Sympatholytic drugs
- Drug therapy of Parkinsonism

B. Additional are

- Skeletal Muscle Relaxants (Peripheral and centrally acting)

(4)Cardiovascular System and Drugs Acting on Kidneys

A. Core Area

- Drug therapy of hyperlipidemias

- Renin angiotensin system and its antagonists
- Drugs used in hypertension and drugs therapy of essential hypertension
- Drug therapy of angina pectoris and acute coronary syndromes
- Drugs used in cardiac failure
- Drugs used for treatment of hypovolemia and shock
- Diuretics and Anti-diuretics

B. Additional Area

- Anti-diuretics
- Drugs used for cardiac arrhythmias

(5)Blood and Blood Forming Agents

A. Core Area

- Anti-platelet agents, anticoagulants and thrombolytic
- Drug treatment of iron deficiency anemia and folate deficiency anemia

B. Additional Area

- Megaloblastic and pernicious anaemia

(6)Respiratory Drugs

A. Core Area

- Drug therapy of cough
- Drug therapy of bronchial asthma (Bronchodilators, corticosteroids, leukotriene modifiers)

(7) Gastrointestinal Drugs

A. Core Area

- Drug therapy for vomiting
- Drug therapy of acid peptic diseases (Proton pump inhibitors, H_2 receptor blockers, antacids, ulcer protective & ulcer healing drugs)
- Drug therapy of diarrhea and constipation

(8) Hormones and hormone antagonists, drugs acting on uterus

A. Core area

- Anterior pituitary and hypothalamic releasing hormones

- Thyroid hormones and antithyroid drugs
- Drugs used in the treatment of diabetes mellitus
- Adrenal corticosteroids – glucocorticoids & mineralocorticoids
- Estrogens, progesterone, Antiestrogens and Antiprogestins
- Hormonal contraceptives
- Ovulation inducing and inhibitory agents
- Oxytocin and uterine relaxants

B. Additional area

- Androgens, antiandrogens and Anabolic steroids
- Parathyroid and related hormones, Calcium metabolism and Drugs therapy for osteoporosis

(9) General and Specific Chemotherapy

A. Core Area

- General Principles of chemotherapy including rational use of antimicrobials and antimicrobial resistance
- Sulfonamides and Trimethoprim
- Penicillins and Cephalosporins (β Lactams)
- Aminoglycosides
- Macrolides
- Fluroquinolones
- Broad spectrum antimicrobials –Tetracyclines, Chloramphenicol
- Drug therapy of common bacterial infections (Respiratory, Gastrointestinal tract, Genitourinary, STD, CNS, skin and soft tissue infections etc)
- Drug therapy for urinary tract infections
- Drug therapy for typhoid fever
- Drug therapy for syphilis and gonorrhoea
- Drug therapy for common respiratory tract infections
- Pharmacology of drugs used in treatment of Tuberculosis
- Pharmacology of drugs used in treatment of Leprosy

- Pharmacology of drugs used in treatment of Malaria
- Pharmacology of drugs used in treatment of Protozoal Infections
- Pharmacology of drugs used in treatment of Worm Infestations
- Pharmacology of antifungal drugs
- Pharmacology of drugs used in HIV infections and other Common Viral Infections

B. Additional Area

- Drugs used for Cancer Chemotherapy
- Newer antimicrobials: Lincosamides, Oxazolidinones,Glycopeptide antibiotics

(10) Miscellaneous Topics

A. Core area

- Ocular pharmacology : Glaucoma, common infection
- Dermatological pharmacology – acne, scabies, psoriasis, herpes
- Drug use in disease states(hepatic and renal)
- Vaccines and sera
- Antiseptics and disinfectants
- General principles of management of common poisoning and chelating agents

B. Additional area

- Environmental pollutants and occupational pharmacology
- Immunomodulators

B) PRACTICAL (skills area):

The training in practical Pharmacology will be imparted during practical / demonstration classes, and also in tutorials, group discussions.

Core Areas (Vital and Essential)

The student at the end of the course in pharmacology must be able to demonstrate essential skills to select appropriate medicines and prescribe them for common ailments. The student should be competent to:

1. Identify the common dosage formulations and evaluate them for their appropriateness, advantage & disadvantages

2. Calculate the dose of drugs to be administered by various routes & in special situations
3. Be aware of the various sources of drug information and be able to retrieve authentic drug information from suitable sources
4. Critically evaluate the available drug promotional literature using the WHO Criteria
5. Select the most appropriate and rational drug treatment for common ailments (using the P-drug concept)
6. Critically evaluate the Fixed Dose Combinations for rationality
7. Understand and interpret the effect of drugs on living tissues and animals using graphical recordings from suitable experiments or computer based softwares (CAL)
8. Write correct prescriptions for common ailments and critically evaluate the prescriptions for suitability, correctness with an informed decision about the right drug, dose schedule, formulations and necessary patient communications.
9. Understand and demonstrate the importance of effective communication skills with patients to ensure proper use of medicines and improve patient compliance.
10. Report adverse reactions to medicines

- **Additional Areas:**

1. Understand the basic principles of biostatistics
2. Demonstrate an understanding of the new drug development process
3. Understand the Essential Medicines concept & the principles underlying the selection of these drugs for common ailments
4. Significance of common parameters in pharmacokinetics
5. Understand the principles of bioassay

Syllabus in Practical Pharmacology

- Clincial Pharmacology: Prescription writing, comments / criticism / evaluation of drug therapy in given case scenario, P-drugs, ADR reporting, Essential medicines,

- Life saving medicines in emergency conditions
- Evaluation of drug promotional literature and FDC
- Clinical pharmacy: drug formulations, dosage calculations, drug dilutions, sources of drug information
- Experimental Pharmacology : understand and interprete the effects of drugs on living tissues and animals

EVALUATION

Examination regulations

1. Attendance – 75% attendance is compulsory

2. Internal examination

(a) No. of tests – There will be two internal and one preliminary examination

A term ending MCQ test will also be conducted.

Each test will have a theory and practical examination. Marks distribution is as follows:

Exam	Ist Internal	IInd Internal	Preliminary
Theory	40	40	80
Practical	20	20	40

The marks obtained as internal examination will be consolidated at the end of the last term and calculated out of **30** with the following break-up.

Internal Marks:

Theory : 20

Practical : 10

Total : 30

(b) Students must secure 35% of the total marks fixed for internal assessment in order to be eligible to appear in the final university examination and must obtain 35% in aggregate, with a minimum of 35% in the theory and 35% in practicals.

(c) Internal assessment will be transparent, uniform, objectively assessed, recorded and feed-back given to students within two weeks of completing the test.

3. University examinations

There will be two papers, each of two hours duration. Each paper will have two sections.

Division of topics:

Paper-I

1. General principles of pharmacology, essential drugs, rational therapy

2. Drugs acting on autonomic nervous system and neuromuscular junction

3. Drugs acting on central and peripheral nervous system, including drug abuse and addiction

4. Autacoids , drug therapy of inflammation

5. Drugs acting on respiratory system

6. Drugs acting on renal and cardiovascular system

7. Ocular pharmacology

8. Toxicology

Paper-II

1. Drugs affecting gastrointestinal function

2. Drugs affecting uterine motility

3. Chemotherapy of microbial diseases and parasitic infections

4. Chemotherapy of cancer, immunomodulators (basic aspects and selected drugs)

5. Drugs acting on blood forming organs

6. Hormones and hormones antagonists

7. Vitamins

8. Pharmacology of skin

➔ **It is recommended that 80% of the questions should be asked for core areas and 20 % questions from the additional areas**

Structure of Theory Paper

Internal Exam : Only one Paper

Paper I and Paper II (for preliminary and university)

Q.1 Describe Pharmacotherapy of Any two out of three 2×5 marks = **10**

Q.2 Mention the rationale for use of the following drugs in given condition along with mode of administration and important adverse reactions (Any three out of four) 3×4 marks **= 12**

Q.3 Write short notes on (Any three out of four) 3×4 marks = **12**

Q.4 Answer briefly(Any six out of eight) 6×1 mark = **06**

Total marks = 40

Each paper should include one applied question of 10(ten) marks (Question no.1)

Time duration: 2(Two) Hours

Structure of Practical Examination

Sr. no.	Item	Existing Max. marks	Proposed Max Marks
1.	Prescription writing	5	5
2.	Comment, correct & rewrite a given prescription for a case scenario	5	5
3.	Table Exercise	10	10
4	Clinical Pharmacology Exercise (Demonstration of skill- setting up an IV drip, Filling up an ADR report, Critique of drug promotional literature, Critique of drug promotional literature , sources of drug information and P-drug)	5	10
5.	Viva voce	15	10
	Total	**40 marks**	**40 marks**

Theory	Marks	Practical	Marks
Paper-I	40		40

Paper-II	40		-
Internal Marks	20		10
Total	**100**		**50**

Division of marks for University examination

Passing standard:

Students must secure 50% in theory and 50% in practical separately in the university examination to be declared as having passed the examination in addition to 50% of the total aggregate.

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GUJARAT UNIVERSITY
Common Curriculum of Pathology (UG)

Term I (3rd Sem)	Topic: **Cell Injury & Amyloidosis** Lecture: 1) Etiology and mechanisms- ischemic, toxic 2)Reversible cell injury – types,morphology,hyaline,fatty change 3)Irreversible cell injury – types of necrosis, gangrene 4) Free radicals – antioxidants mechanism 5) Pigments & Calcification 6) Adaption – Atrophy, hypertrophy, hyperplasia, Metaplasia, dysplasia 7) Apoptosis 8)Extracellular accumulation: Amyloidosis- classification, pathogenesis, morphology 9) MCQ Topic: **Inflammation & Repair** Lecture: 10) Acute inflammation-etiology,cardinal signs 11) Vascular events 12) Cellular events- chemotaxis, phagocytosis 13) Morphological variant of inflammation 14) Chemical mediators 15) Chronic inflammation – causes,types,Granulmatous inflammation 16) Repair & Regeneration 17) MCQ Topic: **Immunopathology** Lecture: 18) Introduction to the cells of the immune system,antibodies and regulation of immune responses 19) Hypersensitivity-types and examples,antibody and cell mediated tissue injury 20) Autoimmune disorders like SLE 21) Organ transplantation – immunological basis of rejection, GVHR 22) MCQ Topic: **Infectious diseases** Lecture: 23) Mycobacterial diseases –TB, leprosy 24) Bacterial diseases – pyogenic, typhoid, diphtheria, bacillary dysentery, syphilis 25) viral – polio, herpes, rabies, measles, reckettsial, chlamydial infectious 26) Fungal diseases and oppertunitic infections 27) Parasitic diseases – malaria, filaria, amoebiasis, kala Azar, hydatid 28) AIDS- etiology, transmission, pathogenesis, pathology, Complications, diagnosis, handling of infected material and health education 29) MCQ Topic: **Circulatory Disturbance** Lecture: 30) Edema – etiopathogenesis, types 31) Hyperemia & Congestion – chronic venous congestion

	Lung ,liver, spleen 32) Thrombosis – formation ,fate, effects 33) Embolism – pulmonary embolism, Systemic embolism 34) Infarction – types, sites, gangrene 35) Shock – etiopathogenesis, types, morphology 36) MCQ Topic: **Clinical Pathology** Lecture: 37) Anemia, General Consideration 38) Nutritional Anemia – Iron deficiency & Megaloblastic anemia 39) Hemolytic anemia – General Consideration 40) Thalassemia, Sickle cell anemia 41) Bone marrow aspiration & General consideration 42) Leukemia , Lymphoma & other hematological malignancies 43) Hemorrhagic disorders 44) C.S.F. examination 45) Blood transfusion 46) Glucose tolerance test, Pregnancy test 47) Automation in clinical pathology 48) M.C.Q.
Term II (4th Sem)	Topic: **Neoplasia** 49) Definition, Nomenclature, Characteristics, classification, causes 50) Difference between Benign & Malignant Neoplasm 51) Chemical & environmental Carcinogens 52) Oncogenes & Viral Oncogenes,Anti-oncogenes 53) Spread of Tumors & Metastasis 54) Paraneoplastic Syndrome and clinical features of neoplasia 55) Laboratory diagnosis of Tumors 56) M.C.Q Topic: **Respiratory System** Lecture: 57) Lobar Pneumonia 58) COPD 1- Bronchial Asthma, Chronic Bronchitis, 59) COPD 2 – Emphysema, Bronchiectasis 60) Lung Abscess 61) Pulmonary Tuberculosis 62) Lung Tumors 63) Occupational lung disorders 64) MCQ Topic**: Cardiovascular System** Lecture: 65) Atherosclerosis & Aneurysm 66) Ischemic Heart Disease 67) Rheumatic Heart Disease 68) Infective Endocarditis 69) Cardiomyopathy 70) Hypertension & Congestive Cardiac Failure 71) M.C.Q.

	Topic: **Gastro-intestinal system** Lecture: 72) Oral pathology 73) Esophageal pathology – Barret's esophagus 73) Gastritis and acid peptic disease 74) Tumors - Carcinoma Stomach 75) Ulcerative lesion – Inflammatory Bowel Disease 76) Polyps & Carcinoma Colon 77) Malabsorption syndrome 78) M.C.Q. Topic: **Hepatobiliary system** Lecture: 79) Liver Function Test 80)Jaundice – Lab. Diagnosis, 81)Viral Hepatitis 82)Alcoholic Liver Disease 83)Cirrhosis and portal hypertension 84)Hepatocellular Carcinoma & Other Tumors 85)other common lesions of liver 86)Biliary system – diseases of gall bladder 87)M.C.Q.
Term III **(5th Sem)**	Topic: **Kidney (renal and urinary tract pathology)** Lecture: 88) Nephritis & Nephrotic Syndrome 89) Chronic Glomerulonephritis & Chronic Pyelonephritis 90) Renal Hypertension 91) Tumors of kidney 92) Renal Function Test 93) acute renal failure,progressive renal failure and end stage renal disease 94) Polycystic kidney,obstructive nephropathy 95) Urinary bladder – cystitis, carcinoma 96) M.C.Q. **Endocrine** Lecture: 97) Thyroid – tumors, non neoplastic conditions,TFT 98) Diabetes mellitus 99) Pancreas – pancreatitis, tumors, Pancreatic function test 100) M.C.Q. Topic: **Osteopathology/ Loco motor System** Lecture: 101) Osteomylitis ,arthritis 102) metabolic bone diseases – rickets, osteomalacia 103) bone tumors 104) common nervous system diseases 105) common muscular diseases 106) M.C.Q. Topic: **Miscellaneous disorders** Lecture: 105) Autosomal and sex linked disorders with examples 106) Protein energy malnutrition 107) Vitamin deficiency disorders 108) M.C.Q.

Internal Examination Pattern

	Time : At the end of	**Syllabus**
1st internal	3rd Semester (6 months)	As per term 1 (Semester 3)
2nd internal	4th Semester (1 year)	As per term 2 (Semester 4)
Prelim	5th Semester	Full

Academioc calender for medical undergraduate internal examination

Fresh batch		Internal for fresh batch		Casual batch		Internal for casual batch	
Term	date	Test	date	Term	Date	Test	Date
1st	Aug - jan	Ist internal	1-15 th jan	1 st	Feb – july	1st internal	1-15 july
2nd	Feb – july	2nd internal	1-15 july	2 nd	Aug – jan	2nd internal	1-15 jan
3rd	Aug – jan	Prelim	16-30 nov	3rd	Feb- july	Prelim	16-30 may

Theory :

Paper scheme for 1st and 2nd and prelim. Internal examinations

1 paper in 1st and 2nd internal (as per syllabus for the term) and
2 papers in prelim (paper I – general pathology and hematology ;
paper II – systemic pathology and clinical pathology)

Each paper of total 40 marks & 2 hours duration

Q.1 Describe in detail [2 (x5) out of 3] (10)

Q.2 Write short notes [3 (x4) out of 4] (12)

Q.3 Write short notes [3 (x4) out of 4] (12)

Q.4 Describe in 2 or 3 lines [6 (x1) out of 8] (6)

Practical :

Total marks 20 (for 1 st internal)

Table viva	10 marks
hematology	5 marks
urine examination	5 marks

Total marks 20 (for 2 nd internal)

Table viva	10 marks
hematology	4 marks
urine examination	3 marks
histopathology slide	3 marks

Total marks 40 (for prelim)

Table Viva (pathology and clinical pathology) :	20 marks
hematology exercise :	8 marks
urine exercise	7 marks
histopathology slide	5 marks

INTERNAL MARKS CALCULATION

Theory : Maximum Marks : 20

Practical : Maximum Marks : 10

	Theory	Practical
1 st terminal	4	2
2 nd termina	4	2
Prelim	8	4
Day to day	4	2
Total	20	10

GUJARAT UNIVERSITY

Microbiology

	Theory Lectures	Tutorial	Practical
Term I (3rd Sem)	• Introduction and History of Microbiology • Morphology and Classification of Bacteria • Physiology of Bacteria • Sterilization • Disinfection • Bacterial Genetics • Infection • Normal Flora • Antibiotics and Antibiotic resistance • Laboratory diagnosis of Infectious diseases • Antigen • Antibody • Complement • Serological reactions -1 • Serological reactions -2 • Immunity • Structure and Functions of Immune system • Immune response • Hypersensitivity -1 • Autoimmunity • Immunodeficiency • Transplantation and Tumor Immunity	• Aerobic and Anaerobic culture, Methods of Anaerobiosis • Sterilization and Disinfection – Practical applications • Immunization and Immunotherapy • Antibiotic resistance • Biomedical waste management	• Introduction to Microbiology, Microscopy • Morphology and Staining of Bacteria - Gram • Morphology and Staining of Bacteria - ZN • Sterilization and Disinfection • Culture Media • Collection and Transport of Blood and Body Fluids • Collection and Transport of Urine, Stool, Pus and Swabs • Isolation and Identification of Bacteria • Antibiotic Sensitivity Tests • Serological Reactions
Term II (4th Sem)	• Staphylococci • Streptococci • Pneumococci • Neisseria • Corynebacteria • Bacillus • Clostridium welchii • Clostridium tetani and botulinum • Mycobacterium tuberculosis • Atypical Mycobacteria • Mycobacterium leprae • Enterobacteriaceae – 1 (E.coli) • Enterobacteriaceae – 2 (Klebsiella and Proteus)	• GI tract infections- Etiology and their diagnosis • Respiratory tract infections - Etiology and their diagnosis • Urinary tract infections - Etiology and their diagnosis • CNS Infections - Etiology and their diagnosis • Septicemia and PUO - Etiology	• Staphylococci and Gram Positive cocci • Streptococci and Pneumococci • Neisseria and Gram negatice cocci • Corynebacteria and other Gram positive bacilli • Bacillus and Clostridia • Mycobacteria • Enterobacteriaceae • Salmonella and Shigella • Vibrio • Pseudomonas • Spirochaetes

	• Salmonella • Shigella • Vibrio • Pseudomonas • Haemophilus • Spirochaetes • Leptospira and Borrelia • Chlamydia • Mycoplasma • Rickettsia • Actinomycetes and Nocardia • Miscellaneous Bacteria (Yersinia, Listeria,etc) • Introduction to Medical Parasitology • Amoebae • Tissue Flagellates • Haemo-flagellates • Malaria • Miscellaneous Protozoa	and their diagnosis • Skin and Subcutaneous tissue infections- Etiology and their diagnosis • Wound infections - Etiology and their diagnosis • STDs and their diagnosis • Nosocomial infections	• Lab diagnosis of Malaria • Lab Diagnosis of Protozoa
Term III (5th Sem)	• Introduction to Mycology • Superficial Mycoses • Deep Mycoses • General Virology • Pathogenesis and Laboratory Diagnosis • Viral Immunity • Pox Virus • Herpes Viruses • Orthomyxovirus • Paramyxovirus • Picornavirus • Hepatitis Virus • Arbovirus • Rhabdovirus • Retrovirus • Slow and Oncogenic Viruses • Cestodes • Trematodes • Intestinal Nematodes • Tissue Nematodes **Detailed Syllabus in Annexure 1**		• Stool examination and Blood examination • Lab Diagnosis of Cestodes • Lab Diagnosis of Trematodes • Lab Diagnosis of Intestinal Nematodes • Lab Diagnosis of Tissue Nematodes • Lab diagnosis of Fungal infections • Lab diagnosis of Viral Diseases

Microbiology

Internal Examination Pattern

	Time : At the end of	**Syllabus**
1st internal	3rd Semester (6 months)	General Microbiology and Immunology
2nd internal	4th Semester (1 year)	Systemic Bacteriology and Parasitology (Protozoology)
Preliminary Examination	5th Semester – Paper 1	General Microbiology, Immunology and Systemic Bacteriology
	5th Semester – Paper 2	Virology, Parasitology and Mycology

Paper scheme for I Term (3rd Semester) Internal examinations

Theory: Total 40 Marks **Duration: 2 hours**

Q.1 Write notes on (Any Two out of Three) (2 x 5 =10)

(2 Applied Immunology, 1 General Microbiology)

Q.2 Write short notes on (Any Three out of Four) (3 x 4 = 12)

(*All Immunology)*

Q. Write short notes on (Any Three out of Four) (3 x 4 = 12)

(All General Microbiology)

Q.4 Answer in one to two sentences on (Any six out of Eight) (6 x 1=6)

(Four General Microbiology and Four Immunology)

Practical scheme for I Term (3rd Semester) Internal examinations

Practical:

Total marks: 20

- Staining Exercise – Gram / ZN Staining 08 Marks
- Table Viva- General Bacteriology, Immunology 12 Marks

Paper scheme for II term (4th Semester) Internal examinations

Theory: Total 40 Marks & 2 hours duration

Q.1 Write notes on (any Two out of Three) (2 x 5 =10)

(*Two Applied Bacteriology and One Protozoology*)

Q.2 Write short notes on (any Three out of Four) (3 x 4 = 12)

(*All Systemic Bacteriology*)

Q. Write short notes on (any Three out of Four) (3 x 4 = 12)

(*Two Systemic Bacteriology and Two Protozoology)*

Q.4 Answer in one to two sentences on (any Six out of Eight) (6 x 1=6)

(Six Systemic Bacteriology and Two Protozoology)

Practical scheme for II (4th Semester) Internal examinations

Practical:

Total marks: 20

- Staining Exercise – Gram / ZN Staining 08 Marks
- Table Viva- Systemic Bacteriology, Protozoology 12 Marks

Paper scheme for III term (5th Semester Preliminary examination)

Paper 1 *(General Microbiology, Immunology and Systemic Bacteriology) –*

Total 40 marks 2 hours duration

Q.1 Write notes on (any Two out of Three) (2 x 5 =10)

All Applied Bacteriology

Q.2 Write short notes on (any three out of Four) (3 x 4 = 12)

Two Systemic Bacteriology and Two Immunology

Q. Write short notes on (any three out of Four) (3 x 4 = 12)

One Systemic Bacteriology, Two General Microbiology and One Immunology

Q.4 Answer in one to two sentences on (any Six out of Eight) (6 x 1=6)

Four Systemic Bacteriology, Two Immunology and Two General Microbiology

Paper 2 *(Virology, Parasitology and Mycology)*

Total 40 marks & 2 hours duration

Q.1 Write notes on (<u>any Two out of Three)</u> **(2 x 5 =10)**

Two Applied Virology and Applied Parasitology

Q.2 Write short notes on (<u>any Three out of Four)</u> **(3 x 4 = 12)**

Two Virology and Two Parasitology

Q. Write short notes on (<u>any Three out of Four)</u> **(3 x 4 = 12)**

One Parasitology, One Virology and Two Mycology

Q.4 Answer in one to two sentences on <u>(any Six out of Eight)</u> **(6 x 1=6)**

Three Virology, Three Parasitology and Two Mycology

<u>Practical scheme for Preliminary Examination</u> <u>(3rd, 4th and 5th Term Syllabus)</u>

Practical - Total marks: 40

- Bacteriology Exercise – Gram / ZN Staining 12 Marks
- Parasitology Exercise: Microscopic Examination of

  stool for parasites/Peripheral blood smear examination 13 Marks
- Table Viva-

  General Microbiology, Immunology and Systemic Bacteriology) 08 Marks
- Table Viva- Virology, Parasitology and Mycology 07 Marks

INTERNAL MARKS CALCULATION

Theory: Maximum Marks : 20

Practical: Maximum Marks: 10

Trait	Theory Marks (Maximum)	Practical Marks (Maximum)
1st Internal Examination	4	2
2nd Internal Examination	4	2
Preliminary Examination	8	4
Day to Day Assessment	4	2
Total	**20**	**10**

ANNEXURE I

Third Semester

Theory Curriculum

General Microbiology and Immunology

Topics

- Introduction and History of Microbiology
    - Should know – Contribution of scientists to Microbiology, Scope and Evolution of Microbiology, Importance of Medical Microbiology in pathogenesis, diagnosis and treatment of immunological disorders and infectious diseases

- Morphology and Classification of Bacteria
    - Should know – Classification of Microorganisms, Bacterial cell and its organelles, Relevance of cell wall of gram positive and negative bacteria for antibiotic action, Staining procedures and their clinical relevance in presumptive diagnosis (Gram and ZN)
    - Desirable to know – other staining procedures like negative staining and romnawasky staining – their relevance in diagnosis
- Physiology of Bacteria
    - Should know – Growth requirements of bacteria, respiration, growth curve and factors influencing growth, Various culture media and their application in diagnostics
    - Desirable to know – Constituents of Culture Media
- Sterilization
    - Should know – Definition of Sterilization, disinfection, asepsis, antisepsis. Methods of sterilization – their principal and applications. For Heat sterilization – Sterilization time and temperature
    - Desirable to know – Working and Validation of Autoclave and Hot air oven, Concept of CSSD
- Disinfection

- Definition, Various chemical agents for disinfection, their principals and applications, concentration and contact period of each of them

- Bacterial Genetics
    - Should know – Introduction and definitions used in genetics, Lac operon model, Genetic transfer and their application, Genetic mechanisms in antibiotic resistance (Phenotypic and Genotypic expression of resistance)
    - Desirable to know – Genetic engineering and its application in diagnosis of infectious diseases

- Infection
    - Definitions – Commensal, Pathogen, Opportunistic pathogen, pathogenecity, virulence, Virulence factors of microorganisms, types of infections

- Normal Flora
    - Should know – Bacterial flora of various sites and their role in human health
- Antibiotics and Antibiotic resistance
    - Should know – Classes of antibiotics, their mechanism of action, **genotypic and phenotypic expressions of antibiotic resistance (mutation and chromosomal transfer and enzyme production, altered receptors, increased efflux, decreased influx)**
    - Desirable to know – MRS, ESBL, VRE, MDR TB
- Laboratory diagnosis of Infectious diseases
    - Should know – Collection and transport of samples, Processing of samples in lab for microbiological diagnosis – Microscopy, culture, an outline of biochemical reactions and serology
    - Desirable to know – PCR

- Antigen

    - Should Know – definition of antigen, characteristics of antigen, types of antigen, application of heterophile antigen in diagnosis, forssmann antigen

- Antibody
    - Should know – Definition and types of antibodies, Physical and biological properties of antibodies, Their function, mucosal immunity, intravascular and extravascular immunity, abnormal immunoglobulins
    - Desirable to know – Isotypes, allotypes and idiotypes, Monoclonal antibodies
- Complement
    - Should know – Definition and Pathways of complement activation, Biological functions of complement, Clinical diseases due to complement deficiency
- Serological reactions -1
    - Should know – Definition and types of various serological reactions, Precipitation reactions – principal, types and clinical application
    - Desirable to know – various precipitation techniques

- Serological reactions -2
    - Should know – Agglutination reactions – principal, types and clinical application, ELISA – principal and clinical application, Neutralization - principal and clinical application, CFT - principal and clinical application, Immunofluorescence - principal and clinical application
    - Desirable to know – Western blot, RIA - principal and clinical application,
- Immunity
    - Should know – Definition, Types, factors affecting immunity, Local and Herd Immunity, Vaccines – types and examples
    - Desirable to know – New vaccines

- Structure and Functions of Immune system

    - Should know – Central and Peripheral Immune organs – Structure and Function, Development and Functions of T cell, B cell, Macrophages, NK cells, Phagocytosis, Immunesurveillance,
    - Desirable to know – Role of cytokines in Immune response and Immunotherapy
- Immune response
    - Should know – Humoral and Cell Mediated Immune responses, Their development (MHC and antigen presentation, processing and generation of Immune response) and functions, Primary and Secondary Immune responses, Factors affecting Immune responses, Immunological memory
    - Desirable to know –Immunological tolerance and Theories of Immune response, Commonly employed adjuvants in vaccines

- Hypersensitivity -1
    - Should know – Definition and Classification, Type 1 and 2 reactions - their mechanisms, mediators and diseases, methods of diagnosis and treatment
    - Desirable to know – Allergy tests, anti d immunization
- Hypersensitivity -2
    - Should know –Type 3 and 4 reactions - their mechanisms, mediators and role in diseases, methods of diagnosis and treatment
- Autoimmunity
    - Should know – Definition, Mechanisms of autoimmunity, types and diseases related to mechanisms
- Immunodeficiency
    - Should know – Definition, Classification and Examples, Methods of diagnosis
- Transplantation and Tumor Immunity
    - Should know – Types of transplants, mechanisms of transplant rejection, GVH reaction, Immune response to tumors, Immunosurveillance

Topics for Tutorials

- Aerobic and Anaerobic culture, Methods of Anaerobiosis
- Sterilization and Disinfection – Practical applications
- Immunization and Immunotherapy
- Antibiotic resistance
- Biomedical waste management

Forth Semester

Systemic Bacteriology and Parasitology (Protozoology)

Topics

- Staphylococci
    - Should know – Classification, Morphology, Virulence, Pathogenecity, laboratory diagnosis and Treatment (relevant antibiotics), **MRS**
    - Desirable to know – Culture and biochemical reaction

- Streptococci
    - Should know – Classification, Morphology, Virulence and pathogenesis, Pathogenicity, laboratory diagnosis and Treatment (relevant antibiotics),
    - Desirable to know – Role of Enterococci in urinary tract infections and Str agalactiae in meningitis

- Pneumococci
    - Should know – Classification, Morphology, Haemolysis, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment (relevant antibiotics)
    - Desirable to know – Bedside test - Coaaglutination and **Vaccine**
- Neisseria
    - Should know – Morphology, Virulence and pathogenesis, Pathogenicity, laboratory diagnosis and Treatment (relevant antibiotics)
    - Desirable to know – **PPNG** and **Vaccine**, Culture and Biochemical reaction
- Corynebacteria
    - Should know – Morphology, Virulence and pathogenesis, Pathogenicity, laboratory diagnosis and Treatment, **Prophylaxis and ADS**
    - Desirable to know – Culture

- Bacillus
    - Should know – Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment
    - Desirable to know – Zoonotic diseases, Bioterrorism
- Clostridium welchii
    - Should know – Classification, Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment, **Passive prophylaxis (AGIG)**
- Clostridium tetani and botulinum
    - Should know –Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment, **Immunoprophylaxis and ATS**
- Mycobacterium tuberculosis
    - Should know – Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment, RNTCP guidelines, MDR TB, BCG Vaccination, MT and its relevance,
    - Desirable to know – Immune response
- Atypical Mycobacteria
    - Should know – Classification, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment
- Mycobacterium leprae
    - Should know – Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment, Lepra reaction
- Enterobacteriaceae – 1 (E.coli)
    - Should know – Classification, Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment, (UTI and Diarrhoeal illness), significant bacteriuria
    - Desirable to know – ESBL, Culture and biochemical reaction

- Enterobacteriaceae – 1 (Klebsiella and Proteus)
    - Should know –Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment,
    - Desirable to know – **ESBL**, Culture and biochemical reaction
- Salmonella
    - Should know –Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment, Blood culture (Typhoid and Gastroenteritis)
    - Desirable to know –Culture and biochemical reactions, Coagglutination, Vaccines, agglutination with antisera
- Shigella
    - Should know –Morphology, types, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment, Blood culture (Typhoid and Gastroenteritis)
    - Desirable to know –Culture, agglutination with antisera

- Vibrio
    - Should know –Morphology, Classification, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment, Transport media
    - Desirable to know –Culture, agglutination with antisera, vaccines, Cholera situation in India
- Pseudomonas
    - Should know –Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment, Role in **hospital acquired infections**
    - Desirable to know –Culture, Pigment production and **MBL and Superbug**
- Haemophilus
    - Should know –Morphology, Virulence and pathogenesis, Pathogenecity, laboratory diagnosis and Treatment(relevant antibiotics), Role in Meniongitis, Vaccine

    - Soft Chancre
- Spirochaetes
    - Should know –Morphology, Classification, Pathogenesis, Pathogenecity, laboratory diagnosis **– Stage wise relevant tests** and Treatment(relevant antibiotics),
    - Desirable to know –Yaws, Pinta, **Ulcerative STDs**
- Leptospira and Borrelia
    - Should know –Morphology, Pathogenesis, Pathogenecity, laboratory diagnosis and Treatment (relevant antibiotics)
    - Desirable to know –Yaws, Pinta, gingivostomatitis
- Chlamydia
    - Should know –Morphology, Pathogenesis, Pathogenecity, laboratory diagnosis and Treatment (relevant antibiotics), Trachoma, Lymphogranuloma veneruem and Psittacosis, NGU
    - Desirable to know – Cell culture, Inclusion bodies
- Mycoplasma
    - Should know – Morphology, Pathogenesis, Pathogenecity, laboratory diagnosis and Treatment (relevant antibiotics), Atypical pneumonia, NGU
- Rickettsia
    - Should know – Morphology, Pathogenecity, laboratory diagnosis and Treatment (relevant antibiotics)
    - Desirable to know – Scrub typhus and situation in India, Paul bunnel test
- Actinomycetes and Nocardia
    - Should know – Morphology, Pathogenecity, laboratory diagnosis and Treatment (relevant antibiotics)
- Miscellaneous Bacteria (Yersinia, Listeria, Campylobactor, Helicobactor etc)
    - Should know – Morphology, Pathogenecity, laboratory diagnosis and Treatment (relevant antibiotics)

- Introduction to Medical Parasitology
    - Should know – Classification of parasites, terminologies, modes of infection and a broad outline of laboratory diagnosis
- Amoebae
    - Should know – Amoebic infections – Pathogenesis and Pathogenecity, complications, Lab diagnosis
    - Desirable to know – Free-living Amoebae, primary amoebic encephalitis
- Tissue Flagellates
    - Should know – Giardia and Trichomonas – Pathogenecity and Lab diagnosis
- Haemo-flagellates
    - Should know – Leishmania and Trypanosoma – Classification, Life Cycle, Pathogenecity and Lab diagnosis
- Malaria
    - Should know – Malaria parasite Life Cycle, Pathogenesis, Pathogenecity, complications and Lab diagnosis
    - Desirable to know – Treatment and Vaccine
- Miscellaneous Protozoa
    - Desirable to know – Toxoplasma, Cryptosporidium, Isospora, B. coli – Pathogenecity and Lab diagnosis

Topics for Tutorials

- GI tract infections- Etiology and their diagnosis
- Respiratory tract infections - Etiology and their diagnosis
- Urinary tract infections - Etiology and their diagnosis
- CNS Infections - Etiology and their diagnosis
- Septicemia and PUO - Etiology and their diagnosis
- Skin and Subcutaneous tissue infections- Etiology and their diagnosis

- Wound infections - Etiology and their diagnosis
- STDs and their diagnosis
- Nosocomial infections

Fifth term

Virology, Parasitology and Mycology

Topics

- Introduction to Mycology
- Superficial Mycoses – Classification, Pathogenecity and Lab diagnosis
- Deep Mycoses -
- General Virology
    - Should know – Size, Shape, Symmetry, Structure, Resistance, Classification, Replication, Prions and Virioids
- Pathogenesis and Laboratory Diagnosis
    - Should know – Modes of infection, Collection and Transport of samples, Method of cultivation and Lab diagnosis (Relevant to viruses)
    - Desirable to know – Cell culture techniques
- Viral Immunity
    - Should know – Immunity in viral infections, Interferons (clinical applications) and Vaccines
- Pox Virus and Bacteriophage
    - Should Know – Small Pox and Molluscum contagiosum (Pathogenecity, Sample collection and Diagnosis), Structure and Applications of bacteriophage
- Herpes Viruses
    - Should know – Classification, Pathogenesis, Pathogenecity, Sample collection and relevant laboratory diagnosis
- Orthomyxovirus

    - Should Know – Influenza Virus, Antigenic shift and drift, relevance of frequent mutation, epidemics and pandemics, Pathogenesis, Pathogenecity, Sample collection and relevant laboratory diagnosis
    - Desirable to know – Annual change in Influenza vaccine
- Paramyxovirus
    - Should know – Pathogenesis, Pathogenecity, Sample collection and relevant laboratory diagnosis Desirable to know – National Measles Eradication Programme
- Picornavirus
    - Should know – Poliovirus Pathogenesis, Pathogenecity, Sample collection and relevant laboratory diagnosis, Herd Immunity, polio vaccine
    - Desirable to know – Coxsackie and Other enteroviruses
- Hepatitis Virus
    - Should Know – Enterically transmitted hepatitis, Hepatitis B and C, Pathogenesis, Pathogenecity and lab diagnosis particularly Serological markers in case of Hepatitis B, Hepatitis A and B vaccine
- Arbovirus
    - Should Know – Classification, Groups based on disease patterns, Commonly circulating Arboviruses in India like Dengue, Chikungunya, JE, KFD, Chandipura – Pathogenecity and Lab diagnosis
    - Desirable to know – Other Arboviruses
- Rhabdovirus
    - Should know – Pathogenesis and Pathogenecity, Lab diagnosis in patients, Immunoprophylaxis
    - Desirable to know – Post-mortem diagnosis and Diagnosis in animals
- Retrovirus
    - Should know – Pathogenesis and Pathogenecity of HIV, AIDS, Laboratory Diagnosis
    - Desirable to know – National AIDS Control Organization (NACO) guidelines for HIV Diagnosis

- Slow and Oncogenic Viruses
    - Should know – Characteristics of Slow Virus infections, Classification of and Diseases associated with them, Mechanism of Oncogenesis by Oncogenic viruses and relevant Oncogenic viruses
- Cestodes
    - Should know – T.saginata, T.solium, E.granulosus (Life cycle, pathogenecity and Lab diagnosis), Neurocysticercosis, Hydatid disease
- Trematodes
    - Should know – Schistosomes, Flukes(lung and liver flukes) (Life cycle, pathogenecity and Lab diagnosis)
- Intestinal Nematodes
    - Should Know – Ascaris, Ancylostoma, Entrobius, Necator, Trichuris, strongyloides (Life cycle, pathogenecity and Lab diagnosis)
- Tissue Nematodes
    - Should know – Classification, W.bancroftii, (Life cycle, pathogenecity and Lab diagnosis) – Particularly elephantiasis and diagnosis
    - Desirable to know – Mass drug distribution for Filaria, D.medinensis,

Department of Microbiology

Practical

Third Term

General Microbiology and Immunology

Topics

- Introduction to Microbiology, Microscopy and Micrometry
    - Should know – Types of Microscopes, Understanding of Microscopes and Use and Care of Microscopes, Various microorganisms

    - Skills acquired – Microscopic observations
- Morphology and Staining of Bacteria
    - Should know – Gram Stain – Principle, Technique and Applications
    - Skills acquired – Gram staining and reporting on morphology and staining reaction of bacteria
- Morphology and Staining of Bacteria
    - Should know – Z-N Stain – Principle, Technique and Applications
    - Skills acquired – Z-N staining and reporting on morphology and staining reaction of bacteria
- Sterilization and Disinfection
    - Should know – Physical and Chemical agents, Demonstration of Autoclave, Hot-Air Oven
    - Skills acquired – Knowing the concentrations and contact period of various commonly-used disinfectants
- Culture Media
    - Should know – Different types of Culture Media (Basic, Selective, Transport, Differential), Important constituents of media
    - Skills acquired – Uses of media
- Collection and Transport of Blood and Body Fluids
    - Should know – Demonstration of various containers for sample collection, transport method, demonstration of blood culture
    - Skills acquired – Blood collection technique for blood culture and sample collection
- Collection and Transport of Urine, Stool, Pus and Swabs
    - Should know – Demonstration of various containers for sample collection, transport method
    - Skills acquired – Sample collection techniques
- Isolation and Identification of Bacteria

    - Should know – Demonstration of Colony Morphology, Identification of Colonies and Biochemical Reactions

- **Antibiotic Sensitivity Tests**
    - Should know – Disc-Diffusion Method of Antibiotic Sensitivity Testing
    - Skills acquired – Interpretation of sensitivity testing, familiarity with common resistant organisms
- Serological Reactions
    - Should know – Demonstration of Agglutination and ELISA
    - Skills acquired – Bed-side performance of Immuno-chromatographic Tests
- **BMW and Universal Precautions**

Department of Microbiology

Practical

Fourth Term

Systemic Bacteriology and Protozoology

Topics

- Staphylococci and Gram Positive cocci
    - Should know – Sample collection from various sites as per pathogenecity, Culture characteristics of Staphylococci, MRSA and catalase and coagulase test, antibiotic sensitivity test
    - Skills acquired – interpretation of AST and MRSA
- Streptococci and Pneumococci
    - Should know – Sample collection for streptococcal and pneumococcal diseases, Culture characteristics, Haemolysis, ASO and CRP test, CSF collection, transport and processing
    - Skills acquired – ASO and CRP test, interpretation of interpretation of AST

- Neisseria and Gram negatice cocci
    - Should know – Sample collection for Neisserial diseasess, CSF collection, transport and processing
    - Skills acquired –Interpretation of interpretation of AST
- Corynebacteria and other Gram positive bacilli
    - Should know – Collection of sample from diphthetic lesions, Albert stain, isolation and toxin detection test
- Bacillus and Clostridia
    - Should know – Laboratory diagnosis of anthrax, destruction of biological samples, specimens and animal carcasses of anthrax, Growth requirements of Clostridia, sample collection for Gas gangrene and Tetanus and Botulism, Interpretation of RCM
- Mycobacteria
    - Should know – Sample collection and Processing of sample for TB diagnosis, ZN stain, LJ growth medium characteristics, MDR and XDR TB, diagnosis of leprosy – sample collection and smear examination
    - Skills acquired – ZN staining and AFB recognition, RNTCP guidelines and MDR and XDR TB,
- Enterobacteriaceae
    - Should kow – Demonstration of lactose fermenting and non lactose fermenting colonies, Lab diagnosis of Diarrhoea, UTI – sample collection, processing, significant bacteriuria, AST -ESBL
    - Skills acquired – Sample collection for diarrhea and UTI, interpretation of E.coli bacterial counts for UTI and ESBL, importance of Proteus inHospital acquired infections
- Salmonella and Shigella
    - Should know – Sample collection and diagnostic tests in various stages of typhoid and paratyphoid illness, Blood culture, Stool culture and AST
    - Skills acquired - Blood culture – sample collection technique, Multidrug resistant salmonella

- Vibrio
    - Should know – Collection and transport of samples for Cholera, Darting motility, Colonies on TCBS and agglutination
- Pseudomonas – Laboratory diagnosis of wound infections, Nosocomial infections, AST and antibiotic resistance particularly MBL
- Spirochaetes
    - Should know – Laboratory test for various stages of syphilis, their significance and relevance,
    - Skills acquired – RPR test
- Stool and Blood examination for Parasites

Department of Microbiology

Practical

Fifth Term

Virology, Parasitology and Mycology

Topics

- Stool examination and Blood examination
    - Should know – Microscopic findings of stool, Saline and Iodine mount preparation, Cysts and Ova, Bile stained and Non bile stained ova, peripheral blood smear examination, eosinophilia
- Mycology
    - Should know – Sabouraud media , colonies of candia, aspergillus, KOH mount,
- Lab Diagnosis of Cestodes
- Lab Diagnosis of Trematodes
- Lab Diagnosis of Intestinal Nematodes
- Lab Diagnosis of Tissue Nematodes
- Lab diagnosis of Fungal infections
- Lab diagnosis of Viral Diseases

GUJARAT UNIVERSITY

Proposal for Common Curriculum of Forensic Medicine

Term I (3rd Sem)	Forensic Medicine 1. Introduction to Forensic Medicine 2. Legal Procedures 3. Identification 4. Death & its causes 5. Post mortem changes 6. Mechanical injuries (excluding Firearms) Toxicology 1. General aspects of toxicology 2. Corrosive poisons 3. Agriculture poisons 4. Metallic poisons
Term II (4th Sem)	Forensic Medicine 1. Firearm injuries 2. Post-mortem examination & report writing (6) 3. Violent asphyxial deaths 4. Thermal injuries 5. Regional injuries 6. Medicolegal aspects of wounds 7. Virginity, Pregnancy & Delivery 8. Impotence & Sterility 9. Sexual offences Toxicology 1. Inorganic irritant poisons 2. Organic irritant poisons 3. Spinal & Peripheral poisons 4. CNS depressants 5. Somniferous poisons
Term III (5th Sem)	Forensic Medicine 1. Medical law & Ethics 2. Abortion 3. Infanticide 4. Forensic Psychiatry 5. Blood stains & FSL 6. Anaesthetic deaths 7. Starvation 8. Post-mortem artefacts Toxicology 1. Deliriant poisons 2. Cardiac poisons 3. Psychotropic substance 4. Drug dependence & substance abuse 5. Asphyxiants 6. Food toxins 7. Examination of slides 8. Post-mortem report writing (4) **See Annexure II for detailed syllabus**

Internal Examination Pattern

	Time : At the end of	Syllabus
1st internal	3rd Semester (6 months)	As per term 1 (Semester 3)
2nd internal	4th Semester (1 year)	As per term 2 (Semester 4)
Prelim	5th Semester	Full

Theory :

Paper scheme for 1st and 2nd and prelim. Internal examinations

1 paper of total 40 marks & 2 hours duration

Q.1 Describe in detail [2 (x5) out of 3] (10)

a. Forensic Medicine

b. Forensic Medicine

c. Toxicology

Q.2 Write short notes [3 (x4) out of 4] (12)

a. Forensic Medicine

b. Forensic Medicine

c. Forensic Medicine

d. Forensic Medicine

Q.3 Write short notes [3 (x4) out of 4] (12)

a. Toxicology

b. Medical Jurisprudence,

c. Forensic Psychiatry

d.

Q.4 Describe in 2 or 3 lines [6 (x1) out of 8] (6)

a. Forensic Medicine
b. Forensic Medicine
c. Forensic Medicine
d. Forensic Medicine/Toxicology
e. Toxicology
f. Toxicology
g. Medical Jurisprudence
h. Forensic Psychiatry

Practical : Total marks 40

2 Table Viva : (40)

INTERNAL MARKS CALCULATION

Theory : Maximum Marks : 10

Practical : Maximum Marks : 10

Trait	Marks (Maximum)
1st Internal Examination	2
2nd Internal Examination	2
Preliminary Examination	4
Attendance/Record book	2
Total	**10**

ANNEXURE I

OBJECTIVES

1. To make the students capable of **carrying out the clinical examination of different medico-legal cases like :**
    a. Victim of assaults and accidents (both vehicular and Industrial hazards)- Injury report.
    b. Examination of Accused of Sexual Offences
    c. Examination of victim of Sexual Offences
    d. Cause of death
    e. Age Estimation
    f. Potency Examination
    g. Regarding Mental Condition
    h. Alcohol intoxication cases and Preparing proper reports.
2. To develop confidence in the students so that **they must be able to conduct the Postmortem and making observations** independent and forming the opinion correctly and logically.
3. To make the students capable **of examination of human bones and to fix the Age, Sex-stature of the person.**
4. To make the students **capable of Identifying Poisoning cases** and to observe the Medico-legal formalities in such cases and to preserve the evidence and to forward them to the various authorities for identification.
5. To make the students **conscious of ethical practices** and to warn them of professional misconduct and its consequences.
6. A medical student should be competent in **diagnosis and management of common health hazard problems** of the individual and the community.
7. A medical student should be competent to practice preventive, promotive, curative and rehabilitative medicine in respect of various poisoning cases.
8. A medical student should appreciate rationale for different therapeutic modalities be familiar with the administration of the ***"essential drugs "*** and their common side effects.
9. A medical student should be able to appreciate the socio – psychological, cultural, economic and environmental factors affecting health and develop humane **attitude towards the patients** in discharging one's professional responsibilities.
10. A medical student should possess the attitude for continued self learning.
11. A medical student should be competent to work in a variety of health care settings.

12. A medical student should have personal characteristics and attitude required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.
13. Students should be able to **identify the basic medico legal aspects of hospital and general practice.**
14. Students should be able to define the **medico legal responsibilities** of a general physician while rendering community service.
15. Students should be able to appreciate **the physician's responsibilities** in criminal matters and respect for the codes of medical ethics.
16. Students should be able to identify, diagnose , manage and appreciate legal aspect of common acute and chronic poisonings.
17. Students should be able to describe the medico legal aspects and findings of postmortem examination in case of death due to common un-natural conditions and Poisonings.
18. Students should be able to detect occupational and environmental poisoning, prevention and epidemiology of common poisonings and their legal aspects particularly pertaining to ***Workmen's Compensation Act.***

SKILLS

1. Students should be able to make observations and logical inferences in order to initiate inquiries in criminal matters and medico legal problems.
2. Students should be able to diagnose and treat common emergencies in poisoning and manage chronic toxicity.
3. Students should be able to make observations and interpret findings at Postmortem examination.
4. Students should be able to observe the principles of medical ethics in the practice of his profession.

INTEGRATION

Department shall provide **an integrated approach** towards allied disciplines like: Pathology, Radiology, Forensic Sciences, Hospital Administration etc. to impart training regarding Medico legal responsibilities of Physicians at all levels of health.

Total Teaching hour : 100

ANNEXURE II

DETAILED SYLLABUS

3rd Semester

Sr No.	Topic	Teaching hours		Total Teaching Hours
		Theory Lecture (Hours)	Practical (Hours)	
	Forensic Medicine			
1	Introduction	1 (x1) = 1	-	01
2	Legal procedures	2 (x1) = 2	-	02
3	Identification	4 (x1) = 4	3 (x2) = 6	11
4	Death & its causes	2 (x1) = 2	1 (x2) = 2	04
5	Post mortem changes	3 (x1) = 3	-	03
6	Mechanical injuries (excluding Firearms)	3 (x1) = 3	-	03
	Toxicology			
1	General aspects	-	3 (x2) = 6	06
2	Corrosives	-	2 (x2) = 4	04
3	Agriculture poisons	-	2 (x2) = 4	04
4	Metallic poisons	-	2 (x2) = 4	04
Total		**16 (x1) = 15**	**13 (x2) = 26**	**42**

4th Sem

Sr No.	Topic	Teaching hours		Total Teaching Hours
		Theory Lecture (Hours)	Practical (Hours)	
	Forensic Medicine			
1	Firearm injuries	2 (x1) = 2	1 (x2) = 2	04
2	Post mortem examination	-	1 (x2) = 2	02
3	Post mortem report writing (6)	-	3(x2) = 6	06
4	Violent asphyxia	3 (x1) = 3	-	03
5	Thermal injuries	2 (x1) = 2	-	02
6	Regional injuries	2 (x1) = 2	-	02
7	Medico legal aspects of wounds	2 (x1) = 2	1 (x2) = 2	04
8	Virginity, Pregnancy, Delivery	2 (x1) = 2	-	02
9	Impotence & sterility	1 (x1) = 1	1 (x2) = 2	03
10	Sexual offences	1 (x1) = 1	2 (x2) = 4	05
	Toxicology			
1	Inorganic irritants	-	1 (x2) = 2	02
2	Organic irritants	-	4 (x2) = 8	08
3	Spinal & Peripheral poisons	-	1 (x2) = 2	02

4	CNS depressants	1 (x1) = 1	2 (x2) = 4	05
5	Somniferous poisons	-	2 (x2) = 4	04
Total		**16 (x1) = 16**	**19 (x2) = 38**	**54**

5th Sem

Sr No.	Topic	Teaching hours		Total Teaching Hours
		Theory Lecture (Hours)	Practical (Hours)	
	Forensic Medicine			
1	Medical law & Ethics	2 (x1) = 2	-	02
2	Abortion	2 (x1) = 2	-	02
3	Infanticide	2 (x1) = 2	-	02
4	Forensic Psychiatry	1 (x1) = 1	-	01
5	Blood stains & FSL	1 (x1) = 1	-	01
6	Anaesthetic deaths	1 (x1) = 1	-	01
7	Starvation & Post mortem artefacts	1 (x1) = 1	-	01
	Toxicology			
1	Deliriant Poisons	-	1 (x2) = 2	02
2	Cardiac poisons	-	1 (x2) = 2	02
3	Psychotropics	-	1 (x2) = 2	02
4	Drug dependence & substance abuse	-	1 (x2) = 2	02
5	Asphyxiants & Food toxins	-	1 (x2) = 2	02
6	Examination of Slides	-	1 (x2) = 2	02
7	Post mortem report writing (4)	-	2 (x2) = 04	04
Total		**10 (x1) = 10**	**8 (x2) = 16**	**26**

Total Teaching Hours

Semester	Theory	Practical	Total
3rd	15	26	41
4th	16	38	54
5th	10	16	26
Total	**41**	**80**	**121**

STRUCTURED SYLLABUS

Sr No.	Topic	To be covered in Theory	To be covered in Practical
		FORENSIC MEDICINE	
1	Introduction to Forensic Medicine	Introduction to Forensic Medicine	---
2	Legal procedures	- Indian legal system - Inquest - Summons - Witness - Medical evidence - Record of Evidence -Conduct of Doctor in witness box - Procedure of criminal trial - Investigation of scene of death	---
3	Identification	- Race determination - Sex determination - Age determination - Forensic odontology - Stature estimation - Various parameters of identification viz. Fingerprint, Foot print, Palatoprint, Lip prints, Ear prints, Tattoo, Scar, Hair	- Examination of Bones & Dentition - Age assessment in Male & Female - X-ray examination for age determination
4	Death & its causes	- Types of death - Modes of death - Manner of death - Causes of death	- Medical certification of cause of death
5	Post mortem Changes	- Immediate changes - Early changes - Late changes - Estimation of PM interval - Embalming	---
6	Mechanical Injuries	- Injury - Injuries due to blunt force - Injuries due to sharp force - Firearm injuries	- Examination of weapons
7	Post-mortem examination (Medico legal autopsy)	---	- Indications - Objectives -Various incisions - Organ delivery methods - Dissection of various organs - Sample collection, preservation - Exhumation - Autopsy video
8	Violent asphyxia deaths	- General pathophysiology of asphyxia - Hanging - Strangulation - Throttling	---

		- Drowning - Other forms of Asphyxial deaths	
9	Thermal injuries	- Injuries due to Hypothermia - Injuries due to Heat - Flame burns - Scalds - Electrocution - Lightning - Chemical burns - Radiation injuries	---
10	Regional injuries	- Forensic anatomy of skull - Skull fractures & intra cranial injuries - Other regional injuries - Transportation injuries	---
11	Medico legal aspects of wounds	- Homicide - Hurt - Grievous hurt - Causes of death due to wound - Torture - Dowry deaths - Trauma & death	- Injury report writing
12	Virginity, Pregnancy & Delivery	- Virginity - Signs of Pregnancy - Signs of Delivery : Live & Dead	---
13	Impotence & Sterility	- Impotence : Definition & causes - Sterility : Definition & causes - Sterilization procedures - Artificial reproductive techniques	---
14	Sexual offences	- Rape - Un natural sexual offences - Sexual perversions	- Examination of Victim of sexual offence - Examination of Accused of sexual offence
15	Abortion	- Definition & types - Methods of criminal abortion - Evidence of criminal abortion : Live & dead - MTP Act	--
16	Infanticide	- Definition & causes - Viability - Signs of live birth - Sudden infant death syndrome - Battered baby syndrome	---
17	Blood stains & FSL	- Blood stains : collection, preservation & examination - FSL : Role of FSL Various techniques	---
18	Starvation	Starvation	---
19	Post mortem artefacts	Post mortem artefacts	---

MEDICAL JURISPRUDENCE			
1	Medical law & Ethics	- Medical council of India & State - Professional misconduct - Duties of medical practitioner - Professional negligence - Euthanasia - Consent - Malingering	---
FORENSIC PSYCHIATRY			
1	Forensic Psychiatry	- Various psychiatric illnesses - Insanity - Restraint of the insane - Civil & criminal responsibilities of insane - Mental health Act	---
TOXICOLOGY			
1	General aspects of toxicology	---	- Definition & classification of Poisons - Common household poisons & antidotes - Diagnosis of poisoning - Duties of medical practitioner in case of poisoning - Treatment of poisoning cases - Sample collection & preservation in case of poisoning
2	Corrosive poisons	---	- Acids - Alkalis etc.
3	Agriculture poisons	---	- Organophosphorus - Organochlorines - Carbamates - Alluminium phosphide
4	Metallic poisons	---	- Arsenic - Lead - Mercury - Copper - Iron etc.
5	Inorganic irritants	---	- Phosphorus - Chlorine - Iodine etc.
6	Mechanical Poisons	---	- Powdered glass - Hair - Stones etc.
7	Organic irritants		
	Vegetable	---	- Ricinus communis - Croton tiglium - Abrus precatorius - Capsicum annum - Semecarpus anacardium

			- Calotropis - Ergot - Plambago etc.
	Animal	---	- Snakes - Scorpion - Cantherides - Bees & wasps etc.
8	Spinal & Peripheral poisons	---	- Strychnine - Hemlock - Curare etc.
9	CNS depressants	- Ethyl alcohol - Methyl alcohol - Barbiturates	- Certificate of drunkenness
10	Somniferous poisons	---	- Opium etc.
11	Deliriant poisons	---	- Datura - Cannabis - Cocaine
12	Cardiac poisons	---	- Quinine - Digitalis - Tobacco - Aconite etc.
13	Psychotropics	---	- Amphetamines - Benzodiazepines - Psychedelics etc.
14	Drug dependence & substance abuse	---	- Dependence, abuse, addiction with types - Volatile substance abuse - Investigation in case of drug abuse death - Narcotics Drug & Psychotropic Substance Act (NDPS)
15	Asphyxiants	---	- Carbon dioxide - Carbon monoxide - Hydrogen cyanide - War gases etc.
16	Food poisons	---	- Bacterial food poisoning - Mycotoxicosis - Food adulteration

Department of ENT

UG CURRICULUM OF OTORHINOLARYNGOLOGY

OBJECTIVES

At the end of the posting the student should be able to perform the following;-

1. Examination and diagnosis of common ENT problems
2. Common investigative procedures and their interpretation to diagnose patients
3. Treat common ENT problems at primary care centre and rational use of commonly used drugs and their adverse effects
4. Train to perform ear syringing, nasal packing and tracheostomy.
5. Assist common surgical procedures.
6. Awareness of preventive otology and head neck cancer for public guidance.

Clinical training

Two months on rotation basis would consist of

1. Clinical aspect of ENT examination
2. Case discussion on CSOM, DNS, Nasal polyp, head and neck malignancy
3. Orientation to ENT instruments , specimens and X- RAY
4. To teach OPD procedures
5. Prevention of malignancies

THEORY and PRACTICAL

During 6^{th} and 7^{th} semester

Schedule for **6^{th} SEMESTER**

1. Introduction to ENT and Head Neck Surgery
2. Rhino sinusitis, nasal polyp, fungal disease of nose
3. Secretory otitis media,ASOM,acute mastoiditis CSOM , different ear surgeries
4. Deafness – diagnosis and management
5. Epistaxis, faciomaxillary injuries
6. Rhinoplasty, coanal atresia
7. Benign and malignant lesions – diagnosis and management

SCHEDULE FOR **7^{th} SEMESTER**

1. Facial paralysis and their management
2. Assessment of Vertigo
3. Granulomatous lesions
4. Neck space pathologies
5. Neurological disorders of the larynx

COURSE CONTENT

Nose
DNS, nasal polyp, Angiofibroma, Tumours both benign and malignant, granulomatous lesions, fungal lesion

Oral cavity and Oropharynx
Tonsillitis, leukoplakia, pharyngitis, peritonsillar abscess, candiadis

Ear
Perichondritis, otitis externa, SOM, ASOM, CSOM

larynx
Hypopharynx and Larynx
Benign and malignant tumors, vocal cord nodule, vocal polyp, carcinoma,

Neck
Lymphadenitis , metastatic neck mass, benign and malignant tumour of neck

Emergencies
Respiratory obstruction, Foreign Bodies in ENT, Nasal bleeding and trauma

Instruments
Thudicum nasal speculum
Killians self retaining nasal speculum
Tielley Lichwitz antrum puncture trochar and cannula
Higginsons Rubber Syringe
Ballenger's swivel knife
Walsham forcep
Luis forcep
Tilleys forcep
St. Clair Thomson post nasal mirror
Simpson antral syringe
Jobson horne probe
Seigle pneumatic speculum
Tuning fork
Barany noise box
Head mirror
Toynbee ear speculum
Boyle davis mouth gag
Lack's tongue depressor
Draffins bipod metallic stand
Eve's Tonsillar snare
Adenoid curette
Tracheal dilator

Trachestomy tube
Laryngo/broncho/esophagoscope

Operative procedure

- Tonsillectomy
- Adenoidectomy
- Septoplasty
- Caldwell-luc operation
- Tympanoplasty
- Mastoidectomy
- Biopsy of carcinomatous lesion
- Laryngo/broncho/esophagoscopy
- Neck nod biopsy

X-rays

- Paranasal nasal sinus
- Nasopharynx lateral view
- Mastoid
- Soft tissue neck

Cases for practical exam

- CSOM
- Cholesteatoma
- Nasal polyp
- Tonsillitis and adenoid hypertrophy
- DNS
- Thyroid swelling
- Neck swelling (lymphadenitis)
- Submucus fibrosis

Suggested books

- Logan turner; text book of ENT
- Scott brown's otolaryngology- 7th edition
- P.L.dhingra; text book of ENT
- Vikas sinha;practical book of ENT
- Mohan bansal;textbook of ENT

Third M.B.B.S (Part I) Prelim examination

Theory

E.N.T (Otorhinolaryngology)

_____ Medical college

Date: **Marks :40**

Time: 2hrs

Instruction: 1. Figure to the right indicate full marks.
2. Draw diagrammed-necessary.
3. Write legibly.

Q-1. Writes notes on (Any two out of three) 2x5=10 marks

Basic science and appilcation

Q-2. Writes shorts note on (Any three out of four) 3x4=12 marks

Clinical topics

Q-3. Write shorts note on (Any three out of four) 3x4=12 marks

Audiology and clinical topic

Q-4. Write answer to the point in two or three sentences (Any six out of eight) 6x1=6 marks

Short one or two line questions.

Practical (40 marks)

One clinical case-25 marks
Oral viva (instrument, bone, x-rays, specimens ,audiograms, drugs)-15marks

Formation of internal assessment

Internal assessment=20 marks

Theory (10 marks)

1. 1st Internal exam-4marks
2. Preliminary exam-6marks

Practical (10 marks)

1. Day to day assessment /log book assessment -2marks
2. Term ending exam- 3 marks
3. Preliminary exam-5marks

OPHTHALMOLOGY

Clinical Posting schedule

IV 2 Weeks

VI 4 Weeks

VII 4 Weeks

IV Term :

clinical posting hrs: 9AM to 11.30AM

CLINICAL TEACHING	PRACTICAL
Introduction Examination of Normal eye Structures Symptomatology I Symptomatology II Visual Assessment Ocular Exam I Ocular Exam II Introduction of Basic Instrument Ocular Procedures Refractive Error Basic Drugs Common diseases Extra Ocular Muscles	History Taking Symptomatology in Ophthalmology Observation of ocular procedures Approach to the patient Visual Assesment IOP Measurment

MCQs : (term Ending)
20 marks (if attendance is >75%)

VI Term: 4 weeks

CLINICAL TEACHING Time: 9AM to 11.30 AM	
Revision	Histroy Taking
Revision	Torch Light Examination
Ocular Examination	Visual Assesment
Lids & Lacrimal apparatus	A scan
Conjunctiva & Sclera	Lid Eversion
Cornea I	Corneal Sensation
Cornea II	Regurgitation Test
Cornea III	K.Staining
Glaucoma I	Tonometry
Glaucoma II	Contact Lens
Glaucoma III	Correction of Refractive Errors
Lens I	Schemer Test
Lens II	Sac Syringing
Lens III	Gonioscopy

Iris & Pupil ,Anterior Chamber Iris & Pupil ,Anterior Chamber Refractive Error I Refractive Error II Refractive Error III Ophthalmoscopy Therapeutics agents Surgical Instruments Ocular Emergencies Ocular Investigation Case Presentation Extra ocular Muscles Ocular Manifestation of Systemic diseases	Perimetry Keratometry B scan Yag Laser Ocular Radiology Ophthalmoscopy Ocular Manifestation of sys.diseases Ocular Anaesthesia Drugs & Instruments

Term Ending Exams (First Internal Examination) / (if attendance is >75%)

- **Ant. Segment Theory = 40 Marks**
- **Ant. Segment Practical = 40 Marks**
- Clinical case presentation = 25 MARKS
- Viva voce = 15 marks

VII Term: 4 Week

CLINICAL TEACHINGTime: 9AM to 11.30 AM	
Revision Retina I , II, III Squint I Squint II Orbit I Orbit II Optic nerve Diseases Optic Disc Visual Pathway Blindness Drug Reaction Ocular Emergencies Nutritional deficiency Ocular Trauma Refractive Error Lid,LacrimalAppratus Conjuctiva , Sclera, Cornea Glaucoma Lens Uvea Drug Instruments Recent Adavances	History Taking Case Presentation • Red Eye • Cataract • Chalazion • Pterygium • Stye • Pseudophakia • Aphakia • K Ulcer • K.Opacity • Entropion • Ectropion • K.Edema • Dacryocystitis • Glaucoma • Uveitis Ophthalmic Drugs Ophthalmic Instruments Ocular Emergency Ocular Procedures Refraction Cover test

PRELIMINARY THEORY EXAM: 40 MARKS

PRELIMINARY PRACTICAL EXAM : Total marks = 40

Clinical case presentation = 25 MARKS

Viva voce = 15 marks

INTERNAL MARKS CALCULATION

THEORY (10)	PRACTICAL (10)
6 Marks = from marks obtained in preliminary theory exam	**6 Marks** = from marks obtained in preliminary practical exam
4 Marks = from marks obtained in 1ST internal theory exam	**4 Marks** = from marks obtained in 1ST internal practical exam

CLASS ROOM LECTURES LIST – VI SEMESTER (2 LECTURES/WK)

1. Normal anatomy of an eye
2. Aqueous Humour
3. IOP
4. Visual Acuity
5. Myopia
6. Hypermetropia
7. Astigmatism, Presbyopia
8. Anatomy of Lid
9. Common lid diseases
10. Lid tumors
11. Entropion
12. Ectropion
13. Ptosis
14. Pterygium
15. Conjunctivitis
16. Trachoma
17. Vit. A deficiency
18. Episcleritis, Scleritis
19. Watering eye
20. Dacryocystitis
21. Anatomy of Cornea
22. Dry eye
23. Bacterial Corneal ulcer
24. Viral corneal ulcer
25. Fungal Corneal ulcer
26. Corneal opacity
27. Bullous keratopathy
28. Keratoplasty
29. classification Of Cataract
30. clinical features of cataract
31. pre operative assessment of a case of cataract
32. surgical management of cataract
33. complications of cataracrt surgery
34. tonometry
35. anatomy od anterior chamber angle classification of glaucoma
36. POAG
37. primary angle closure glaucoma
38. secondary glaucoma
39. congenital glaucoma
40. medical management of glaucoma
41. surgical management of glaucoma

CLASS ROOM LECTURES LIST – VII SEMESTER (2 LECTURES/WK)

1. Eye Banking
2. Blindness
3. NPCB, Vision 20/20
4. Enucleation& Evisceration
5. Classification Of Uveitis
6. Acute Anterior Uveitis
7. Chronic Uveitis
8. Posterior Uveitis
9. Endophthalmitis, Panophthalmitis
10. Common Ocular Emmergencies
11. Extraocular Muscles
12. Binocular Single Vision
13. Esotropia
14. Exotropia
15. Paralytic Squint
16. Assessment Of Squint
17. Amblyopia
18. Anatomy Of Vitreous Humour
19. Anatomy Of Retina
20. Retinal Detchment
21. Diabetic Retinopathy
22. Hypertensive Retinopathy
23. Vitreous Haemorrhage
24. Retinitis Pigmntosa
25. Macular Edema
26. Age Related Macular Degeneration
27. Retinoblastoma
28. Choroidal Melanoma
29. Anatomy Of Optic Nerve
30. Papilloedema
31. Papillitis
32. Optic Atrophy
33. Proptosis
34. Thyroid Eye Disease
35. Blut Ocular Trauma
36. Penetrating Eye Injury
37. Chemical Injuries
38. Ophthalmoplegia
39. Bell's Plasty
40. Diplopia
41. Lasers In Ophthalmology
42. Vital Stains
43. Investigative Procedures In Glaucoma
44. Investigative Procedures In Retina

45. Retinal Vascular Diseaese
46. Ophthalmic Drug
47. Tuberculosis And Eye
48. Collagan Diseases And Eye
49. Hiv And Eye
50. Contact Lenses
51. Eye Camp
52. Visual Acuity
53. Nystagmus
54. Recent Advances
55. Surgical Instruments
56. Optics
57. Revision

FIRST INTERNAL THEORY EXAMINATION PAPER STYLE

Total Out Of 40

Q 1: Write any two out of three (10)

Refraction ,Optics,Anatomy,Embryology,Physiology

Q 2 :Write Any Three Out Of Four (12)

Anterior Segment

Q 3 :Write Any Three Out Of Four (12)

Anterior Segment , ophthalmic procedure, recent advances, Lasers, ocular pharmacology

Q 4: Write any six out of Eight (6)

Objective Question

PRELIMINARY THEORY EXAMINATION PAPER STYLE

Total Out Of 40

Q 1: Write any two out of three (10)

Refraction ,Optics,Anatomy,Embryology,Physiology

Q 2 :Write Any Three Out Of Four (12)

Anterior Segment

Q 3 :Write Any Three Out Of Four (12)

Posterior Segment, Neuroophthalmology, community Aspect, Systemic Diseases,

recent advances, Lasers, contact lens

Q 4: Write any six out of Eight (6)

Objective Question

COMMUNITY MEDICINE – UG Syllabus – Gujarat University – 10.12.2014

Schedule for 1st year MBBS (1st semester + 2nd semester)

List of theory lectures/tutorials/seminars
1. Introduction of community medicine and history of public health
2. Definition of health and concept of health
3. Spectrum and determinants of health
4. Indicators of health
5. Concept of disease
6. Concept of risk factors and iceberg phenomenon
7. Concept of prevention and control and modes of intervention
8. Demography and population trends
9. Doctor-patient relationship
10. Rights and responsibilities of health
11. Social classification
12. Types of family - Role of family in health and disease
13. Community behaviour and determinants
14. National health day celebration
15. Health economics and social security
16. Process of socialization
List of group discussion topics
1. Health problems in Gujarat and India
2. Ecology and health
3. Census
4. Cultural factors in health and disease
5. Urbanization and industrialization
6. Health care delivery system
7. Social aspects of demography
8. Social factors in health and disease
9. Self care
10. Preventive aspects of disease in community
11. Social problems and their prevention
12. Role play on communication skills
13. Indicators of health
14. Health education demonstration
List of field visits
1. Social institution (blind men school /orphanage/old age home/deaf and dumb school)
2. Physiotherapy department
3. Psychiatry OPD
4. STD clinic
5. Medical record section
6. Malaria clinic (NVBDCP)
7. Post partum unit
8. Blood bank
9. CSSD
10. RNTCP
11. Ward visit and elementary nursing
12. Civic center
13. RHTC
14. UHTC
15. Anganwadi
16. ICTC
17. Community visit 18. BMW/incinerator. 19.Visit to trauma centre

Schedule for 2nd MBBS (3rd semester + 4th semester)

List of theory lectures/tutorials/seminars

1.	Nutrition and health	2.	Social aspect of nutrition
3.	PEM-I	4.	PEM-II
5.	Nutritional anemia	6.	IDD
7.	Xerophthalmia	8.	Nutritional requirements
9.	Fluorosis and lathyrism	10.	Dietary goals and balanced diet
11.	Assessment of nutritional status	12.	Nutritional factors in selected diseases
13.	Food hygiene-legal aspects	14.	Food born diseases- food toxicants
15.	Food additives-food fortification-food adulteration	16.	Community nutrition programmes
17.	ICDS	18.	Epidemiology- Introduction
19.	Epidemiological approach-basic measurements	20.	Measurement of morbidity
21.	Measurement of mortality	22.	Descriptive epidemiology-I
23.	Descriptive epidemiology-II	24.	Case control study
25.	Cohort study	26.	Experimental studies- RCT
27.	NRCT, Uses of epidemiology	28.	Association and causation
29.	Infectious disease epidemiology-definitions	30.	Dynamics of disease transmission
31.	Modes of transmission	32.	Susceptible host and host defense
33.	Disease prevention and control	34.	Investigation of epidemic
35.	Screening – I	36.	Screening – II
37.	Introduction to environment and health	38.	Air Pollution - I
39.	Air Pollution – II	40.	Radiation and health
41.	Housing and health	42.	Noise and health
43.	Village sanitation	44.	Camp sanitation
45.	Solid waste management	46.	Excreta disposal
47.	Disaster management	48.	Introduction of communicable diseases
49.	Small pox and chicken pox	50.	Measles
51.	Mumps and Rubella	52.	Influenza
53.	Pertussis	54.	Acute Respiratory Infections
55.	Tuberculosis	56.	RNTCP
57.	Polio	58.	Polio Porgramme
59.	Viral Hepatitis – I	60.	Viral Hepatitis – II
61.	Diarrheal diseases	62.	Cholera
63.	Enteric fever	64.	Food poisoning

Schedule for 3rd MBBS (6th semester + 7th semester)

List of theory lectures/tutorials/seminars

1. Malaria- I	2. Malaria – II
3. Dengue syndrome	4. Filariasis
5. Japanese encephalitis	6. Leptospirosis
7. Plague, kala azar, other vector borne diseases	8. NVBDCP
9. Rabies	10. Leprosy – I
11. Leprosy – II	12. Tetanus
13. STDs	14. HIV – I
15. HIV – II + NACP	16. Nosocomial infection
17. Emerging and re-emerging infections	18. Hook worms
19. Other worm infestations	20. Introduction to non-communicable diseases
21. CVD – I	22. CVD – II
23. Hypertension	24. RHD
25. Stoke	26. Cancer – I
27. Cancer – II	28. Diabetes
29. Obesity	30. Blindness
31. Blindness + NPCB	32. Accidents and Injuries
33. Health hazards of tobacco	34. Mental health
35. Introduction to RCH/MCH	36. Antenatal care
37. Intranatal care	38. Postnatal care
39. ENBC	40. LBW baby
41. MMR	42. IMR
43. Perinatal mortality	44. Under five mortality and under five clinic
45. School health program	46. Geriatrics
47. RCH programme – I	48. RCH programme – II
49. NRHM	50. HMIS
51. IDSP	52. National programme for prevention and control of diabetes, CVDs and stroke
53. National health days	54. Levels of health care and primary health care
55. Health care delivery system	56. PHC and CHC – IPHS
57. Various Health committees	58. Health insurance
59. International health regulations and international health organizations	60. Health planning and management – I
61. Health planning and management – II	62. Evaluation of health services

TOPICS FOR COMMUNITY POSTINGS/PRACTICALS

1st Community Posting	2nd Community Posting	3rd Community Posting
List of topics	**List of topics**	**List of topics**
1. Introduction to biostatistics, Types of data, Data presentations	1. Entomology – 1	1. Clinico-social case study – 1
2. Measures of central tendency, measures of variability	2. Entomology – 2	2. Clinico-social case study – 2
3. Sampling methods	3. Entomology – 3	3. Clinico-social case study – 3
4. Normal distribution, normal distribution curve	4. Entomology – 4	4. Clinico-social case study – 4
5. Field visit	5. Filed visit	5. Field visit
6. Nutrition – 1	6. IMNCI – 1	6. Biostatistics – 1
7. Nutrition – 2	7. IMNCI – 2	7. Biostatistics – 2
8. Nutrition – 3	8. IMNCI – 3	8. Biostatistics – 3
9. Nutrition – 4	9. IMNCI – 4	9. Biostatistics – 4
10. Field visit	10. IMNCI – 5	10. Field visit
11. Water – 1	11. IMNCI – 6	11. Occupational health – 1
12. Water – 2	12. IMNCI – 7	12. Occupational health – 2
13. Water – 3	13. IMNCI – 8	13. Occupational health – 3
14. Water – 4	14. Field visit	14. Occupational health – 4
15. Field visit	15. Field visit	15. Field visit
16. Immunization – 1	16. Biostatistics – 1	16. Epidemiological exercises – 1
17. Immunization – 2	17. Biostatistics – 2	17. Epidemiological exercises – 2
18. Family Planning – 1	18. Biostatistics – 3	18. Epidemiological exercises – 3
19. Family Planning – 2	19. Biostatistics – 4	19. Epidemiological exercises – 4
20. Field visit	20. Field visit	20. Field visit
21. Health education and communication – 1	21. Environment – 1	21. RCH – 1
22. Health education and communication – 2	22. Environment – 1	22. RCH – 2
23. Health education and communication – 3	23. Environment – 3	23. RCH – 3
24. Health education and communication – 4	24. Environment – 4	24. Genetics
Suggested field visits	**Suggested field visits**	**Suggested field visits**
1. Kotarpur – water works	1. PHC – RHTC	1. Industry –occupation related
2. Sewage treatment plant	2. UHTC	2. De-addiction center
3. Dairy	3. UHC (entomology)	3. ESIS
4. Anganwadi	4. Community oncology center	4. NGO
5. Family visit	5. Public health laboratory	5. EMRI
	6. Infectious disease hospital	6. DoTs/ TB hospital
	7. CHC	

Department of Community Medicine,

1st Internal Examination

Section – I

Q-1. Write notes on: (Any two) 12 Marks
Q-2. Write short notes on: (Any three) 12 Marks
Q-3. Write short notes on: (Any two) 6 Marks

Syllabus:

1. Man and Medicine: Towards Health for all.
2. Concepts of Health and Disease.
3. Demography
4. Social sciences and Health.
5. Nutrition and Health.
6. Communication for health education

Section – II

Q-1. Write notes on: (Any two) 12 Marks
Q-2. Write short notes on: (Any three) 12 Marks
Q-3. Write short notes on: (Any two) 6 Marks

Syllabus:

1. Environment and Health.
2. Genetics and Health.
3. Principles of Epidemiology and Epidemiological methods.
4. Screening for diseases.
5. Epidemiology of Communicable diseases covered.

2nd Internal Examination

Section – I

Q-1. Write notes on: (Any two) 12 Marks
Q-2. Write short notes on: (Any three) 12 Marks
Q-3. Write short notes on: (Any two) 6 Marks

Syllabus:

1. *Hospital waste management*
2. *Disaster management*
3. *Health care of community*
4. *Epidemiology of Communicable diseases*

Section – II

Q-1. Write notes on: (Any two) 12 Marks
Q-2. Write short notes on: (Any three) 12 Marks
Q-3. Write short notes on: (Any two) 6 Marks

Syllabus:

1. *Epidemiology of Communicable diseases*
2. *Epidemiology of Non communicable diseases*
3. *National health programmes*
4. *International health*

Department of Community Medicine

(Preliminary Examination)

Paper Format (Paper-1)

Section : I

Question : 1 Write short notes. **(Any Two)** **(12 Marks)**

Total Three Questions (a, b & c)

Topic : Concepts of Health and Disease. General Epidemiology

Question : 2 Write brief notes**. (Any Three)** **(12 Marks)**

Total Four Questions (a, b, c & d)

Topic : Environment & Health Entomology

Question : 3 Write short notes**. (Any Two)** **(6 Marks)**

Total Three Questions (a, b & c)

Topic : Nutrition & Health

Section : II

Question : 4 Write short notes. **(Any Two)** **(12 Marks)**

Total Three Questions (a, b & c)

Topic : Systemic Epidemiology

Question : 5 Write brief notes**. (Any Three)** **(12 Marks)**

Total Four Questions (a, b, c & d)

Topic : Social Science & Health Information and Basic Medical Statistics

Question : 6 Write answers to the point in two or three sentences. **(Any Six)**

Above all Topics **(6 Marks)**

Department of Community Medicine

(Preliminary Examination)

Paper Format (Paper-2)

Section : I

Question : 1) Write short notes. **(Any Two)** **(12 Marks)**

Total Three Questions (a, b & c)

Topic : Preventive Medicine in Obstetrics, Pediatrics and Geriatrics.

Demography and Family Planning

Question : 2) Write brief notes. **(Any Three)** **(12 Marks)**

Total Four Questions (a, b, c & d)

Topic : National Health Programme & School Health

Question : 3) Write short notes**. (Any Two)** **(6 Marks)**

Total Three Questions (a, b & c)

Topic : Genetics & Health, Mental Health

Section : II

Question : 4) Write short notes. **(Any Two)** **(12 Marks)**

Total Three Questions (a, b & c)

Topic : Occupational Health & International Health

Question : 5) Write brief notes. **(Any Three)** **(12 Marks)**

Total Four Questions (a, b, c & d)

Topic : Health Education & Communication

Health Planning & Management

Health Care of Community

Question : 6) Write answers to the point in two or three sentences**. (Any Six)**

Above all Topics **(6 Marks)**

Prelim Practical

Sr.no	Exercise	Topics	Time	Marks
1.	Statistical exercise	Two questions: 5 marks each One from Biostatistics One from vital statistics	20 min	10
2.	Epidemiological exercise	Two questions: 5 marks each	20 min	10
	Total (1+2)	---------	40 min	20
3.	Spot exercise	5 spots: 2 marks each Whole syllabus	10 min	10
4.	Viva	Whole syllabus	-----	10
Total (1+2+3+4)				40

Calculation of internal marks

Theory : Total internal marks – 20

Sr. no	Marks	Subdivision
1.	5 marks	Out of obtained marks in first internal exam (at the end of 4th sem. - 1 paper of 60 marks)
6	5 marks	Out of obtained marks in second internal exam (at the end of 6th sem. - 1 paper of 60 marks)
7	10 marks	Out of obtained marks in Prelim exam (at the end of 7th sem. - 2 papers of 60 marks each)
	20	Total

Practical: Total internal marks – 20

Sr. no	Marks	Subdivision
1.	6 marks	Out of obtained marks in C.P. term ending exam
2.	8 marks	Out of obtained marks in Practical exam of prelim
3.	3 marks	Journal
4.	3 marks	Project
	20 marks	Total

Surgery

STREAMLINING OF THE UNDERGRADUATE SYLLABUS, CURRICULUM AND EXAMINATION

Surgery, being a part of the UG teaching program, is awarded a major portion, theMCI guidelines form the major guiding light for designing the activities of the students in the departmentMinor variations may be seen to adjust the student load of the university, Department of Surgery in BJMC constitutes of 10 Full Surgical Units. The students are posted in such a manner that they get almost equal exposure of all surgical units and the department as a whole. Students are given 5 surgical terms to acquire the adequate exposure to the surgical conditions.

GOAL

The broad goal of teaching undergraduate students in General Surgery is to produce graduates capable of delivering efficient first contact surgical care.

Objectives

1. Knowledge:

The student should be able to:-

- *Describe etiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children,*
- *Define indications and methods for fluid and electrolyte replacement therapy including blood transfusion,*
- *Define asepsis, disinfection and sterilization and recommend judicious use of antibiotics,*
- *Describe common malignancies in the country and their management including prevention,*
- *Enumerate different types of anesthetic agents, their indications, mode of administration, contraindication, and their adverse effects.*

2. SKILLS

At the end of course, the student should be able to :-

- *Diagnose common surgical conditions, both acute and chronic, in adult and children,*
- *Plan various laboratory tests for surgical conditions and interpret the results,*
- *Identify and manage patients of hemorrhagic, septicemic and other types of shock,*
- *Be able to maintain patent air way and resuscitate-*
    - *A critically injured patient,*
    - *Patient with cardio respiratory failure.*
    - *A case of drowning.*
- *Monitor patients of head, spinal, chest and abdominal injuries, both in adults and children,*
- *Provide primary care for a patient of burns,*
- *Acquire principles of operative surgery, including the pre operative, and post operative care and monitoring,*
- *Treat open wounds, including preventive measures against tetanus and gas gangrene,*
- *Diagnose neonatal and pediatric surgical emergencies and provide sound primary care before referring the patient to a secondary or tertiary centre,*
- *Identify congenital anomalies and refer them for appropriate management.*

3. SURGICAL EXPERIENCE

In addition, he should have observed the following clinical procedures-

- *Incision and drainage of an abscess,*
- *Debridement and suturing open wound,*
- *Venesection,*
- *Excision of simple cysts and tumors,*
- *Biopsy of surface malignancy,*

- *Catheterization and nasogastric intubation,*
- *Circumcision,*
- *Meatotomy,*
- *Vasectomy,*
- *Peritoneal and pleural aspirations,*
- *Diagnostic proctoscopy,*
- *Hydrocele surgery,*
- *Endotracheal intubation,*
- *Observed/Assisted Laparoscopy procedures,*
- *Intercostal drainage (ICD) tube insertion,*
- *Cricothyroidotomy,*
- *Tracheostomy.*

THE THEORY LECTURES

are planned to cover surgical topics with ascending degree of complexity

III-Semester (Second MBBS- First Term)

1. *Clinical Surgery Lectures*
    1. *Introduction to Surgery Department.*
    2. *History Taking.*
    3. *Physical Examination*
    4. *Surgical Symptomatology*
        1. *Swelling, Ulcer*
        2. *Pain, Abdominal Pain*
        3. *Limb Oedema*
    5. *Provisional Diagnosis, Investigation*

IV-Semester (Second MBBS- Second Term)

1. *Wound Healing and management*
2. *Shock, fluid electrolyte & Acid Base Balance*
3. *Surgical Nutrition*
4. *Preparing the patient for surgery*
5. *Peri-operative Care*
6. *Anesthesia and pain management*
7. *Surgical Infections*

V- Semester (Second MBBS- Third Term)

1. *Benign Breast diseases*
2. *Breast cancer*
3. *Arterial, Venous and Lymphatic Diseases*
4. *Skin and Soft tissue tumor*
5. *Principal of surgical Oncology*
6. *Acquired Immunodeficiency Syndrome*
7. *Radiology*

VI-Semester (Third MBBS-First- First Term)

1. *Thorax and Head-Neck*
2. *Salivary Gland*
3. *Oesophagus and Hiatus hernia*
4. *Stomach Duodenum*
5. *Appendix*
6. *Small Bowel Diseases*
7. *Intestinal Obstruction*

VII-Semester (Third MBBS-First- Second Term)

1. *Lower GI Hemorrhage*
2. *Inflammatory bowel disease*
3. *Cancer of colon and rectum*
4. *Colon Diverticular disease and polyps*
5. *The Rectum and anal canal*
6. *Liver disease(amoebic and phylogenic abscess).*
7. *Portal hypertension*
8. *Gall Bladder and Bile duct*
9. *Pancreatitis, Tumor of pancreas and obstructive jaundice*
10. *Splenic disorder*

VIII-Semester (Third MBBS-Second- First Term)

1. *Thyroid disease (hyper hypo)*
2. *Thyroid tumor*
3. *Hyper para thyroidism & parathyroid tumor*
4. *Adrenal disfunction*
5. *Peripheral vascular Disease*
6. *Venous and Lymphatic disease*
7. *Lung cancer*
8. *Infection of lung and pleural space*
9. *Prostate disease*
10. *Nephrolithiasis and Obstruction*
11. *Urologic Neoplasm*

IX- Semester (Third MBBS-Second- Second Term)

1. *Accident And Emergency Surgery*
2. *Abdomen and pelvic Trauma*
3. *Warfare Injury*
4. *Head injury*
5. *Burns*
6. *Principal Of Pediatric Surgery*
7. *Transplant*
8. *Laparoscopy*

THE SURGICAL WARD EXPERIENCE

Spread over 5 Surgical Terms where the students must be taught the surgical skills gradually starting from basic surgical topics onwards covering all surgical skills over five surgical ward postings,

Under Graduate Surgical Clinical Teaching Details of First Surgical Term **S1**		
Duration	***Topics***	
6 Weeks	*General History taking*	
	Routine Investigations	*Blood Urine Xrays*
	Wound	*Classifications, Pathology, healing*
	Cases	*Ulcer, Swelling*
	Common Instruments	*Ward Instruments only*
	Ward Procedures	*Temperature Pulse respiration Blood Pressure*
		Venipuncture Oxygen Administration
		IV, RT, Catherisation
	Clinical Kit	*Contents, importance, Uses*
	Basic Dressing / Material	*Principles and Methods*

Under Graduate Surgical Clinical Teaching Details of Second Surgical Term S2		
Duration	***Topics***	
4 Weeks	*General History taking*	*Refresh*
	Basic Cases	*Ulcer Swellings Hydrocele Hernia*
	Common OT Instruments	*Set of Appendisectomy with Sutures*
	Operations Minor	*I & D, Swellings, Lipoma ETC*
	Consents *Communication* *Counseling*	*types, Importance*
	Ward Procedures	*Dressings, Solutions*

Under Graduate Surgical Clinical Teaching Details of Third Surgical Term S3		
Duration	***Topics***	
6 Weeks	*History Taking Advanced*	*Case Specific*
	Peri-operative Care	*Pre-operative preparations*
		Per-Operative
		Post-Operative Care
	Instruments	*Specific*
	Xrays-Special Investigations	*Ba Meal/ BaBolus/ Ba Enema IVP/ CUG/ MCU*
	Short Cases	
	Ward Procedure	*Complete and All*
	Cases	*Ulcer Swellings Hydrocele Hernia*
		Varicose Veins
	Wound Management	*STG,Flaps, newer dressing materials*
		alternative dressing materials
		alternative wound cover techniques
	Operations	*Hydrocele Appendicectomy Hernias*
		Circumcision renal Surgeries
		Peptic perforation
Under Graduate Surgical Clinical Teaching Details of Fourth Surgical Term S4		
Duration	***Topics***	
6 Weeks	*History Taking Advanced*	*Case Specific*
	Revisions	*Pre-operative preparations*
		Per-Operative
		Post-Operative Care
	Instruments	*Specific*
	Xrays-Special Investigations	*Ba Meal/ BaBolus/ Ba Enema Revisions*
		IVP/ CUG/ MCU
	Specimen	
	Ward Procedure	*Complete and All*
	Cases	*Breast, Thyroid, Lump in abd.*
		Portal Hypertension, PVD,
		Obstructive Jaundice, Parotid
	Short Cases	
	Wound Management	*STG,Flaps, newer dressing materials*
		alternative dressing materials

		alternative wound cover techniques
	Emergency Procedures	*BLS/ ATLS/*
	Operations	*Hydrocele Appendicectomy Hernias*
		Circumcision renal Surgeries
		Hernias GUT Surgeries
		GI Surgeries Emergency and Planned

***Under Graduate Surgical Clinical Teaching Details Fifth Surgical Term* S5**		
Duration	***Topics***	
4 Weeks	*Operative notes*	
	Investigations	*All*
	X-Rays	*All*
	Special Ix	*CT/ Angio/ MRI*
		USG/ ERCP
		Endoscopy/ Laparoscopy
	Specimen	
	Antibiotic Guidelines	
	Operations like	*MRM Thyroid Explo. Lapro CJ-JJ*
	and others	*CD, Cholecystectomy*
		Sup Parotidectomy , Renal Surgeries Sympathectomy
	PO Order/Complications	
	Cases	*Breast Thyroid Parotid*
		Lump in abd, Portal Hypertension
		PVD, Obstructive Jaundice

THE THEORY PAPER FOR THE TERMINAL EXAMS

Will be drawn from the following topics the paper style will be of Surgery Paper 1 of prelims with total of 60 marks

Theory Paper Curriculum for Terminal Exams	
1	*Introduction to Surgery/ Basic Surgical Principles*
2	*Radiology*
3	*Wound, Tissue Repair, Hand Foot and Nerves*
4	*Critical Care Fluid, Electrolyte and Acid Base Balance, Blood Transfusion*
5	*Nutrition*
6	*Anesthesia, Resuscitation, Pain*
7	*AIDS, Special Infections*
8	*Tumors, Cysts, Ulcers, Sinus, Artery, Vein and Lymphatic Disorders*
9	*Transplantation*
10	*Plastic and Reconstructive Surgery*
11	*Burns, Accident, Warfare Injury, Trauma*

THE THEORY PAPER OF PRELIMS

For surgery will be drawn in the following style with the questions drawn from the topics as shown.

Theory Paper Curriculum for Prelims	
Paper I Section I	
1	*Gastro Intestinal Tract*
2	*Endocrine, Thyroid, Parathyroid, Adrenals*
3	*Breast*
4	*Pediatric Surgery*
5	*Hernia, Umbilicus, Abdominal Wall*
Paper I Section II	
1	*Genito Urinary System / Recent Advances*
2	*Limbs / Hand/ Foot/ Nerves*
3	*Anaesthesia / Radiology / Dentistry / Miscellaneous*
Paper II Section I	
1	*General Surgery*
2	*Head and Neck*
3	*Thorax*
Paper II Section II Orthopedics	

THEORY QUESTION PAPER STYLE

Theory Paper Style for Prelims and Final Exams			
Paper I and Paper II Section I			*Total*
Question 1	*Write notes on Two of Three*	*2 X 6 = 12*	
Question 2	*Write Short notes on Three of Four*	*3 X 4 = 12*	
Question 3	*Write Notes on Two of Three*	*2 X 3 = 6*	*30*
Paper I Section II			*Total*
Question 4	*Write notes on Two of Three*	*2 X 6 = 12*	
Question 5	*Write Short notes on Three of Four*	*3 X 4 = 12*	
Question 6	*Write 2-3 sentences on Six of Eight*	*1X 6 = 6*	*30*
Paper II Section II (Orthopedics)			
Question 4	*Write notes on Two of Three*	*2 X 6 = 12*	
Question 5	*Write Short notes on Three of Four*	*3 X 4 = 12*	
Question 6	*Write 2-3 sentences on Six of Eight*	*1X 6 = 6*	*30*

COMPLETE EVALUATION

This is the system to be followed for evaluation in surgeryfor MBBS students

Evaluation Methods in Surgery .						
Exams	*Theory I*	*Theory II*	*Internal*	*Practical/Ward Exam*	*Internal*	*Total*
S I- Clinical	-	-	-	*Case 20 + Table 10= 30*		*30*
S II- Clinical	-	-	-	*Case 20 + Table 10= 30*	-	*30*
S III- Clinical	-	-	-	*Case 20 + Table 10= 30*	-	*30*
S IV- Clinical	-	-	-	*Case 20 + Table 10= 30*	-	*30*
S V- Clinical	-	-	-	*Case 20 + Table 10= 30*	-	*30*
Terminal	*60*	-	-	-	-	*60*
Prelims	*60*	*60*	-	*120*	-	*240*
Final	*60*	*60*	*30*	*120*	*30*	*300*

This excel sheet created by the Dr. Jayesh Parikh will be helpful in keeping record of the complete batch of MBBS students posted in department of general surgery.

The Excel Sheet for calculation of Internal Marks Ward Exams (Practical):

DEPARTMENT OF SURGERY

B.J. MEDICAL COLLEGE & CIVIL HOSPITAL

AHMEDABAD

INTERNAL MARK SHEET

Batch:

Name of the first student:

1	2	3	4	5						6						7
				Surgery clinical Terms						Prelim Exam						
S. No.	Roll No.	Uni. Roll No.	Name of the Student	S1 Out of 30	S2 Out of 30	S3 Out of 30	S4 Out of 30	S5 Out of 30	Internal Out of 15	Long Case 50	Short Case I 25	Short Case II 25	Table I 20	TOTAL Out of 120	Internal Out of 10	Total Internal Out of 25
									0					0	0	0

The Excel Sheet for calculation of Internal Marks Ward Exams (Theory):

DEPARTMENT OF SURGERY												
B.J. MEDICAL COLLEGE & CIVIL HOSPITAL												
AHMEDABAD												
INTERNAL MARK SHEET												
Batch:												
Name of the first student:												
1	2	3	4	5			6			7		
				Terminal Theory			Prelim Theory Paper I Out of 60			Theory Internal		
S. No.	Roll No.	Uni. Roll No.	Name of the Student	Paper Sec I (30)	Paper Sec II (30)	Total Out of 60	Paper I Out of 60	Paper II Out of 60	Total Out of 120	Terminal Out of 10	Prelim Out of 20	Total Out of 30
						0			0	0	0	0

The Excel Sheet for calculation of Internal Marks Ward Exams (Practical + Theory):

DEPARTMENT OF SURGERY											
B.J. MEDICAL COLLEGE & CIVIL HOSPITAL											
AHMEDABAD											
INTERNAL MARK SHEET											
Batch:											
Name of the first student:											
1	2	3	4	5	6	7	8	9	10	11	12
S. No.	Roll No.	Uni. Roll No.	Name of the Student	% of Presence	Practical of Surgery Out of 25	Dental Out of 1	Casualty Out of 1	Radiology Out of 1	Ortho Exam Out of 2	Practical Out of 30 6+7+8+9+10	Theory Out of 30
										0	
										0	

Dept of Pediatrics

- **Goal :**
  Teaching of UG in pediatrics to acquire adequate knowledge & appropriate skill for optimally dealing with major health problems of children to ensure their optimal growth and development

Clinical posting in Pediatrics

10 week 4 week : V sem
6 weeks : VIII sem

Bed side teaching daily during clinical posting with case discussion
Duration : 3 hours a day

First posting 4 weeks

1st week (5 days/week)
- History taking : 2 days
- Symptomatology : 1 day
- General physical examination : 1 day
- Anthropometry : 1 day
- Development : 1 day

2nd week
- Systemic examination
- Resp
- CVS
- Per abdomen

3rd week
- NewbornHistory taking
- Examination : GA assessment,
- Eeential Newborn Care (hand washing, breastfeeding,Kangaroo mother care)
- Neonatal hyperbilirubinemia
- Neonatal resuscitation

4th week
- Vaccination
- Demonstration of signs of Dehydration & ORS (WHO plan A, B, C)
- Demonstration of signs of nutritional deficiencies
- Demonstration of signs of different systems

Term ending ward exams

*As this is a clinical posting, any patient coming to OPD or ward with clinical signs & symptoms of different diseases – are to be demonstrated
as per the decision of the faculty teaching at that time.

Second Posting
6 weeks

- History taking & examination revision : 2 days
- CNS examination : symptomatology & examination (2 days)
- Overview of Adolescence
- ARI according to IMNCI : demonstration of signs & writing of referal note

Cases of

- Fever with rash
- Protein Energy Malnutrition
- Hepatosplenomegaly (1 day)
- Nephrotic syndrome
- Acute glomerulonephritis
- Urinary tract infection
- Cyanotic heart disease
- Acyanotic heart disease
- Rheumatic heart disease
- Pneumonia
- Asthma
- Plural effusion
- Cerebral palsy
- Tuberculousmeningoencephalitis
- Normal Newborn
- Trisomies (Down's syndrome)

Last week

- Drugs & vaccines & IV fluids
- Xrays
- Instruments & procedure demonstration
  - IV canula insertion
  - Ryle's tube insertion
  - Nebulization & MDI
  - Lumber puncture
  - Mantoux test
  - NRP demonstration on maniquin

Term ending exam

*As this is a clinical posting, any patient coming to OPD or ward with clinical signs & symptoms of different diseases – are to be demonstrated
as per the decision of the faculty teaching at that time.

Internal marks scheme

Theory: **Marks: 40** **Duration : 2 hours**

Syllabus:

1) Introduction of Pediatrics
2) Normal growth
3) Normal development
4) Immunization
5) Introduction of normal newborn baby
6) Temperature regulation in newborn & care of new born
7) Breast feeding & lactation management
8) Infant & young child feeding(including complimentary feeding)
9) Normal nutrition requirements
10) Normal fluid & electrolyte balance
11) Anemia in infancy & childhood
12) Vitamin deficiency(A, B, C, D)
13) Diphtheria & pertussis
14) Measles & varicella
15) Worm infestation
16) Bleeding & coagulation disorders in children
17) Childhood tuberculosis(pulmonary & extra- pulmonary)
18) Hypoglycemia & metabolic diseases
19) Shock & anaphylaxis
20) Adolescent growth & normal puberty
21) Childhood malignancies
22) Mental retardation
23) Behavioural disorders
24) Meningitis
25) Hydrocephalous & neural tube defects
26) Acute flaccid paralysis
27) Enteric fever & malaria
28) Immunization
29) Common childhood poisoning
30) Genetics

Paper scheme:

Q.1	Write notes on	(any two out of three)	2X5 marks = 10
Q.2	Write short notes on	(any three out of four)	3X4 marks = 12
Q.3	write short notes on	(any three out of four)	3X4 marks = 12
Q.4	write answer to the point	(six out of eight)	6X 1 marks= 06

*** Question 3 from newborn compulsorily**

Preliminary examination and University Exam.

Theory : **Total marks: 40** **Duration : 2 hours**

Paper scheme:

Q.1	Write notes on (any two out of three)	2X5 marks = 10
Q.2	Write short notes on (any three out of four)	3X4 marks = 12
Q.3	write short notes on (any three out of four)	3X4 marks = 12
Q.4	write answer to the point (six out of eight)	6X 1 marks= 06

*** Question 3 from newborn compulsorily**

Gross syllabus:

25% from growth,development,nutrition& immunization
25% from infections & infestations, national health programmes & vaccine preventable diseases
25% of curriculum from Newborn
25% systemic diseases

Syllabus:

1) Introduction of Pediatrics
2) Normal growth
3) Normal development
4) Immunization
5) Introduction of normal newborn baby
6) Temperature regulation in newborn & care of new born
7) Breast feeding & lactation management
8) Infant & young child feeding(including complimentary feeding)
9) Normal nutrition requirements
10) Normal fluid & electrolyte balance
11) Anemia in infancy & childhood
12) Vitamin deficiency(A, B, C, D)
13) Diphtheria & pertussis
14) Measles & varicella
15) Worm infestation
16) Bleeding & coagulation disorders in children
17) Childhood tuberculosis(pulmonary & extra- pulmonary)
18) Hypoglycemia & metabolic diseases
19) Shock & anaphylaxis
20) Adolescent growth & normal puberty
21) Childhood malignancies
22) Mental retardation
23) Behavioural disorders
24) Meningitis
25) Hydrocephalous & neural tube defects
26) Acute flaccid paralysis
27) Enteric fever & malaria
28) Immunization
29) Common childhood poisoning
30) Genetics

31) PEM & its management
32) Acute gastroenteritis
33) Diabetes in children (including DKA)
34) Congestive heart failure
35) Congenital heart disease(cyanotic &acyanotic)
36) Rheumatic heart disease
37) Hypertension
38) Acute respiratory infections
39) Bronchial asthma
40) Nephrotic syndrome
41) Acute glomerulonephritis
42) Liver disease (acute & chronic)
43) Seizure disorders including status epilepticus
44) Cerebral palsy
45) Birth asphyxia
46) Low birth weight babies & high risk neonates
47) Neonatal respiratory diseases
48) Jaundice in newborns
49) Neonatal infections (TORCH)
50) Neonatal convulsions & birth injuries
51) Bleeding in newborns
52) Down's syndrome
53) Noonan's & Turner's syndrome
54) Medical ethics
55) Juvenile rheumatoid arthritis
56) Congenital anomalies

Final Marks Scheme

Theory :

One paper	40 marks
Internal assessment	10 marks
Total marks	**50 Marks**

Practicals

Oral viva	15 marks
Two clinical cases	25 marks
Case I -general ped	15 marks
Case II- Newborn	10 marks
Internal assessment	10 marks
Total marks	50

25% of the curriculum from Newborn

Time duration

Particulars	Examination time	Assessment time
Clinical case I	15 minutes	10 minutes
Clinical case II	10 minutes	05 minutes
Viva (table)		5 minutes

Division of marks in pairs of the examiners

Pair I oral (viva)	15 marks	all candidates
Pair II clinical case	25 marks	Half candidates
Part III clinical case	25 marks	Half candidates

Internal marks Evaluation

Theory marks

First internal (8th semester)	3
Preliminary	7
Total	10

Practical marks:

1st ward ending exam:	**2 marks**
2nd ward ending exam:	**2 marks**
Preliminary exam:	**6 marks**
Total:	**10 marks**

Department of medicine

OBJECTIVES

- The goal of the undergraduate training in general medicine is to provide such knowledge, skills and behavioral attribute that may enable the graduating physician to function effectively as a Primary Care Physician in a community setting
- At the end of training, each student must be able to:
- Understand the various manifestations of infectious and non-infectious diseases.
- Understand the basic principle of history taking and clinical examinations.
- Elicit a detailed history, perform a thorough physical examination including mental status examination and examination of an unconscious patient.
- Correlate the clinical symptoms and physical signs to make a provisional anatomical, physiological, etiopathological diagnosis along with the functional disability and suggest relevant investigation.
- Interpret reasonably the relevant investigations.
- Present and discuss the principles involved in the management of the patient
- Primary Management of acute medical emergencies and common medical disorders
- To observe procedure under supervision like – IV cannulation, insertion of nasogastric tube, urinary bladder catherisation, use of peak flow meter, doing an ECG
- Practice evidence based medicine, rational for different therapeutic modality and essential drugs and their side effects
- Practice preventive, promotive , curative and rehabilitative medicine in respect to commonly encountered health problems
- Recognize psychosocial, cultural, economic and environmental factors affecting health of individual and community and discharge professional duties in accordance
- Practice medical ethics in patient care and research
- Develop attitude of self learning and acquire skills to use appropriate technology

Course content

- Practice of medicine
- Screening and prevention of disease
- Clinical pharmacology
  - Principles of drug therapy
  - Adverse drug reaction
  - Drug interactions
  - Prescription writing©
- Medical disorders in pregnancy
- Geriatric medicine
  - Major manifestations of disease in elderly
  - Rehabilitation/palliative care
- Genetics
  - Common genetic diseases
  - Counseling
  - Gene replacement therapy
  - Oncogenes
- Nutrition ©
  - Nutrient requirements & therapy
- Vitamin & mineral deficiencies/excess©
- Malnutrition©
- Obesity ,Life style modification©
- Essential amino acids

- **Critical care**
  - Major manifestations of critical illness
  - Shock ©
  - Sepsis, DIC©
  - ARDS©
  - Principles of management

- **Infections/immune response**
  - Epidemiology and spread of infection
  - Approach to infective diseases
  - Clinical features, diagnosis, treatment and prevention of infection
  - Fever/hyperthermia (T & C) ©

- Fever with rash©
- Fever of unknown origin©
- Infective endocarditis©
- Acute diahorrheal illness©
- Hospital acquired infections

- **Specific infections**
- Protozoal
  - Amoebiasis & giardiasis
  - Malaria
- Bacterial
  - Streptococcal
  - Pneumococcal
  - Staphylococcal
  - Meningococcal
  - Enterococcal
  - Pseudomonal infections
  - Anerobic infections
  - Tetanus
  - Cholera
  - Salmonellosis
  - Helicobacter pylori
- Mycobacterial
  - Tuberculosis©
  - Leprosy©
  - Atypical mycobacteria
- Spirochetal
  - Syphilis
  - Leptospirosis
- Ricketssial
- Viral
  - Dengue©
  - Chickungunya ©
  - Influenza©
  - Rabies©
  - Polio©
- HIV/AIDS & related Opportunistic Infections©
  - Definition of AIDS
  - Epidemiology & routes of transmission
  - Etiopathogenesis
  - Diagnosis & laboratory monitoring of HIV disease
  - Clinical manifestations
    - Acute HIV syndrome
    - Asymptomatic stage
    - Symptomatic disease including OIs & neoplasms
    - IRIS
  - Management
    - Initial evaluation of HIV patient
    - General principles of treatment
    - cART
  - Prevention including PEP
- Fungal
  - Candidiasis
  - Cryptococcosis
  - Mucormycosis
  - Pnuemocystis carinii
  - Aspergillosis
- Helminthic
  - Ascariasis
  - Hookworms
  - Cysticercosis
  - Filariasis©

- CARDIOVASCULAR SYSTEM

- Anatomy & physiology of cardiovascular system
- Cardinal manifestations including Dyspnea, Edema, Cyanosis, Chest pain & Palpitations©
- Heart sounds & murmurs©
- Ischemic heart diseases©
- Atherosclerosis©
- Hypertension©
- Heart failure & Cor pulmonale©
- Atrial fibrillation©
- Cardiac arrest©
- Tachyarrhythmias©
- Bradyarrhythmias©
- Valvular heart diseases©
- Rheumatic fever©
- Congenital heart diseases
- Pericardial diseases
- Cardiomyopathies
- Investigative procedures like 2D ECHO, Catheterization, other new modalities
- Diseases of arteries & veins
- Cardiac tumors

- **Respiratory system**
  - Anatomy & physiology of Respiratory system
  - Cardinal manifestations including cough, hemoptysis, dyspnea, chest pain & cyanosis©
  - PFT©
  - Breath sounds including additional sounds©
  - Upper/Lower respiratory tract infections (pneumonia) ©
  - COPD©
  - Bronchial Asthma©
  - Bronchiectasis/lung abscess©
  - Pleural effusion.Pneumothora©x
  - Interstitial lung diseases
  - Occupational lung diseases
  - Pulmonary hypertension
  - Pulmonary embolism©
  - Obstructive sleep apneoa
  - Allergic diseases of respiratory tract©
  - Neoplasms of lungs
  - Prevention of respiratory diseases & ventilatory support
    - Solitary pulmonary nodule
    - Cavitory lesions on CXR©
  - Renal system
    - Anatomy & physiology of Renal system©
    - Major manifestations of renal & urinary tract diseases©
    - Dysuria, pyuria, urethral symptoms©
    - Hematuria, Proteinuria, Oedema©
    - Renal function tests©
    - Fluid and Electrolytes©
    - Acute kidney injury©
    - Chronic renal failure©
    - Glomerulonephritis©
    - Tubulointerstitial diseases©
    - Urinary tract infections©
    - Nephrolithiasis©
    - Renal replacement therapy
  - Gastrointestinal system
    - Anatomy & physiology of GI system
    - Cardinal manifestations including Diarrhea, Vomiting, Abdominal pain, Abdominal distension, Hemetemesis & Jaundice©
    - GERD©
    - Peptic ulcer disease©
    - Acute gastroenteritis/food poisoning©
    - Inflammatory bowel diseases©
    - Malabsorption syndromes©
    - Abdominal tuberculosis©
    - Irritable bowel syndrome
    - Ascites (T&C) and PHT ©
  - Pancreas
    - Acute & chronic pancreatitis
  - Hepatobilliary system
    - Anatomy & physiology of hepatobilliary system
    - Liver function tests©
    - Approach to patient with jaundice©
    - Viral hepatitis (Acute & Chronic) (T&C) ©
    - Liver abscess©
    - Alcoholic liver disease©
  - Hepatobilliary system
    - Cirrhosis & chronic liver disease(T&C) ©
    - Fatty liver & NASH
    - Infiltrative disorders of liver e.g. Wilson's disease
  - Endocrinology

- Anatomy & physiology of various endocrine organs
- Diabetes melitus©
  - Clinical examination of patient with DM©
  - Epidemiology & aetiopathogenesis
  - Investigations
  - Major manifestations of DM©
    - Hyperglycemia
    - Acute complications
      - DKA
      - Hyperglycemic nonketotic coma
      - Hypoglycemia
  - Chronic complications©
    - Microvascular
    - Macrovscular
  - Management of Diabetes©
  - Special problems in management of DM©
  - Recent advances in management of DM©
- Hypoglycemia ©
- Thyroid©
  - Clinical examination of thyroid disease
  - Thyroid function test
  - Hyperthyroidism
  - Hypothyroidism
- Reproductive system
  - Male and female sexual disorders
- Parathyroid gland
  - Hyperparathyroidism
  - Hypoparathyroidism
- Adrenal gland
  - Cushing's disease
  - Addisson's disease
  - Pheochromocytoma
- MEN syndromes
- Pituitary gland
  - Visual field defects©
  - Prolactinoma/ galactorrhoea
  - Hypopituitarism
  - Acromegaly

o Hematology
  - Clinical examination in blood disorders©
  - Investigations in hematological disorders
  - Major manifestations of hematological disease
  - Anemia (C & T) ©
  - Polycythemia©
  - Leucopenia©
  - Leucocytosis©
  - Thrombocytopenia©
  - Thrombocytosis©
  - Pancytopenia©
  - Lymphadenopathy©
  - Splenomegaly©
  - Approach to bleeding diathesis©
  - Venous thrombosis
- Anemias
  - Iron deficiency©
  - Megaloblastic©
  - Aplastic©
  - Hemolytic©
- Hemoglobinopathies©
- Myeloproliferative disorders
- Hematological malignancies
- Bleeding disorders ©
- Disorders of coagulation and venous thrombosis©
- Blood products and transfusion©
- Bone marrow transplantation

o Immune system and rheumatology
  - Introduction to immune system and autoimmunity©
  - Primary immune deficiency© diseases
  - Major manifestations of musculoskeletal disease
    - Joint pain©
    - Back pain©
  - Approach to articular and musculoskeletal disorder©
  - Rheumatoid arthritis©
  - Spondyloarthitides©
  - SLE©
  - APLA
  - Systemic sclerosis
  - Sjogren's syndrome
  - Vasculitis syndromes
  - Sarcoidosis
  - Amyloidosis
  - Gout and related crystal associated arthropathy
  - Infectious arthritis
  - Osteoarthritis and fibromyalgia
  -

o **Central nervous system**
  - Anatomy & physiology of Nervous system

- Major manifestations of nervous system
  - Headache©
  - Raised intracranial tension©
  - Vertigo©
  - Sleep disorders
  - Disorders of movements
  - Ataxia
  - Sensory disturbances©
  - Delirium and dementia
  - Coma© , brain death
  - Aphasia
  - Brain stem disturbances
- Migraine and cluster headache©
- Seizures and epilepsy disorders©
- Cerebrovascular disease©
- CNS infection
  - Acute and chronic meningitis©
  - Viral encephalitis©
- Disease of cranial nerves©
- Disease of spinal cord
- Multiple sclerosis
- Parkinson's and other extrapyramidal disorders©
- Dementias including AD
- Cerebellar disorders
- MND
- Peripheral neuropathy and GBS©
- Myasthenia gravis© and disease of NMJ
- Diseases of muscle
- Nutrional and metabolic disorders of nervous system

- **PSYCHIATRY: Syllabus for MBBS (UG)**
  - **OBJECTIVES**
- At the end of the course, the student will be able to:
- **1.** Introducing concept of psychiatric disorders and their classification
- **2.** Awareness of general issues about etiology of psychiatric disorders and methodology used to study etiology of these disorders.
- **3.** Ability to diagnose and treat common psychiatric disorders like schizophrenia, acute manic episode, depression, anxiety disorders including phobias and OCD, conversion and dissociative disorders.
- **4.** To be able to diagnose severe/suicidal cases of depression and to refer them.
- **5.** Understand the concept of personality disorders.
- **6.** Ability to diagnosis and treat alcohol and drug dependence and withdrawal states.
- **7.** Ability to diagnose common psychiatric disorders in children.
- **8.** To know the role of counseling and psychological therapies in treatment of psychiatric disorders.
- **9.** Demonstrate role of psychological testing in assessment of psychiatric disorders

- **COURSE CONTENT**
- **1.** Psychiatric History Taking and Mental Status Examination
- **2.** Introduction and classification of Psychiatric disorders
  - Concept of psychiatric disorders; need for classification; types of classification e.g. introducing the International Classification of Diseases ((ICD) and the Diagnostic and Statistical Manual (DSM); major categories of psychiatric disorders; diagnosis of organic disorders.
- **3.** Aetiology of Psychiatric disorders
  - Overview of contribution of different scientific disciplines to psychiatric aetiology – clinical descriptive studies, epidemiology, social sciences e.g. role of life events, stress; genetics; biochemical studies;pharmacology; endocrinology; physiology; neuropathology; psychology.
- **4.** Schizophrenia
  - Epidemiology, clinical features, subtypes, diagnosis, overview of aetiology, course, treatment – pharmacological, role of ECT.
- **5.** Bipolar disorders
  - Epidemiology, clinical features, diagnosis, overview of aetiology, course, treatment – pharmacological.
- **6.** Depression
  - Epidemiology, clinical features, diagnosis, overview of aetiology, co-morbidity with organic disorders, course, treatment – pharmacological.
- **7.** Anxiety Disorders
  - Types of anxiety disorders; phobia, OCD, Panic Disorder, PTSD, GAD. The clinical features and epidemiology; diagnosis, differential diagnosis; overview of aetiology; course;

treatment – pharmacological and non-pharmacological.

- **8.** Conversion and Dissociative disorders
  - Epidemiology, clinical picture, diagnosis, differential diagnosis, aetiology, prognosis, treatment.
- **9.** Personality disorders
  - Concept of personality disorders, epidemiology, classification, assessment, overview of clinical features, aetiology, prognosis.
- **10.** Drug and Alcohol dependence
  - Concept of abuse and dependence, epidemiology of alcohol, Nicotine and opiate dependence; clinical features, withdrawal symptoms including complicated withdrawal, psychosocial complications, aetiology, outcome, treatment.
- **11.** Psychiatric disorders of childhood and adolescence,
  - Classification of childhood psychiatric disorders, epidemiology, clinical features, aetiology, assessment.
- **12.** Psychiatric Disorders in Geriatric population
- **13.** Neurocognitive Disorders: Dementia, Delirium and Amnestic Disorders
- **14.** Psychopharmacology of Psychiatric Disoredrs
- **15.** Counselling and psychological therapies
  - Communication Skills, Counselling process, skills, different counseling approaches, behaviour therapy, cognitive therapy and its applications.
- **16.** Psychological testing
  - What are psychological tests, standardization, reliability, validity, intelligence test, personality test,application.

TEACHING AND LEARNING METHODOLOGY

Lectures and discussions with patients

TEXT-BOOK RECOMMENDED

1. Niraj Ahuja's Text-book on Psychiatry
2. Oxford Psychiatry
3. Synopsis of Psychiatry by Kaplan and Saddock, 11th edition

EXAMINATION AND MARKS DISTRIBUTION

Internal Assessment :

Two assessments - Viva are held as given below :
Viva in Internal Assessment:
2nd MBBS : - 10
3rd MBBS: - 10

Professional Examination:

Theory with medicine : 12 marks
Three out of Four Short Notes

Recommendation: There should be a compulsory posting of students in psychiatry for total 1 month
In 2nd MBBS: 15 days
In 3rd MBBS: 15 days

Questions in University Examination Paper should be selected by only Psychiatry Faculties only and should also be checked by Psychiatry Faculties only.

- **DERMATOLOGY**
  - 1 Introduction, structure and functions of skin, primary and secondary skin lesions
  - 2 Bacterial and viral infections
  - 3 Fungal infections
  - 4 Diseases caused by arthropods and parasites
  - 5 Hansens disease
  - 6 Eczemas, atopic disease, pruritus and urticaria
  - 7 Psoriasis, lichen planus and vitiligo
  - 8 Acne and acne related disorders

- 9 Sexually transmitted infections
- 10 HIV and AIDS
- 11 Vesiculobullous disorders
- 12 Diseases of hair and nail
- 13 Skin and nutririon (deficiency dermatitis)
- 14 Cutaneous manifestations of systemic diseases
- 15 Adverse cutaneous drug reactions

- **JOURNALS available in library are**
  - a)Indian journal of dermatology venereology and leprosy
  - b)Indian journal of sexually transmitted diseseas
  - c)Journal of leprosy India
- **EXAM PATTERN** :
  - 3-4 short notes in paper 2
  - Compulsory questions should be in exam
  - No optional questions
- **INTERNAL MARKS:**
  Minimum weightage 10-15 marks should be there
- **Poisoning**
  - General approach to poisoning patient
  - Poisoning by specific pharmaceutical agents
  - Chemicals and pesticides including OP
  - Snake bite and scorpion bite
  - Heavy metal poisoning
  - Methyl alcohol poisoning
- **Environmental and occupational hazards**
  - Heat stroke and hypothermia
  - Drowning
  - Electrical injuries
  - Radiation injuries
  - High altitude & decompression sickness

RECOMMENDED TEXTBOOKS

- Harrison's principles of internal medicine, McGraw Hill publication
- Davidson's principles and practice of medicine, ELBS-Livingstone publication
- Kumar & Clark's clinical medicine – A textbook for medical students and doctors, ELBS publication
- MEDICINE- Preparation manual for undergraduates, K George Mathew, Praveen Agarwal, Elsevier publication

CLINICAL MEDICINE

1st Clinical Posting

History Taking

- Demographic details
  - Name
  - Age
  - Gender
  - Residence
  - Occupation
- Chief complaints
- Origin , Duration, Progress
- Negative history
- Past history
- Personal history
  - Drugs and medication
  - Allergy
  - Habits
  - Diet
  - Bowel , Bladder function
  - Sleep
- Menstrual and obstetrics history
- Family history

- General examination
    - Anaemia
    - Iron deficiency
    - Megaloblastic
    - Haemolytic
    - Jaundice
    - Clubbing
    - Cyanosis
    - Lymphadenopathy
    - Pedal oedema
    - Pulse
    - Vitals data
    - Fever
    - Miscellaneous including facies, decubitus, etc.

- OBJECTIVES
    - At the end of first clinical posting, student
    - should have learnt history taking thoroughly with special emphasis on communication skills.
    - Should have learnt to perceive any general examination abnormality using correct clinical methods
    - Should submit at least 5 clinical histories & present at least 3 short cases on general examination.

2nd Clinical Posting

Respiratory System

- Symptomatology
    - Breathlessness
    - Cough
    - Haemoptysis
    - Chest pain
    - Fever
    - Hoarseness of voice
    - Loss of weight and appetite
- **Examination**
    - Inspection
    - Palpation
    - Percussion
    - Auscultation
    - Normal Breath Sounds
    - Abnormal Breath Sounds

  Cases
    - Pneumonia
    - Pleural effusion
    - Bronchial asthma
    - COPD
    - Bronchiectasis
    - Cavitory lesions
- Emergencies
    - Status Asthmaticus
    - Acute exacerbation of COPD
    - Respiratory failure
- Table Viva
    - X-rays
    - Drugs
    - Instruments
- Ward procedures
    - Pleural tapping
    - ICD insertion
    - OSCE/OSPE

Gastrointestinal System

- Symptomatology
    - Abdominal pain
    - Dyspepsia
    - Diarrhoea
    - Vomiting
    - Constipation
    - Bleeding per rectum
    - Jaundice
    - Haemetemesis
    - Abdominal distension
    - Fever, weight loss, anorexia
- Examination
    - Inspection
    - Palpation
    - Percussion
    - Auscultation

  Cases
    - Jaundice
    - Ascitis
    - Hepatomegaly
    - Splenomegaly
    - Cirrhosis
    - Anaemia
    - Pedal oedema
- Emergencies
    - Haemetemesis
    - Diabetic ketoacidosis
    - Organophosphorus poisoning
- Table Viva
    - Drugs
    - Instruments
    - Ward procedures
        - Naso-gastric tube insertion
        - Ascitic tapping
    - OSCE/OSPE (Optional)

- OBJECTIVES
    - At the end of second clinical posting, student should have
    - learnt symptomatology of respiratory & GI systems.
    - performed clinical examination of both systems with correct techniques.
    - presented at least 3 cases of each system
    - observed at least 3 emergencies of each system with special emphasis on management
    - observed ward procedures like pleural tapping, ascitic tapping & RT insertion, catheterisation.
    - Should be able to report x-rays pertaining to respiratory system.

3rd Clinical Posting

Cardiovascular System

- Symptomatology
    - Breathlessness
    - Chest pain
    - Swelling
    - Oliguria
    - Cough
    - Palpitation
    - Fever
    - Giddiness
    - Easy fatigability
    - syncope
- Examination
    - Pulse
    - Blood pressure
    - JVP
    - Inspection
    - Palpation
    - Percussion
    - Auscultation
    - Normal heart sounds
    - Abnormal heart sounds
    - Murmurs
- Cases
    - Rheumatic heart disease
        - Mitral stenosis
        - Mitral regurgitation
        - Aortic stenosis
        - Aortic regurgitation
    - Pedal oedema
- Emergencies
    - Myocardial infarction
    - Left ventricular failure
    - Sudden cardiac arrest
    - Pulmonary embolism
    - Hypertensive emergency
    - Cardiogenic shock
- Table Viva
    - X-rays
    - Drugs
    - ECG
    - Ward procedures
        - Cardiopulmonary resuscitation
    - OSCE/OSPE (Optional)
- OBJECTIVES
    - At the end of third clinical posting, student should have
    - learnt symptomatology of cardiovascular system
    - performed clinical examination of cardiovascular system with correct techniques & be able to identify normal and abnormal heart sounds & murmurs.
    - presented at least 3 cases of cardiovascular system
    - observed at least 3 emergencies of cardiovascular system with special emphasis on management
    - Observed & noted steps of emergency procedures like cardio-pulmonary resuscitation & intubation.
    - Should be able to report x-rays pertaining to cardiovascular system.
    - Should be able to report ECGs of common cardiac conditions.

4th Clinical Posting

Central Nervous System

- Symptomatology
  - Loss of conciousness
  - Hemiplegia
  - Paraplegia
  - Convulsion
  - Headache
  - Syncope
  - Paresthesias
- Examination
  - Higher function
  - Cranial nerves
  - Motor system
  - Reflexes
  - Sensory system
  - Tests of Coordination
  - Signs of meningeal irritation
  - Skull, Spine & Gait

Cases

  - Facial nerve palsy
  - Other Cranial Nerve Palsies
  - Upper motor neuron disease
  - Lower motor neuron disease
  - Reflex examination
  - Motor system examination
- Emergencies
  - Status epilepticus
  - Snake bite
  - Organophosphorus poisoning
  - Acute cerebrovascular accidents
- Table Viva
  - X-rays
  - Drugs
  - Instruments
  - Ward procedures
    - Lumbar Puncture
  - OSCE/OSPE (Optional)

OBJECTIVES

- At the end of fourth clinical posting, student should have
- Learnt symptomatology of nervous system.
- performed clinical examination of nervous system with correct techniques.
- presented at least 3 cases of nervous system
- observed at least 3 emergencies of nervous system with special emphasis on management
- observed ward procedures like lumbar puncture & be able to interpret CSF picture.
- Should be able to identify cranial nerve palsies & differentiate between UMN and LMN signs.

5th Clinical Posting

- REVISION
- Case presentations
- X-rays
- Drugs
- specimens
- Instruments
- Ward procedures
- ECG
- OSCE/OSPE

- OBJECTIVES
  - At the end of fifth clinical posting, student should have
  - Presented at least 2 long cases & 4 short cases.
  - Observed & noted steps of common ward procedures and management of medical emergencies.
  - Reported x-rays & ECGs.
  - Should be able to put provisional diagnosis and write treatment of common medical conditions.

Theory syllabus

3rd semester

- **Symptomatology (general)**
  - Fever
  - Heamoptysis
  - Malena and haemetemesis
  - Chest pain
  - Dyspnea
  - Edema
  - Cyanosis and clubbing
  - Diarrohoea and dysentry
  - Weight loss
  - Polyuria
  - Haematuria
  - Shock
  - Ascitis
  - Anemia
  - syncope
- **Nutrition**
  - Vitamin & mineral deficiencies/excess
  - Malnutrition
  - Obesity ,Life style modification
- **Objective**
  - At the end of 3rd semester each student should learn common cardinal symptoms of major illness and nutrition related diseases .

4th semester

- **Symptomatology (system wise)**
  - (RS, CVS, GI, CNS, Endocrinology , Renal)
- **Common tropical infections**
  - Malaria
  - Dengue
  - Leptospirosis
  - Tuberculosis
  - Food poisoning
  - Tetanus
  - Amoebiasis
  - Poliomyelitis
  - Syphillis
  - Leprosy
  - Common worm infections
- **Common Hematological disorders**
  - Iron deficiency anemia
  - Megaloblastic anemia
  - Hemolytic anemia
  - Blood transfusion
  - Bleeding diathesis
  - D/D of jaundice
- **objective**
  - At the end of semester students should learn about specific symptomatolgy and common infections

5th semester

Gastrointestinal system

- Acid peptic disease
- Ulcerative colitis
- Malabsorption syndrome
- Viral hepatitis
- Cirrhosis and portal hypertension
- Acute pancreatitis
- **Objectives**
  - At the end of semester students should learn about common haematolgical disorder

6th semester

Respiratory system

- Pneumonia
- Pleural effusion
- Pneumothorax
- Brochitis and lung abscess
- Bronchial asthma
- COPD
- Respiratory failure
- Pulmonary embolism

Cardiovascular system

- Hypertension
- Ischemic heart disease
- Rheumatic fever
- Valvular heart disease
- Infective endocarditis

- **Renal system**
  - Acute kidney injury
  - Chronic kidney disease
  - Glomerular disease
- **Diabetes mellitus**

7th semester

- **Endocrinal system**
  - Thyroid gland disorders
  - Parathyroid gland orders and calcium metabolism
  - Pituitary gland disorders
  - Adrenal disorders
- **Central nervous system**
  - Epilepsy
  - CNS infections
  - Cerebrovascular disease
  - Parkinsonism
  - Paraplegia
- **Immunology**
  - Rheumatoid arthritis
  - SLE
  - Immunotherapy

8th semester

- **Cardiovascular system**
  - Heart failure
  - Arrhythmia
  - Tachy arrhythmia
  - Brady arrhythmia
  - Congenital heart disease
- **Central nervous system**
  - Peripheral neuropathy
  - Involuntary movements

9th semester

- **Geriatric medicine**
  - Biology of ageing
  - Common manifestations of geriatric
  - Rehabilitation and palliative care

- **Objectives**
  - At the end of semester students should learn about respiratory , cardiovascular and renal related disease.

- **HIV**
  - Epidemiology and clinical features
  - Staging and NACO and WHO guidelines
  - Management
  - Immunocompromised host
- **Fluids and electrolytes**
  - Acidosis / alkalosis
  - Potassium imbalances

Sodium imbalances

Objectives:-

- At the end of semester student should learn about common disorders in endocrinal , central nervous system , electrolytes imbalances and immunological diseases

  - Coma/ vegetative states/ brain death
  - CSF and neurological investigations
- **Haematology**
  - Acute leukaemia
  - Chronic leukaemia
  - Hodgkins disease and other lymphomas
  - Aplastic anaemia and bone marrow suppression
  - polycythemia

- **Critical care**
  - ARDS
  - Shock
  - Sepsis
  - Principals of management including mechanical ventilation.
- **Medical genetics**

INTERNAL EXAM THEORY (TO BE TAKEN AT END OF 8TH SEMESTER)

- 1 paper of 60 Marks divided into 2 sections of 30 marks each.
- Each section shall have 2 questions each.

Paper style

- **Section-1**
  Q1) Write Short notes on any four out of six - 20 marks
  Q2) Write short notes on any two out of three - 10 marks
- **Section-2**
  Q1) Write short notes on any two out of three - 20 marks
  Q2) Write in brief two out of three -10 marks

  Syllabus
  - Symptomatology
  - Haematology
  - RS Including TB
  - CVS
  - Infectious disease and Tropical Disease
  - Others- Diabetes mellitus, Malaria, Food poisoning, Viral hepatitis, Portal hypertension, CSF interpretation, Pupil examination in clinical medicine

PRELIMS (AT THE END OF 9TH SEMESTER)

- Theory-2 Papers of 3Hrs each of 60 marks each.
- Each paper shall have two sections of 30 marks each.
- Each section shall have 3 questions each

Paper style

- ***Section-I***
  - *Q1-12 Marks*
    Ans.-write notes on any two out of three
  - Q2.12 Marks
    Ans.-write notes on Any three out of four
  - Q3.6 Marks
    Ans.-write notes on Any two out of three
- **Section-II**
  - Q1- 12 Marks
    Ans.-write notes on any two out of three
  - Q2.12 Marks
    Ans.-write notes on Any three out of four
  - Q3.6 Marks
    Ans.-write Any six out of eight in one line

PRELIMS (Topics to be covered)

- **Paper-I**
  - RS including diseases of Chest And TB
  - CVS
  - Alimentary system
  - Endocrine and Metabolic diseases
  - Water And Electrolyte balance and its disorders
  - Infection and Tropical diseases,Nutrition
  - Symptomatology,Investigations and pharmacology related to above mentioned subjects
- **Paper-II**
  - CNS
  - Kidneys and Urinary system
  - Haemopoetic system
  - Rheumatology and Connective tissue disease
  - Poisoning And Toxicology
  - Immunology and Genetics
  - Dermatolgy,Including STDs
  - Psychiatry

PRELIMS (PRACTICAL)

- Total marks:120
- 1 Long case of 50 marks(RS,CVS,GI)
- 2 Short cases of 25 marks each
- 1 case of CNS
- 1 Case of General Medicine other than CNS
- Viva of 20 marks
  This includes-
  - X rays
  - ECGs
  - Drugs
  - Instruments
  - Emergencies
  - Procedures
  - Specimen

Special Note:

- May we propose to replace the non CNS short case with OSCE
- And include paper cases in viva in place of emergencies and specimen

INTERNAL MARKS CALCULATION

- Internal evaluation for UG students
- **THEORY (TOTAL 30 MARKS)**
  - 1ST INTERNAL:10 MARKS(taken at the end of 8th Sem)
  - PRELIMINARY: 20 MARKS (14 THEORY + 6 MCQs)(at the end 9th Sem) (MCQ exam of 60 marks to be taken with prelims)
- **PRACTICAL EXAMINATION (TOTAL 30 MARKS)**
  - CLINICAL TERMS: 15 MARKS (3 FOR EACH TERMS)
  - ALLIED SUBJECTS: 5 MARKS
  - PRELIMINARY PRACTICAL: 10 MARKS(taken at the end of 9th Sem)
- Details given in the excel sheet.

Obstetric & Gynecology

Theory Syllabus

3rd semester

- Anatomy & Physiology of Reproductive Tract
- Basic Anatomy – The Pelvis, female genital organs of reproduction
- Physiology of ovulation
- Physiology of menstruation
- Diagnosis of pregnancy
- Physiology of pregnancy
- Maternal changes during pregnancy

4th semester

- Physiology of Labour and
- Physiology of Puerperium Causation and stages of labour, mechanism of labour, conduct of normal labour, intrapartum surveillance, normal puerperium
- Antenatal care – objectives of ANC, Assessment of period of gestation, detection of abnormality with the help of gravidogram, clinical monitoring of maternal and fetal well being, detection of normal fetal pelvic relation (obstetric palpation).
- Advice regarding nutrition, prescribing in pregnancy, immunization against tetanus, basic investigations,
- fetal well being, biophysical monitoring,
- pelvic assessment,
- Basic obstetric ultrasound.

5th semester

- Abnormal and excessive menstrual bleeding
- Physiological vaginal discharge
- Pathological vaginal discharge
- Amenorrhoea Primary, Secondary
- Development of the uterus and Mullerian system anomaly
- Resuscitation and examination of the new born
- Feeding of the newborn and immunization

6th semester

- Infertility Cause in male and female
- Physical examination of both female and male partners
- Essential investigation • Management options, principles of ART
- Disease complicating pregnancy
- heart disease of pregnancy
- Tuberculosis and pregnancy
- HIV in pregnancy
- Maternal infections during pregnancy
- Disease of the urinary system
- Bleeding disorders in early pregnancy

7th semester

- Vital statistics (birth rate, maternal mortality, perinatal and neonatal mortality, live birth, still birth, abortion,
- Abnormal Obstetric :-
  Complications of early pregnancy
  - Abortion – definition, types, causes, management of incomplete, inevitable abortion. Recurrent abortion Induced abortion, aetiopathology, MTP, MTP law, 1st and 2nd trimester abortion.
  - Ectopic pregnancy – causes, clinical feature, D/D of acute abdomen and conservative management of ectopic pregnancy and principles of surgical management
- Hyperemesis gravidarum – definition, aetiology, clinical features and management.
- Family planning and contraception and sterilization
- Various methods and devices, selection of patients, counseling of couples, side effects, failures and complications, laparoscopic sterilization, tubectomy
- Causes and prevention of maternal mortality
- Morbidity and maternal mortality in hospital and community setting.
- Reproductive and child Health programme (RCH) - NRHM
- Current topics in obstetric women's health and gender issues.
- V. Genital infection including STD, AIDS and pelvic tuberculosis, infections affecting individual organs.
- Aetiology, pathology, clinical feature, D/D, principles of basic investigation and medical therapy.
- STD in the female.
- Tuberculosis of female genital tract long term implication, surgical management.

8thSemester

- Abnormal fetal positions and presentation
- Occipitoposterior Breech Face & Brow Transverse lie (shoulder presentation) Compound presentation, cord presentation
- Contracted Pelvis, CPD Uterine dysfunction – classification, recognition of uterine dysfunction
- Principles of induction and augmentation of labour
- Complications of 3rd stage of labour
- Predisposing factors, prevention, management of atonic PPH and Injuries to the parturient canal

- Injury to Vulva, Perineal tears, Laceration of vagina and cervix, rupture uterus
- Antepartum Haemorrhage: Classification and etiopathology Placenta Previa, abruptio placentae – Clinical feature, D/D, USG, Complication and Management
- Pharmacotherapeutics in Obstetrics, Oxytocin, Antihypertensives, tocolytics, anticonvulsants Fetal monitoring, antenatal, intrapartum, medicolegal aspects in OBG.
- Dysfunctional uterine Bleeding
- Endometriosis and Adenomyosis
- Pelvic Inflammatory Diseases
- Fibroid uterus
- Endoscopy in Gynaecology
- Hormones in Gyneacology
- Imaging techniques in Gynaecology
- Operative Gynaecology
- Tubal Patency tests
- Operations on the cervix – cauterization, biopsy, amputation, trachelorrhaphy

9thSemester

- Anaemia in pregnancy
- Hypertensive Disorder in Pregnancy
- Antepartum haemorrhage - Placenta Previa, Abruptio Placenta
- Preterm Labour • IUGR • Prolonged pregnancy
- Rh iso-immunization
- Multiple pregnancy
- Diabetes in Pregnancy
- Operative Obstetrics Indication, technique and complication of
- Episiotomy, Vacuum extraction, Obstetric forceps
- Instrumental evacuation, menstrual regulation
- Caesarean section • Assisted Breech delivery, ECV, IPV
- Cervical encerclage
- Post caesarean pregnancy – risks, identification of scar dehisence
- Repeated pregnancy loss (RPL)
- High risk pregnancy
- Shock in obstetrics • Immunology in obstetrics
- Blood coagulation disorder in pregnancy DIC, HELLP
- Cardio tocography
- Gestational Trophoblastic diseases (GTD)
- Displacement of the uterus, Prolapse
- Malignancy of cervix, uterus Endometrium
- Ovary : Benign and malignant Ovarian Tumors
- Menopause
- Screening Procedure in gynaecology

Syllabus For Clinical Postings

1st clinical term- 3rd semester – 6 weeks – II/I batch

- Introduction
- History taking both obs and gynec
- Obstetric examination
- Antenatal care
- Introduction of contraception
- Diagnosis of pregnancy and symptoms
- Examination of post partum

2nd clinical term – 5th semester – 4 weeks II/III batch with clinical skills of 1st term

- Normal labour - partograph
- Multiple pregnancy
- Abortion
- Vaginal discharge
- Identification of common gynec problems
- Gynec examination
- Scrubbing prior to surgery, disinfection, sterilization, BMW
- Universal precaution

3rd clinical term – 7th semester – 4 weeks III/I – second semester with clinical skills of 2nd term

- Minor OBGY procedure,
- LSCS
- Instrumental delivery
- Family planning operation
- Hysterectomy
- Complication of labour
- Resuscitation of newborn
- High risk pregnancy recognition

➢ **Completion of half requirements of logbook cases**

4th clinical term - 8th semester- 4 weeks III/II- first sem with clinical skills of 3rd term

- Management of high risk pregnancy
  - Anemia
  - PIH
  - Rh incompatibility
  - APH
  - post LSCS pregnancy,
  - preterm labour
  - post term PROM
- Management of abnormal labour
- OBGY specimens, drugs
- Induction and Augmentation of labour
- Fetal wellbeing assessment
- Partograph- abnormal

5th clinical term – 9th semester – 6 weeks III/II – final semester with clinical skills of 4th term

- Ultrasonography in OBGY
- Endoscopy of OBGY
- Infertility and management
- Preventive oncology
- Obstetric emergencies
- National programs and relevant ACT
- Instruments
- Medical disorders of pregnancy
- Third stage labour complications

University Exam Pattern

Theory

Paper 1(Obstetrics) = 40 Marks

Paper 2(Gynecology) = 40 Marks

Internal Marks Theory = 20 Marks

100 Marks

Practical

Practical Exam = 80 Marks

Practical Internal = 20 Marks

100 Marks

- **THEORY INTERNAL MARKS- 20MARKS**

First terminal exam (40marks) (End of 8th Sem)	Preliminary exam (80 marks)	Total (120 marks)	Internal marks (20 marks)
A	B	A+B	A+B/6

- **PRACTICAL INTERNAL MARKS -20MARKS**

Each clinical posting exam (100 marks)	Total clinical posting (5) exam (100 marks*5)	Internal marks (X=10 marks)	Prelim practical exam (80)	Internal marks (Y=10 marks)	Total practical marks (20 Marks)
A	5A	5A/50	B	B/8	X+Y

FIRST INTERNAL ASSESSMENT
OBSTETRIC & GYNECOLOGY (40 MARKS)

Q.1 . Write notes (Two out of Three). (10)

Q.2 . Write notes (Three out of Four). (12)

Q.3 . Write notes (Three out of Four). (12)

Q.4 . Answer to the point in two or three sentences (Six out of Eight). (6)

PRELIMINARY
PAPER-I
OBSTETRIC (40 MARKS)

Q.1 . Write notes (Two out of Three). (10)

Q.2 . Write notes (Three out of Four). (12)

Q.3 . Write notes (Three out of Four). (12)

Q.4 . Answer to the point in two or three sentences (Six out of Eight). (6)

PRELIMINARY
PAPER-II
GYNECOLOGY (40 MARKS)

Q.1 . Write notes (two out of Three). (10)

Q.2 . Write notes (Three out of Four). (12)

Q.3 . Write notes (three out of Four). (12)

Q.4 . Answer to the point in two or three sentences (six out of Eight). (6)

LOG BOOK

TOTAL – 30

1) 10 labour under supervision
   10 labour assisted
2) 10 Antenatal cases/ Postnatal cases

- Half to be completed after 3rd clinical posting
- Completed before preliminary examination.