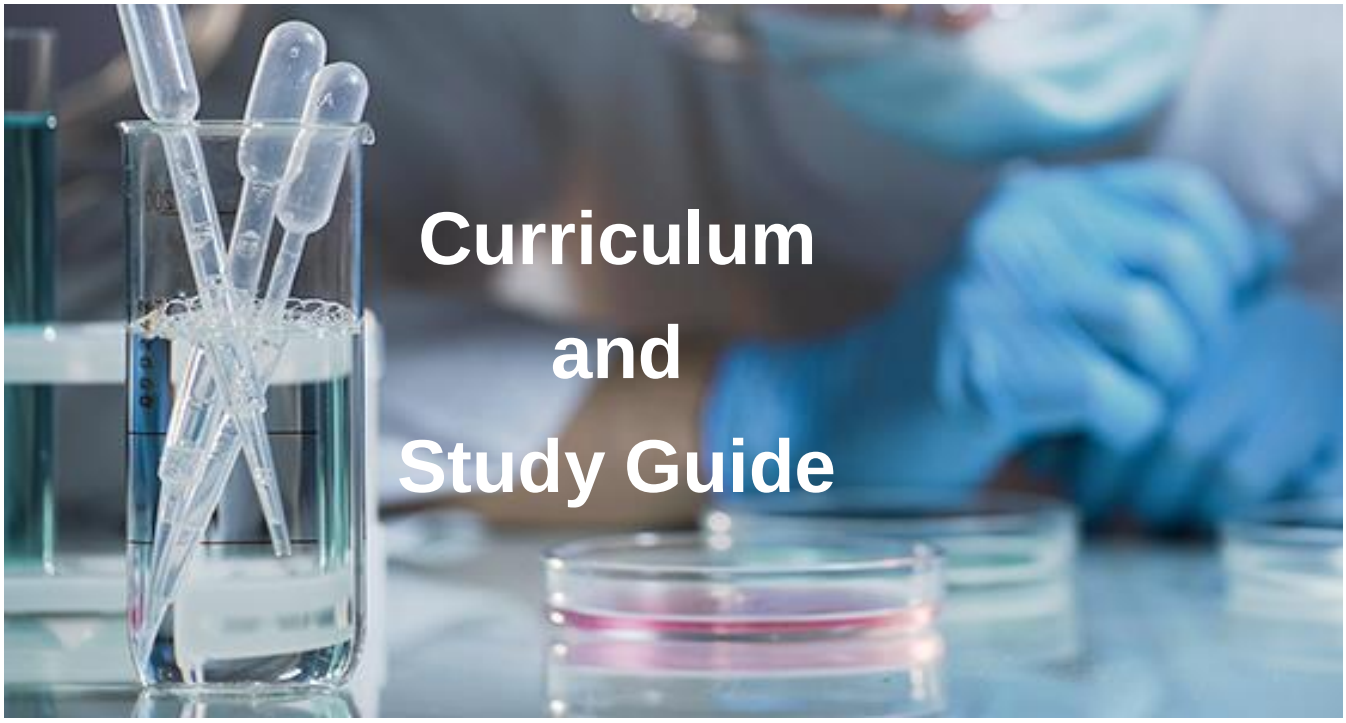
CMH Lahore Medical College and IOD



Curriculum and Study Guide

SPECIAL PATHOLOGY

For 4th Year MBBS

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INTRODUCTION TO STUDY GUIDE

This study guide is a carefully designed effort by the esteemed faculty for the 4th year MBBS students of CMH Lahore Medical College. To put it simply, it is an amalgamation of all the copious aspects of the curriculum, highlighted and paraphrased for your ease. Its purpose is simple, to provide knowledge and learning that would last a lifetime among generations of medical students to come.

The curriculum aspects, including undergraduate competencies, assessment policies and curriculum coordinators have all been meticulously mapped in this guidebook.

In short, the study guide gives an overview of all the intended course outcomes and objectives in relation to the course content. It has been carefully curated to meet the requirements of the PMDC and NUMS syllabus and guidelines to ensure that all requirements are met and no stone is left unturned during this endeavor. Additionally, the assessment rubric tailored to each institutional strategy is also provided.

This guidebook is a genuine effort on the behalf of faculty to cater to students needs and serve as their guiding light for years to come. May it serve its humble purpose.

MISSION STATEMENT

To provide an excellent learning and teaching environment, inculcating ethical values and social responsibilities in undergraduate and postgraduate medical & dental students and nursing and allied health sciences students to enhance the level of comprehension healthcare in the Army/Country.

VISION STATEMENT

To ensure the development and sustenance of internationally acclaimed quality standards and practices for NUMS Higher Education that benefits and lives up to the stakeholder’s needs and expectation.

INTRODUCTION TO SPECIAL PATHOLOGY

Pathology is a mesmerizingly complex subject at the undergraduate level which enables the student to recognize the structural and functional causes of human disease, thereby making it the crux of all medicine. The four aspects of a disease process that form the core of pathology are: the cause of a disease (etiology), the mechanism(s) of disease development (pathogenesis), the structural alterations induced in cells and tissues by the disease (morphologic change) and the functional consequences of the morphologic changes (clinical significance). To gain a proper clinical and factual understanding of each of these four aspects is crucial when it comes to mastering the subject at hand. The constant, individualized efforts of our highly qualified faculty in each and every facet of the subject (histopathology, chemical pathology, and hematopathology) allow this task to be accomplished quite easily provided that the requisite time and effort is put forward on the behalf of the student, as well.

All major subjects of Special Pathology (Histopathology, Hematology and Chemical Pathology) would be covered in the form of lectures, CBL's and CPC's in three blocks. Hence, each and every aspect, whether it be hands-on or textbook, will be covered comprehensively to ensure the complete success of the student in this field.

COURSE OUTLINE

MODULE- I				
DURATION: 11 WEEKS				
By the end of Block I, the students will be able to:				
S No	**Theme/Block**	**Learning Outcomes**	**Course Content**	**% Weightage**
1	**Cardiovascular system**	Correlate the morphology & pathogenesis of cardiac and blood vessel diseases with their etiology & complications	• Atherosclerosis • Hypertensive Vascular Disease • Aneurysm • Vasculitides • Ischemic Heart Disease • Cardiac Failure • Hypertensive Heart Disease • Rheumatic Fever And Rheumatic Heart Disease • Congenital Heart Disease • Cardiomyopathies • Pericardial Diseases • Tumors of CVS	**35**
		Justify the importance of various biochemical markers in diagnosis of cardiovascular disorders	• Cardiac markers/enzymes • Lipid & Lipoproteins	
2	**Respiratory System**	Correlate the morphology & pathogenesis of respiratory disorders with their etiology & complications	• ARDS • COPD • Asthma & Bronchiectasis • Interstitial Lung Diseases • Pulmonary Vascular Disorders • Pneumonias • Granulomatous Diseases • Lung Cancer • Pleura • Pleural Effusion & Pneumo-thorax	**30**

		Justify the importance of various biochemical markers in diagnosis of metabolic and endocrine disorders	Acid base disorders	
3	**Oral cavity and Gastrointestinal tract**	Analyze the Non neoplastic and neoplastic lesions of salivary glands & oral cavity based on their etiology and pathogenesis, morphology & complications	• Inflammatory, neoplastic and non-neoplastic lesions of salivary glands • Tumor and Precancerous conditions of Oral cavity	**35**
	Hepatobiliary system and Pancreas	Correlate the morphology (Microscopic and macroscopic) of **gastrointestinal disorders*** to their etiology and pathogenesis ***Esophagus, Stomach, Small intestine and large intestine	• Motor disorders of esophagus, varices, esophagitis & Barrett's esophagus • Tumors of Esophagus • Gastritis & Peptic ulcer Disease • Tumors of Stomach • Malabsorption & celiac disease • Inflammatory Bowel Disease • Enter colitis • Acute appendicitis • Malignant lesions of small & large intestine	
		Correlate the morphology (Microscopic and macroscopic) of Hepatobiliary and pancreatic disorders **to** their etiology and pathogenesis	• **Hepatobiliary tract** • Cirrhosis • Acute & Chronic hepatitis • Drug induced & toxic Liver Injury • Metabolic Liver disease • Cholestatic diseases • Tumors of Liver • Gall bladder diseases • **Pancreas** • Congenital anomalies Pancreatitis • Neoplastic disorders of exocrine function of pancreas	

		Justify the importance of various biochemical markers in diagnosis of hepatic and pancreatic disorders	• Liver function tests • Diagnosis of acute and chronic Hepatitis • Diagnosis of Acute Pancreatitis	
				100
	End Block Assessment	**End Block Assessment to be taken by concerned institute itself** **Assessment tools: MCQs & SAQs/SEQs**		

MODULE – I	
DURATION : 12 Weeks	
Learning outcomes	**List of Practical**
	Atherosclerosis
	Rheumatic carditis and Myocardial infarction
	Pulmonary tuberculosis and Bronchiectasis
	Lobar Pneumonia and Broncho Pneumonia
	Chronic Bronchitis and Bronchogenic carcinoma
	Chronic gastritis, Peptic ulcer
	Carcinoma stomach, Ulcerative colitis, Crohn's disease, TB intestine
	Cirrhosis, CA liver, Chronic Viral Hepatitis, Ch. Cholecystitis
	Rectal Polyps and Colorectal carcinoma
	Acute appendicitis, Typhoid, Malabsorption

MODULE- II				
DURATION: 12 WEEKS				
By the end of Block, I, the students will be able to:				
S No	**Theme/Block**	**Learning Outcomes**	**Course Content**	**% Weightage**
1	**Urinary System**	Correlate the morphology (Microscopic and macroscopic) of urinary disorders to their etiology and pathogenesis	• ● Glomerular Diseases • Tubulo Interstitial Diseases • Vascular disorders • Congenital & developmental anomalies • Cystic diseases of kidney • Obstructive Uropathy • Neoplasms of kidney • Congenital anomalies of ureter and urinary bladder • Neoplastic disorders of ureters and urinary bladder	**25**
		Justify the importance of various biochemical markers in diagnosis of renal disorders	• Fluid and electrolyte disorders • Renal Function tests • Proteinuria and nephrotic/ nephritic syndrome	
2	**Male genital system**	Correlate the morphology (Microscopic and macroscopic) of male genital disorders to their etiology and pathogenesis	• Congenital anomalies of penis • Congenital anomalies of testis • Testicular tumors • Prostatic hyperplasia and carcinoma • Inflammatory disorders	**15**
		Justify the importance of biochemical markers in diagnosis of prostatic cancer	PSA	
3	**Female genital system**	Correlate the morphology (Microscopic and macroscopic) of female genital tract disorders to their etiology and pathogenesis	• Vulva • Vagina • Cervix • Endometrium & Myometrium • Fallopian tubes • Ovaries • Gestational and placental disorders • Infertility	**25%**

4	**Diseases of Breast**	Correlate the morphology (Microscopic and macroscopic) of Breast pathology to their etiology and pathogenesis	• Benign epithelial lesions • Carcinoma breast • Stromal Tumors	**10%**
		Justify the importance of biochemical markers in diagnosis of breast cancer	Breast tumor markers	
5	**The Skin**	Correlate the morphology (Microscopic and macroscopic) of epidermal and dermal disorders to their etiology and pathogenesis	• Disorders of Pigmentation & Melanocytes • Benign Epithelial tumors • Pre malignant & malignant epidermal tumors • Tumors of the dermis • Chronic inflammatory dermatosis • Blistering diseases • Disorders of Epidermal appendages	**10%**
6	**Bones, Joints and Soft Tissue**	Correlate the morphology (Microscopic and macroscopic) of bone, joints and soft tissue disorders to their etiology and pathogenesis	• Defects in metabolic pathways of Bone development • Acquired disorders of bone & cartilage • Fractures of Bone • Osteomyelitis • Bone tumors & tumor like lesions • Joints • Soft Tissues • Tumors of Adipose tissue • Fibrous tumors • Skeletal muscle tumors • Smooth muscle tumors • Tumors of uncertain origin	**15%**
		Justify the importance of biochemical markers in diagnosis of certain metabolic disorders	Uric acid and Gout	
				100
	End Block Assessment	**End Block Assessment to be taken by concerned institute itself Assessment tools: MCQs & SAQs/SEQs**		

MODULE II	
DURATION: 10 Weeks	
Learning outcomes	**List of Practical**
Establish diagnosis by correlating findings of given slides with given scenarios	Chronic pyelonephritis, renal stones , Wilm's tumor Renal cell carcinoma Transitional cell carcinoma- Bladder
	Benign prostatic hyperplasia Prostate carcinoma Seminoma Testis
	Leiomyoma Cystadenoma (Serous and Mucinous) CA Cervix, Endometrial Carcinoma Mature Cystic Teratoma, Ovarian Tumors, Endometriosis
	Fibroadenoma Invasive ductal carcinoma breast Fibrocystic disease

MODULE- III				
DURATION: 11 WEEKS				
By the end of Module III, the students will be able to:				
S No	**Theme/Block**	**Learning Outcomes**	**Course Content**	**% Weigh tage**
1	**The Endocrine System**	Correlate the morphology & pathogenesis of endocrine gland disorders with their etiology & pathogenesis	• Pituitary Gland • Thyroid gland • Parathyroid gland • Pancreas (endocrine part) • Adrenal gland • Adrenal cortex • Adrenal medulla • Diabetes Mellitus	**25%**
		Justify the importance of various biochemical markers in diagnosis of different endocrine disorders	• Pituitary Function test • Thyroid function test • Adrenal function test • Parathyroid gland disorders • Biochemical diagnosis of infertility	

2	**Central Nervous & Peripheral nervous system (**Neuromuscular junction, skeletal muscle disorders and special sense of vision)	Correlate the morphology (Microscopic and macroscopic) of **central and peripheral nervous system disorders*** to their etiology and pathogenesis ***** Neuromuscular junction, skeletal muscle disorders and special sense of vision	• Disease of Neuromuscular junction • Diseases of Skeletal muscle • Peripheral nerve sheath tumors • Malformations and developmental disorders • Traumatic injury • Cerebro vascular disease • Infections • Prion diseases • Demyelinating Diseases • Neuro degenerative diseases • CNS tumors • Retinal neoplasms	**20%**
Haematology				
3	**Diseases of Lymph nodes, Spleen & thymus**	Differentiate between Hodgkin's and non-Hodgkin's lymphoma on the basis of etiology, morphology & pathogenesis Compare various types of thymomas on the basis of their morphology	• Hodgkin's lymphoma • Non-Hodgkin's lymphoma • Diseases of Thymus • Multiple Myeloma	**10%**
		Justify the importance of biochemical markers in diagnosis of various hematological disorders	• Plasma Proteins	
4	**Red blood cells and bleeding disorders**	Interpret the lab reports of patient with Red cell & coagulation disorders based on pathophysiology of disease Analyze the hazards of blood transfusion Appraise the rejection reactions associated with bone marrow transplantation	• Anemias • Autoimmune, hemolytic anemia • Hemolytic anemia (HS, G6PD, SCD • Thalassemia syndromes • Coagulation disorders (hemophilia, VWD) • Blood transfusion, RH incompatibility • Bone marrow transplantation • Transplantation rejection	**15%**

5	**Diseases of White blood cells**	Interpret the lab reports of patient with white cell disorders based on pathophysiology of disease	• Non-neoplastic white cells disorders (infections, inflammation • Overview and classification of neoplastic proliferation of WBCs	**15%**
6	**Diseases of Platelets**	Interpret the lab reports of patient with platelets disorders based on pathophysiology of disease	• Bleeding diathesis platelet disorders • DIC, Thrombotic Thrombocytopenic purpura, HUS • Myeloproliferative disorders • Myelodysplastic syndrome	**15%**
				100
	End Block Assessment	**End Block Assessment to be taken by concerned institute itself Assessment tools: MCQs & SAQs/SEQs**		

MODULE III	
DURATION : 10 Weeks	
Learning outcomes	**List of Practical**
Establish diagnosis by correlating findings of given slides with given scenarios	Multinodular goiter Follicular Adenoma Papillary Carcinoma thyroid Spectrophotometer
	Pleomorphic adenoma Salivary Gland Giant cell tumor, Osteosarcoma
	Leishman Stain Reticulocyte count
	RBCs disorders
	WBCs disorders
	Blood grouping
	Multiple Myeloma
	Hodgkin’s lymphoma and Non-Hodgkin’s lymphoma
	Tuberculous lymphadenitis

SPECIAL PATHOLOGY

4th PROFESSIONAL MBBS – 2023

Theory

Marks of theory paper = 120
Time Allowed = 03 hrs
Internal Assessment (20%) = 30
Total Marks (MCQs:40%+SEQs:40%+IA:20%) = 150

Pass Marks = 75
Paper-1:
(*****Marks of MCQ component shall be rationalized to 40% weightage out of 150)
80 x MCQs (1 mark each) (80 Marks) Time =80 min

Paper-2:

9x SEQs (7x6 Marks & 2x9 Marks) (60 Marks) Time = 100 min
*****If a candidate obtains 70 marks is MCQs it will be rationalized as: (70/80*60=52.50)

TOPICS	No OF MCQS (80)		NUMBER OF SEQs (09) (7x6 Marks and 2x9 Marks)
	Recall (20)	Application - (60)	
Cardiovascular System	1	4	1
Respiratory System	1	4	1
Oral cavity & Gastrointestinal Tract	2	6	1
Hepatobiliary system & Pancreas	1	3	
Urinary system (Kidney, Urinary bladder & Prostate)	1	4	1
Male Genital System	1	2	
Female Genital System	1	4	1
Breast	1	4	1

MBBS Curriculum Year IV (2023)

Endocrine System	1	2	-
Central Nervous System & Peripheral Nervous System	1	4	1
Bones, Joints & Soft Tissues	2	4	
Chemical Pathology Endocrinology related tests Other chemical pathology Tests	3	9	1
Hematology • RBCs & Bleeding Disorders • White Blood Cells	3	9	1
Skin	1	1	-
Total	**80 (80 Marks)**		**9 (60 Marks)**

Table of specifications for Pre-Annual/Annual Professional Exam: Practical

Practical = 120
Internal Assessment = 30
Total marks =150

Pass Marks = 75

Gen Viva Voce		Practical		Internal Evaluation	Total
Int Examiner	Ext Examiner	*OSPE	Notebook	30	**150**
30	30	56	04		

***** OSPE: 70 Marks

- 14x Stations (4 Marks each)
- 6x Stations Histopathology, 4 x Stations Haematology, 4 x Station Chemical Pathology

MBBS Curriculum Year-IV (2023)

Table of specifications for Pre-Annual/ Annual Professional Exam: Practical

Practical **= 120**

Internal Assessment **= 30**

Total marks **= 150**

Pass Marks **= 75**

Gen Viva Voce	Practical		Total
	OSPE	Project/Research/ Collective	
60	40	20	**120**

BREAKDOWN OF VIVA

1. Total of four examiners = 15 marks with each examiner = 15x4 = 60
2. **OSPE:** Total 10 stations (4 marks each, 4 minutes)

MBBS Curriculum Year-IV (2023)

Teaching Faculty of CMH Lahore Medical College

Ser No	Name	Designation
1	Prof. Dr. Abdus Sattar, Brig (Retd)	HOD/ Professor
2	Prof. Dr. Muhammad Saeed Anwar	Professor
3	Prof. Dr. Sidra Shafiq Cheema	Professor
4	Dr. Afia Sarwar	Associate Professor
5	Dr. Muhammad Abdul Naeem, Brig (Retd)	Associate Professor
6	Dr. Kanwal Cheema	Assistant Professor
7	Dr. Atiya Begum	Assistant Professor
8	Dr. Sabah Khan	Demonstrator
9	Dr. Sidra Naveed	Demonstrator
10	Dr. Ammarah Mehmood	Demonstrator
11	Dr. Muhammad Taimur Ahmad	Demonstrator

Teaching faculty of Combined Military Hospital, Lahore

Ser No	Name	Designation
1	Lt. Col. Muhammad Asif	Professor
2	Col. Helen Marry Robert	Associate Professor
3	Col. Saif Ullah Khan Niazi	Associate Professor
4	Lt. Col. Hamid Nawaz Tipu	Associate Professor
5	Lt. Col. Muhammad Zeeshan Rana	Assistant Professor
6	Lt. Col. Najeeb Ullah Khan	Assistant Professor
7	Lt. Col. Muhammad Yasir Rafiq	Assistant Professor
8	Lt. Col. Muhammad Abid Farooq	Senior Lecturer
9	Lt. Col. Sana Yousaf	Senior Lecturer
10	Lt. Col. Sanam Haneef	Senior Lecturer
11	Maj Muhammad Rizwan	Senior Lecturer

INFRASTRUCTURE RESOURCES

Sr. #.	Infrastructure Resources
1	Lecture Hall • Seating Capacity (159) • Multimedia • Microphone • Computer • UPS
2	Pathology Lab • Specimen in histopathology lab • Microscopes • Slides of Histopathology, Hematology • LED screen

TEACHING FACILITIES AVAILABLE ON CAMPUS

1. LECTURE HALL:

Our college has a multitude of spacious lecture halls, each with a seating capacity of 150 students. In addition, each is also equipped with multimedia resources, microphones, and a computer and speaker system along with UPS arrangements to provide for an uninterrupted learning environment, conducive for active engagement from the students side.

2. PATHOLOGY LABORATORY:

The pathology laboratory is fully equipped catering to the need of our students.

The following facilities are available for the students in order to have a good hands on experience.

a. A **multi head microscope** with camera and screen facility.
b. **Microscopes** for individual use.
c. **Multiple stations** for practice of staining techniques.
d. A **vast collection of slides** related to microbiology, hematology and histopathology.
e. A 36 inch **LED screen** used to project slides when required by the facilitator.
f. Two **Refrigerators** for storage of culture media.
g. A **designated -20 °C freezer** for storage of bacterial strains.
h. **Autoclave** (for sterilization purposes)
i. **Hot air oven** (for sterilization purposes)
j. **Incubator**
k. **A distillation apparatus** for a continued supply of distilled water in the laboratory.

l. **Tissue processor** used for histopathology specimens.

m. Miscellaneous instruments required for the smooth running of the laboratory.

For students' safety and hygiene:

n. An **Eye wash area.**

o. Multiple areas designated for **hand washing** and **alcohol based hand sanitizers** provided in the laboratory.

p. **First aid box** as well as a **spillage kit** also available in the laboratory in case of any accident (cuts, burns or spills in the lab)

3. PATHOLOGY MUSEUM:

The Pathology museum that our department is equipped with is truly one of a kind. It is a beautiful menagerie of hundreds of specimens and their slides all designed to bring the subject alive in the student's mind. Visual resources are a key component of any educational programme and rightly so, as they are invaluable when it comes to studying the gross morphologies of many key diseases. The efforts of our institution have put together such an excellent and hand-picked display that it might even be difficult not to get lost among the inspiring models and specimens!

TEACHING AND LEARNING STRATEGIES

The following teaching / learning methods are used to promote better understanding:

- Lectures
- Small group discussions
- Lab practicals

Lectures:

Lectures are the perfect way to carry out traditional textbook-teaching to a large class. When carried out in well equipped lecture hall, it is an easy way for instructors to intellectually engage and involve students as active participants and ensure that the course is taught in a holistic and well-rounded manner; a plethora of teaching techniques, from videos to animations, are employed to maximize the retention of knowledge from the students side.

Small group discussion (SGD):

Small group discussions help the shy and less articulate to contribute more. Students learn from each other. Everyone gets more practice at expressing their ideas. A two way discussion is almost always more creative than individual thoughts and clears out misconceptions. This teaching format helps students to clarify concepts, acquire skills or attitudes. Students are able to apply the knowledge gained from lectures, tutorials and self-study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

Practical session:

Skills relevant to respective module are observed and practiced where applicable in pathology laboratory. For e.g. how to use a microscope for various slides, staining techniques, biochemical and serological tests etc.

self-Directed learning (SDL):

Self-Directed Learning involves studying without direct supervision in a classroom/library and is a valuable way to learn and is growing in popularity among students. Students assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from various learning resources. Students can utilize the time within college scheduled hours of self-study

WEEKLY TRAINING PROGRAM 4th Year MBBS

1) **LECTURES: 50 minutes each**

   6 per week

2) **PRACTICAL: 80 minutes**

   4 batches x 4 days Practical

3) **ASSESSMENT:**

   A) Number of Class Tests : 2

   1 class test monthly per module

   B) Exam : End of module

ASSESSMENTS

a. There will be two end module exams taken at the end of module I& II. The syllabus for end module examination will be announced by the department at least 02 weeks prior to examination. End block exam will be conducted by the Pathology Department. Assessment tools to be decided by respective faculty. Schedule and date will be announced by the examination branch of respective institute.

b. Pre annual exam will be taken for both theory and practical after completion of the curriculum at the end of block III. Pre-annual examination will be from whole syllabus. Table of specification for Pre annual exam is similar to annual exam. Schedule for Pre-annual exam (Theory and Practical) will be announced by the examination branch of the respective

institute

c. Marks of End block and Pre annual exams will contribute to internal assessment

d. Schedule for annual examination (Theory and Practical) will be announced by NUMS. Practical examination will be conducted by Pathology department while theory part will be conducted by the examination Department, NUMS

Ser. No	HISTOPATHOLOGY
1 - H.P	Atlas of Tumour Pathology:Tumours of The Thyroid Gland. Rosai, Juan , Carcargile, Maria Luisa. Armed Forces Institute of Pathology, Third Series Fascicle
2 - H.P	Atlas of Tumour Pathology: Tumours of The Parathyroid Gland.De Lellis A Ronald. Armed Forces Insitute of Pathology. Third Series Fasicle 6. 1993
3 - H.P	Atlas of Tumour Pathology: Tumours of Mammary Gland. Rosen, Paul, Oberman A. , Harold. Armed Forces Insitute of Pathology. Third Series Fasicle 7. 1993
4 - H.P	Atlas of Tumour Pathology: Tumours of Bones and Joints. Fechner E Robert, Mills E Stacey. Armed Forces Institute of Pathology, Third Series Fascicle
5 - H.P	Atlas of Tumour Pathology: Tumours of Bone Marrow. Richard D. Brunning, Robert W.McKenna. Armed Forces Insitute of Pathology. Third Series Fasicle 9. 1994
6 - H.P	Atlas of Tumour Pathology: Tumours of CNS. Burger, Scheithauer. Armed Forces Insitute of Pathology. Third Series Fasicle 10. 1994
7 - H.P	Atlas of Tumour Pathology: Tumours of The Kidney, Bladder and Related Urinary Structures.William M. Murphy, J. Bruce Beckworth, George M. Farrow. Armed Forces Insitute of Pathology. Third Series Fasicle 11. 1994
8 - H.P	Atlas of Tumour Pathology: Tumours of The Eye and Ocular Adnexa. Mclean, Burnier, Zimmerman, Jakobbiec. Third Series Fasicle 12. 1994
9 - H.P	Atlas of Tumour Pathology: Tumours of The Lymph Nodes and Spleen. Warnke,Weiss, Chan, Clearly, Dorfman. Armed Forces Insitute of Pathology. Third Series Fasicle 14. 1995
10 - H.P	Evan's Histological Appearances of Tumours. David J. B. Ashley . 3rd edition Churchill
11 - H.P	Pathology of Granulomas. Ioachim L Harry, Raven Press. 1983
12 - H.P	Diagnostic Cytology, 2nd edition by Leopold G. Koss
13 - H.P	Interpretation of Prostate Biopsies by Brawn
14 - H.P	Pathology of The Kidney, First Edition Robert H. Heptinstall
15 - H.P	Muscle Biopsy: A Modern Approach
16 - H.P	Tumour of the Uterine Corpus and Gestational Trophoblastic Diseases, Armed Forces Institute of Pathology Third Edition
17 - H.P	Tumours of Cervix, Vagina and Vulva, Armed Forces Institute of Pathology, Third Edition
18 - H.P	Tumours of the Lower Respiratory Tract, Armed Forces Institute of Pathology, Third Edition
19 - H.P	Comprehensive Colour Atlas of Diagnostic and Predictive Histopathology, by Dr Shahid Pervez
20 - H.P	Color Atlas of Histopathology. Curran, R.C. Oxford university press, 1975

Serial No	CHEMICAL PATHOLOGY
1 – C.P	Tietz Textbook of Clinical Chemistry.Burtis and Ashwood, Second Edition
2 – C.P	Porth Pathophysiology: Concepts of Altered Health States. Carol Mattson Porth, Sixth Edition
3 – C.P	Clinical Diagnosis and Management.Laboratory Methods. Todd, Sanford and Davidsohn, Seventeenth Edition
4 – C.P	Endocrinology. Greenspan, Third Edition

Serial No	HEMATOLOGY
1 – H	Postgraduate Hematology Edited by Victor Huffer, Daniel Catovsky, Fifth Edition, Volume 1
2 – H	Postgraduate Hematology Edited by Victor Huffer, Daniel Catorshy, Fifth Edition, Volume 2
3 – H	Hematology updates 2009, Pakistan Society of Hematology
4 – H	Problem based learning in Haematology 1st Edition by Nida Anwar
5 – H	Haematology updates 2010, Pakistan Society of Haematology 2010, Edited by Prof. Khalid Hassan
6 – H	Essential haematology by A.V. Hoffbrand, PAH Moss, J.E Petit Fifth Edition
7 – H	Hematological issues in gynecology and obstetrics.
5 – C.P	Medical and Public Health Laboratory Methods Simmons and Gentzknow
6 – C.P	Manual Of Laboratory Medicine. Armed Forces Institute of Pathology Rawalpindi – Pakistan 2003, Second Edition

MISCELLANEOUS	
Serial No.	
Misc – 1	Harrison's principles if internal medicine 14th edition Volume 1. Fauci, Braenwald, Isselbacher, Wilson, Martin, Kasper, Hauser, Lango. 1998
Misc – 2	Harrison's principles if internal medicine 14th edition Volume 2. Fauci, Braenwald, Isselbacher, Wilson, Martin, Kasper, Hauser, Lango. 1998