



MIU
A Chartered University

DEPARTMENT OF MEDICAL EDUCATION

4TH YEAR MBBS STUDY GUIDES

• CURRICULUM •



OUTCOME-BASED



INTEGRATED



STUDENT-CENTERED



COMMUNITY-ORIENTED



VALUE-DRIVEN

MOHI-UD-DIN ISLAMIC MEDICAL COLLEGE
MIRPUR (AJK), PAKISTAN



ROOTED IN ISLAMIC VALUES



APPROVED BY
ACADEMIC COUNCIL



ALIGNED WITH
PMDC MBBS CURRICULUM
2024 & HEC STANDARDS



PREPARED BY
DEPARTMENT OF
MEDICAL EDUCATION

VERSION

1.0

MOHI-UD-DIN ISLAMIC UNIVERSITY

A Chartered University

MOHI-UD-DIN ISLAMIC MEDICAL COLLEGE MIRPUR

DEPARTMENT OF MEDICAL EDUCATION



NEUROSCIENCES

II

4TH YEAR MBBS

BLOCK: J

DURATION: 8 WEEKS

MODULE CODE: MB4-J-NS-II-19



2. Learning Objectives

General Learning Outcomes

By the end of this module the students would be able to;

1. Describe anxiety disorders and their pharmacological management
2. Explain the concepts of Mood disorders and their pharmacological management
3. Explain psychotic disorders and their pharmacological management
4. Describe the pathophysiology and management of Dementias
5. Elaborate the pathophysiology, clinical features, management, and prevention of cerebrovascular diseases
6. Classify epilepsy and describe the pharmacological management of epilepsy in children and adults
7. Describe the types and protocols of anaesthesia and explain the drugs used as anaesthetics
8. Explain the pathology and clinical features of cerebellar diseases
9. Elaborate the clinical features and pharmacological management of Parkinson's disease
10. Explain the clinical features and management of Motor neuron disease and Friedrich's ataxia
11. Describe the pathology and management of head injury
12. Describe the pathogenesis, clinical features, and management of common CNS infections
13. Classify brain, spinal cord and peripheral nerves tumors, and describe their clinical features and management
14. Explain the pathophysiology, clinical features, investigations and management of Multiple sclerosis, transverse myelitis and
 - i. Guillain Barre syndrome
15. Classify peripheral neuropathies and elaborate their etiologies and clinical presentations
16. Explain the clinical features and forensic approach to a patient with neurotoxic poisons.
17. Explain the forensic aspects of insanity and head injury.
18. Skillful in History taking and Physical examination to compassionately deal with a patient.
19. Display professional values (honesty, accountability, cultural and religious sensitivity), attitudes and behaviors (empathy, ethics, good communication skills and lifelong learner) that embody good medical practice.
20. Exhibit a spirit of inquisitiveness, inventiveness, and ethical conduct while carrying out research in accordance with the prescribed guideline

3. Specific learning objective

Subject	Topic	Learning Objectives	Hou rs	MIT
Theme-1: Disturbed sleep				
Psychiatry	Sleep disorders	Describe the types of sleep disorders	3	Lecture
		Explain the pharmacological and non-pharmacological management of sleep disorders		
		Describe the ways of improving healthy sleep		
	Non-organic insomnia	Define non-organic insomnia		
		Explain the management of non-organic insomnia		
	Sleep wake cycle disorders	Describe the concept of sleep-wake cycle disorder		
		Describe the pharmacological and non-pharmacological management of sleep-wake wake cycle disorder		
Pharmacology	Introduction to the Pharmacology of CNS	Describe basic terms like neurotransmitters, neuromodulator/neurotropic factors, withdrawal symptoms (abstinence syndrome), cross-tolerance, reverse tolerance (sensitization) and cross-dependence	5	Lectures
		Describe the blood-brain barrier and its clinical significance		
		Enlist the principal neurotransmitters and their receptors in the CNS		
		Describe voltage-gated, ligand-gated (ionotropic), ion channels and metabotropic receptors on the neuronal membrane		
		Classify the drugs acting on the CNS		
	Sedative-hypnotics (Minor tranquilizers)	Classify broadly the Sedative-Hypnotics		
	Benzodiazepines	Classify Benzodiazepines		
		Describe the pharmacokinetics of Benzodiazepines		
		Describe the mechanism of action of Benzodiazepines		
		Describe the pharmacological effects of Benzodiazepines		
		Describe the clinical uses of Benzodiazepines		
		Describe the adverse effects of		

		Benzodiazepines		
		Describe the tolerance and dependence on Benzodiazepines		
		Describe the drug interactions of Benzodiazepines		
		Name the antidote (competitive antagonist) to Benzodiazepines		
		Enlist the inverse agonists to Benzodiazepines		
	Barbiturates	Classify barbiturates		
		Describe the mechanism of action and clinical uses of barbiturates		
		Describe the difference regarding the mechanism of action of Barbiturates in comparison to Benzodiazepines		
	Buspirone	Describe the mechanism of action and clinical use of Buspirone		
		Describe the merits and demerits of Buspirone in comparison to Benzodiazepines		
	Ramelteon	Describe the mechanism of action and clinical use of Ramelteon		
	CNS stimulants	Classify CNS stimulants		
	Psychomotor stimulants (Amphetamine, Methylphenidate)	Describe the mechanism of action, clinical uses, and adverse effects of Psychomotor stimulants		
	Respiratory analeptics (Doxapram, Nikethamide)	Describe the mechanism of action, clinical uses and adverse effects of Respiratory analeptics		
	Methyl xanthine/Theophylline, Caffeine, Theobromine)	Describe the mechanism of action, clinical uses and adverse effects of Methyl xanthine		
	Sibutramine	Describe the mechanism of action and clinical use of Sibutramine		
Forensic Medicine	Classification of neurotoxins	Define and classify neurotoxins	4	Lectures
	Cerebral Poisons- Somniferous Poisons • Morphine • Opium • Heroin	Describe and enlist Somniferous poison.		
		Describe the mechanism of action for the Somniferous poison.		
		Describe different signs, symptoms and autopsy appearance in a typical of Somniferous poisons.		
		Describe fatal dose, treatment, and diagnosis for the Somniferous poisons.		

		Describe medico-legal importance for the Somniferous poisons.		
	Inebriant Poisons	Describe and enlist Inebriant poison.		
		Describe mechanism of action for the Inebriant poison.		
		Describe different sign, symptoms and autopsy appearance in a typical of Inebriant poisons.		
		Describe fatal dose, treatment, and diagnosis for the Inebriant poisons.		
		Describe medico-legal importance for the Inebriant poisons.		
	Sedative & Hypnotics	Describe and enlist sedative and hypnotics		
		Describe mechanism of action for the Sedative and hypnotics.		
		Describe different sign, symptoms and autopsy appearance in a typical of Sedative and hypnotics.		
		Describe fatal dose, treatment, and diagnosis for the Sedative and hypnotics.		
		Describe medico-legal importance for the Sedative and hypnotics.		
	Fuels, stimulants and hallucinogens	Describe and enlist fuels, stimulants and hallucinogens.		
		Describe mechanism of action of fuels, stimulants and hallucinogens.		
		Describe different sign, symptoms and autopsy appearance in a typical case of fuels, stimulants and hallucinogens poisoning.		
		Describe fatal dose, treatment, and diagnosis of fuels, stimulants and hallucinogens.		
		Describe medico-legal importance of fuels, stimulants and hallucinogens.		
	Drug Dependence	Describe Drug dependence and its psychological effects.		
		Describe drug abuse and outline the procedure to investigate a case due to narcotics.		
PRIME/MEDICAL EDUCATION	Emotional intelligence (EI)	Explain the concept of EI	1	Lectures
		Differentiate between EQ and IQ		
		Describe & Display appropriate emotional and social intelligence		
PRIME/RESEARCH	Epidemiology	Define epidemiology	1	Lectures
		Explain the basic concepts of epidemiology		

	Study design	Classify and elaborate study designs		
	Screening	Explain the screening in epidemiology		
	Measures of mortality and morbidity	Explain the measures of morbidity and mortality		
Theme 2: Disturbed mood & behaviour				
Psychiatry (mood and anxiety disorders)	Depressive disorders	Classify depressive disorders	6	Lectures
		Describe the etiology, clinical features and management protocols of different depressive disorders		
	Atypical depression and seasonal affective disorder	Describe the clinical presentation of atypical depression		
		Recognize the symptoms of atypical depression		
		Describe the management of atypical depression and seasonal affective disorders		
	Bipolar affective disorders	Describe the clinical features and management protocols of Bipolar affective disorders		
	Suicide	Describe the preventive measures of suicide		
	Anxiety disorders	Classify anxiety disorders		
		Differentiate between medical and psychiatric causes of anxiety		
		Differentiate between anxiety and phobia		
		Describe the pharmacological and non-pharmacological management of different anxiety disorders including relaxation techniques and breathing exercises		
	Dissociative disorders	Explain the different behavioral and neurological presentations of dissociative disorders		
		Describe the pharmacological and non-pharmacological management of dissociative disorders		
	Stress related disorders	Classify stress related disorders		
		Explain the concept of stress in stress related disorders		
		Explain the pharmacological and non-pharmacological management of stress related disorders		
	Somatoform disorders	Classify somatoform disorders		
		Describe the concept of medically unexplained symptoms		
		Counsel a patient with medically unexplained symptoms		

Psychiatry (Psychotic illnesses)	Personality disorders	Classify personality disorders	2	Lectures
		Describe the clinical features, diagnostic criteria and management of personality disorder		
	Psychotic disorders	Differentiate between organic and non-organic psychosis		
		Explain the concept of psychosis		
		Classify psychotic disorders		
	Schizophrenias	Describe the clinical features, diagnostic criteria and management of Schizophrenias		
		Explain the role of psychotherapy and Electroconvulsive therapy in Schizophrenias		
		Describe the rehabilitations strategies with patients of Schizophrenias		
	Delusional disorders	Describe the types and management of delusional disorders		
		Describe the ways of differentiating delusional disorders from Schizophrenias		
	Substance abuse disorders	Describe the concept of drug dependence		
		Classify of drug abuse		
		Describe the principles of management of substance abuse		
		Explain the concept of harm reduction		
General Medicine	Alzheimer's disease and Dementias	Explain the pathophysiology, clinical features and management of Alzheimer's disease	1	Lecture
		Describe the reversible and irreversible causes of Dementia		
Pharmacology	Depression	Describe the Monoamine hypothesis of depression	8	Lectures
	Antidepressants	Classify antidepressants		
	SSRIs (Selective Serotonin Reuptake Inhibitors)	Enlist SSRIs		
		Enlist the most selective SSRIs		
		Describe the pharmacokinetics, mechanism of action, clinical uses, adverse effects and drug interactions of SSRIs		
	TCAs (Tricyclic Antidepressants)	Enlist TCAs		
		Describe the mechanism of action, clinical uses, adverse effects and drug interactions of TCAs		

	MAOIs (Monoamine Oxidase Inhibitors)	Enlist MAOIs		
		Describe the pharmacokinetics, mechanism of action, clinical use, adverse effects and drug interactions of MAOIs		
		Describe Serotonin syndrome		
		Describe Hypertensive Cheese reaction		
		Describe St John's Wort		
		Describe the procedure of switching-over from one category of antidepressants to another one		
		Describe "Augmentation" of antidepressant therapy		
		Describe Electroconvulsive Therapy (ECT) for depression		
	Psychoses (Schizophrenia and others)	Describe the Dopamine hypothesis of Schizophrenia		
	Antipsychotics (Anti- schizophrenic drugs)	Classify Antipsychotics		
		Describe the advantages of Atypical antipsychotics over the Typical (Classical/Traditional/Old) agents		
		Describe the mechanism of action of Antipsychotics		
		Describe the pharmacological effects of Antipsychotics		
		Describe the clinical uses of Antipsychotics		
		Describe the drug interactions of Antipsychotics		
		Describe the adverse effects of Antipsychotics		
		Explain the drug treatment of extrapyramidal syndrome		
	Bipolar affective disorder (Manic Depressive illness)	Describe the concept of "mood-stabilization" in Bipolar affective disorder (Manic Depressive illness)		
	Mood- stabilizing drugs	Enlist Mood-stabilizing drugs		
	Lithium carbonate	Describe the pharmacokinetics, mechanism of action, clinical uses, adverse effects and drug interactions of Lithium carbonate		
	Alcohols	Describe alcoholism		
		Describe the pharmacokinetics of Ethanol		

		Describe the mechanism of action of Ethanol		
		Describe the pharmacological effects of Ethanol		
		Describe the clinical uses of Ethanol		
		Describe the adverse effects of Ethanol		
		Describe Disulfiram-like reaction with example of drugs causing it		
		Describe the management of Ethanol intoxication		
		Describe the management of Ethanol withdrawal symptoms		
		Describe the treatment of alcoholism		
		Describe briefly Methanol poisoning		
		Describe the antidote for Methanol poisoning		
	Opioids (Morphine, Diamorphine, Codeine, Pethidine, Methadone, Pentazocine, Buprenorphine, Dextromethorphan)	Differentiate between Opioids and Opiates		
		Describe the term “narcotic”		
		Describe the source of Opium		
		Enlist the “brain’s own Morphine” (endogenous Opioids)		
		Classify Opioids		
		Enlist Opioids with mixed agonist-antagonist properties		
		Enlist Opioids with partial agonist activity		
		Describe the pharmacokinetics, mechanism of action, pharmacological effects, clinical uses, adverse effects and drug interactions of Opioids		
		Describe the use of opioids as palliative care in terminal illness		
		Describe opioid rotation		
		Describe the treatment of Opioid over dosage		
		Describe the Opioid antagonists (antidotes)		
		Describe Opioid dependence		
		Describe the management of Opioid dependence		
		Describe the contraindications of Opioids		
		Enlist the drugs used for pain in opioid addicts		
	Tramadol	Describe the mechanism of action and clinical use of Tramadol		
	Drugs of abuse	Describe substance abuse, drug dependence, addiction and habituation		

		Describe the Dopamine hypothesis of addiction		
		Enlist the drugs causing addiction		
		Enlist the non-addictive drugs of abuse		
		Describe “Club drugs”		
		Enlist the drugs having high-risk of addiction (scored 5 on the list of relative-risk of addiction)		
		Enlist the drugs having moderate-risk of addiction (scored 4 on the list of relative-risk of addiction)		
		Describe the drug treatment of Nicotine, Alcohol, Cannabis and Opioid abuse		
		Describe the drug abuse in sports with examples		
Forensic Medicine	Insanity and relationship to criminal charges	Define insanity.	5	
		Classify insanity and explain its sub-types		
		Describe relationship of insanity with criminal charges.		
		Describe different pleas and its legal exception based on unsoundness of mind.		
		Describe McNaghten rules, Durham’s rule and Impulse along with its application and criticism.		
		Differentiate between true and feigned insanity		
	Forensic Psychiatry	Define and describe Forensic Psychiatry.		
		Describe different terms used in Forensic Psychiatry:		
		a) Affect		
		b) Confabulation		
		c) Delirium		
		d) Delusion		
	Mental health act	e) Fague		
		f) Hallucination		
		g) Illusion		
		h) Intelligent Quotient		
		i) Lucid Interval		
		j) Neurosis		
		k) Psychopath		
		l) Psychosis		
		m) Stupor		
		n) Twilight states		
	Mental health act	Define mental disorders based on mental health act		
		Describe procedure of admission and		

		discharge of mentally ill patient based on mental health act		
		Describe procedure of handling a wandering lunatic		
	Will	Define testamentary capacity		
		Enlist conditions required for a valid Will		
		Describe the role of a doctor in taking a Will from a sick person		
	Civil and criminal responsibility of mentally ill patients	Explain the concept of civil and criminal responsibility of mentally ill patients		
Community medicine	Mental health	Describe classification of mental health illnesses	1	Lecture
		Define mental health		
		Discuss global perspectives and epidemiology of mental health disorders		
		Discuss risk factors leading to mental health problems		
		Discuss prevention and control of mental health disorders		
	Drug abuse and Alcoholism	Describe the global distribution and increase addiction to drug abuse and alcoholism		
		Discuss causes of drug abuse and alcoholism		
		Discuss the effects of alcoholism on mental health		
		Describe preventive and control measures of drug abuse and Alcoholism		
PRIME/MEDICAL EDUCATION	Conflict resolution	Explain the prerequisites for conflict resolution as a leader	1	Lecture
		Show the ability to solve problems regarding difficult patients/attendant.		
PRIME/RESEARCH	Biostatistics: Introduction	Describe the significance of biostatistics in health and epidemiology	2	Lecture
	Data and variable types	Define and classify variables		
	Sampling	Define sampling		
		Discuss types of sampling		
	Biases in epidemiological studies	Define Bias		
		Discuss different types of biases		

		Discuss how bias can be prevented		
Theme-3: Right sided weakness and inability to speak				
Pathology	Hypoxia, ischemia and infarction	Define hypoxia, ischemia and infarction, and describe its morphology and consequences in the context of CNS involvement	1	Lecture
	Intracranial hemorrhage	Describe the etiology, risk factors and morphology of intracranial haemorrhage		
	Strokes syndromes	Describe the etiology, risk factors, morphology, and clinical and radiological features of stroke		
	Subarachnoid hemorrhage (SAH)	Explain the etiology, risk factors and clinical features of SAH		
General Medicine	Stroke	Describe the risk factors of stroke	1	Lecture
		Explain the types of strokes		
		Describe the clinical features, radiological features, and management of a patient with intracerebral bleed		
		Describe the clinical features, radiological features, and management of a patient with stroke due to an infarction		
Community medicine	Non-communicable diseases: Strokes	Discuss the epidemiological determinants of stroke in community	1	Lecture
		Discuss the prevention and rehabilitation of strokes		
Neurosurgery	Management	Describe the neurosurgical management of stroke and Subarachnoid hemorrhage	1	Lecture
PRIME/RESEARCH	Measures of central tendency	Classify measures of central tendency	5	Lectures
		Calculate measures of central tendency		
		Interpret and signify the results		
	Measures of dispersion	Describe the advantages and disadvantages of different measures		
		Classify measures of dispersion		
		Calculate measures of dispersion		
		Interpret the results of measures of dispersion		
		Explain the advantages and disadvantages of measures of dispersion		
		Explain the use of different measures in specific circumstances		
	Normal distribution	Define normal distribution		
		Describe normal distribution		
		Calculate and graphically represent normal distribution		

		Explain its use & significance in relation to data		
		Describe percentile and interquartile range		
		Calculate and depict percentile and interquartile range		
		Explain use and significance of these in different situations		
	Confidence Interval, Confidence level, Standard error	Define confidence level and interval		
		Describe confidence level and interval		
		Calculate confidence level and interval		
		Explain their use and significance in different situations		
	P value, critical region, rejection region, alpha beta errors	Define P value, critical region, rejection region, $\alpha\beta$ errors		
		Describe P value, critical region, rejection region, $\alpha\beta$ errors		
		Calculate P value, critical region, rejection region, $\alpha\beta$ errors		
		Describe their use and significance in different situations		
Theme-4: Loss of consciousness and Fits				
General Medicine	Seizures	Define seizures	1	Lectures
		Differentiate between a seizure and syncope		
		Classify epilepsy		
		Explain the pathophysiology, clinical features, risk factors, investigations and treatment of Tonic-Clonic epilepsy		
		Explain the pathophysiology, clinical features, investigations and treatment of absence seizures		
		Explain the pathophysiology, clinical features, investigations and treatment of psychomotor epilepsy		
		Explain the management of a patient with status epilepticus		
Pediatrics	Epilepsy	Explain the pathophysiology, clinical features, risk factors, investigations and treatment of Tonic-Clonic epilepsy in children	1	Lecture
		Explain febrile convulsions and its management		
		Describe Infantile spasm and its management		
Anesthesia	Introduction to the subject	Define anesthesia	3	Lectures
		Describe different types of anesthesia		

	General anesthesia	Describe the methods of induction of anesthesia		
	Neuroaxis block	Describe the following terms: • Spinal block • Epidural block • Caudal block • Combined spinal /Epidural		
	Regional anesthesia	Describe the following terms: • Nerve block • Single shot • Continuous infusion • Local infiltration		
	Preoperative evaluation and risk assessment	Explain the purpose of preoperative evaluation		
		Perform risk assessment of patient undergoing general anesthesia		
		Describe the steps of history taking in preoperative evaluation for anesthesia		
		Describe the plans of general and regional anaesthesia techniques		
Pharmacology	Monitoring in anesthesia	Describe the non-invasive and invasive techniques of patients' monitoring for the following parameters during general anaesthesia <u>Non-invasive:</u> - Oxygenation - Hemodynamics - Temperature - Electrical activity - Neuromuscular activity - Circulation <u>Invasive:</u> - Oxygenation - Hemodynamics - Temperature - Cardiac output - Central venous pressure - Circulation	3	Lectures
		Classify anti-seizure drugs		
		Enlist the "Broad-spectrum" anti-epileptics (Valproate and Lamotrigine)		
		Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Carbamazepine		
	Carbamazepine			
	Phenytoin	Describe the pharmacokinetics of Phenytoin with reference to the		

		phenomenon of zero-order kinetics		
		Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Phenytoin		
	Valproate	Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Valproate		
	Ethosuximide	Describe the mechanism of action, clinical uses and adverse effects of Ethosuximide		
	Phenobarbitone	Describe briefly the historic role of phenobarbitone in the management of epilepsy		
	Benzodiazepines	Name the benzodiazepines used in the management of epilepsy		
	Lamotrigine, Topiramate and others	Name the new antiepileptic drugs		
		Describe the mechanism of action, clinical uses and adverse effects of Lamotrigine and Topiramate		
		Describe the use of antiepileptics during pregnancy		
		Describe drug interaction of antiepileptics with oral contraceptive pills		
	Status epilepticus	Describe the management of status epilepticus		
	General anesthetics	Describe the stages of general anesthesia		
		Describe balanced anesthesia		
		Classify General anesthetics		
	Inhaled anesthetics (N ₂ O, Halothane, Isoflurane, Sevoflurane, Desflurane)	Describe the pharmacokinetics of Inhaled anesthetics		
		Discuss the clinical significance of Blood: Gas partition coefficient of Inhaled anesthetics		
		Describe the mechanism of action of Inhaled anesthetics		
		Define MAC ₅₀ (minimum Alveolar Concentration- 50%)		
		Describe the significance of MAC ₅₀		
		Describe the pharmacological effects of Inhaled anesthetics		
		Describe the adverse effects of Inhaled anesthetics		
		Describe second gas effect		
		Describe diffusion hypoxia		
		Describe Malignant hyperthermia and its management		
		Describe the properties of an ideal		

		inhaled anesthetics		
	IV anesthetics (Thiopentone, Propofol, Etomidate, Ketamine, Midazolam, Fentanyl)	Describe the mechanism of action, clinical use and adverse effects of Intravenous anesthetics		
		Describe re-distribution of Thiopentone		
		Define neuroleptanalgesia and neuroleptanaesthesia		
		Describe dissociative anesthesia		
		Name the anesthetic agent that causes dissociative anesthesia		
		Describe TIVA (Total Intravenous Anesthesia) technique		
	Pre-anesthetic medications	Describe Pre-anesthetic medications		
		Describe the drugs used as Pre-anesthetic medications		
	Obstetric analgesia	Describe the drugs for obstetric analgesia		
Forensic medicine	Deliriant Poisons • Dhatura • Hyocyamus nigra Cannabis indica	Describe and enlist Deliriant poisons. Describe mechanism of action of the Deliriant poisons. Describe different sign, symptoms and autopsy appearance in a typical of Deliriant poisons. Describe fatal dose, treatment, and diagnosis of the Deliriant poisons. Describe medico-legal importance of the Deliriant poisons.	1	Lectures
PRIME/RESEARCH	Z test & it's application, Types / shapes of frequency distribution	Define & Describe 'z' test Describe its use in different statistical settings Calculate 'z' test Explain its application in hypothesis testing Interpret and apply to clinical settings Discuss various shapes of frequency distribution Describe the applications of parametric and non-parametric tests	1	Lecture
Theme-5: Tremors				
Pathology	Neurodegenerative disorders: • Alzheimer's disease • Parkinson's disease • Huntington's Disease and	- Describe the etiology, risk factors, morphology and clinical features of Alzheimer's disease - Describe the etiology, risk factors, morphology and clinical features of Parkinson's disease	1	Lecture

	Spinocerebellar ataxias Motor Neuron disease	- Describe the etiology, risk factors, morphology and clinical features of Huntington's disease - Describe the clinical features of spinocerebellar ataxias Describe the etiology, risk factors, morphology and clinical features of Motor Neuron Disease		
General Medicine	Parkinson's disease	Describe the etiology, risk factors, clinical features and management of Parkinson's disease	1	Lecture
		Describe the types, clinical presentation and management of Motor neuron disease		
Pharmacology	Drugs for Parkinsonism	Classify drugs for Parkinsonism	1	Lecture
	Levodopa (with Carbidopa)	Describe the pharmacokinetics, mechanism of action, adverse effects, contraindications and drug interactions of Levodopa		
		Discuss the rationale of combining Carbidopa (or Benserazide) with Levodopa		
		Describe the on-off phenomenon		
		Describe the end-of-dose akinesia		
		Describe "drug holidays" for Levodopa		
	Bromocriptine	Describe the mechanism of action, clinical uses and adverse effects of Bromocriptine		
	Selegiline	Describe the mechanism of action and clinical uses of Selegiline		
		Describe the differentiating point regarding the use of Selegiline as antiparkinsonian drug and its use as an antidepressant drug		
	Apomorphine	Describe the mechanism of action and clinical use of Apomorphine		
	Drug-induced Parkinsonism	Enlist the drugs causing Parkinsonism-like symptoms		
		Enlist the drugs used in the management of drug-induced Parkinsonism		
		Describe the rationale of avoiding Levodopa in drug-induced Parkinsonism		
Pediatrics	Cerebellar ataxias	Describe the clinical features and management of Friedreich's Ataxia	1	Lectures

PRIME/RESEARCH	“t” test & its application	Define & Describe ‘t’ test	4	Lectures
		Explain its use in different statistical settings		
		Calculate ‘t’ test		
		Describe its application in hypothesis testing		
		Interpret and apply to clinical settings		
		Calculate degree of freedom		
	Chi square test & its application	Describe ‘ χ^2 ’ test		
		Describe its use in different statistical settings		
		Calculate ‘ χ^2 ’ test		
		Explain its application in hypothesis testing		
	Correlation, regression	Interpret and apply to clinical settings		
		Describe Correlation & Regression		
	Practical Problems in biostatistics	Interpret and apply to clinical settings	1	Practical
		Discuss practical problems encountered in the application of biostatistics and SPSS		

Theme-6: Headache

Pathology	Meningitis	Explain the etiology, clinical features, investigations and complications of acute pyogenic meningitis	2	Lectures
		Explain the etiology, clinical features, investigations and complications of Tuberculous meningitis		
	Encephalitis	Explain the etiology, clinical features, investigations and complications of viral encephalitis		
	Brain abscess	Explain the etiology, clinical features, investigations and complications of brain abscess		
	Cerebral Toxoplasmosis	Explain the etiology, clinical features, investigations and complications of Cerebral Toxoplasmosis		
	Tumors of CNS	Describe the classification of brain tumors on the basis of primary and secondary origin and benign and malignant		
	- Gliomas - Embryonal neoplasms - Meningioma - Other neoplasms	- Describe the classification, gross and microscopic morphology and clinical features of Gliomas - Describe the classification, gross and microscopic morphology and clinical features of embryonal neoplasms of brain - Describe the gross and microscopic morphology and		

		clinical features of Meningioma • Enlist brain neoplasms other than gliomas, meningioma and embryonal cell neoplasms • Enlist the metastatic brain neoplasms		
Pharmacology	Migraine and Cluster headaches	Classify drugs used for the treatment of Migraine and Cluster headaches	1	Lecture
		Enlist the drugs used for the prophylaxis of Migraine and Cluster headaches		
	Triptans (Sumatriptan and others)	Describe the mechanism of action, clinical use and adverse effects of Sumatriptan		
	Ergot alkaloids	Enlist Ergot alkaloids		
		Describe the pharmacological effects of Ergot alkaloids		
	Ergotamine	Describe the mechanism of action, clinical use and adverse effects of Ergotamine		
	Neuralgias (Neuropathic pain)	Describe the drug treatment of neuralgias (Trigeminal, post-herpetic and others)		
Forensic Medicine	Head Injury	Describe head injury in relation to scalp and skull injuries.	1	Lecture
		Classify different varieties of skull fractures.		
		Explain commonest site of skull fracture.		
		Describe mechanism of cerebral injury including coup and counter coup mechanism.		
		Describe injuries to cranial content and its medicolegal importance.		
		Describe intracranial hemorrhages and its types in detail as per medicolegal point of view.		
		Describe the medicolegal aspects of Punch drunk syndrome		
General Medicine	Meningitis	Explain the etiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis	1	Lecture
		Explain the etiology, pathogenesis, clinical presentation, investigations and management of Tuberculous meningitis		
	Encephalitis	Explain the etiology, pathogenesis, clinical presentation, investigations		

		and management of viral encephalitis		
Community medicine	Rabies	Explain the etiology, clinical presentation of a patient with Rabies	1	Lecture
		Describe post-exposure prophylaxis of Rabies		
Family medicine	Rabies prophylaxis	Describe the types of wounds inflicted by rabid dog bite	1	Lecture
		Explain the types of active and passive immunisation for Rabies post-exposure prophylaxis		
		Describe the indications of Rabies vaccine and immunoglobulins		
Pediatrics	Meningitis	Explain the etiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis in children and neonates	1	Lecture
	TBM	Explain the etiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis in children		
Psychiatry	Chronic daily headache	Differentiate between neurological and psychological headache (chronic tension headache)	1	Lecture
		Identify the red signs in patients with headache		
		Describe the principles of management of acute and chronic headaches		
PRIME/RESEARCH	Data analysis	Use MS Excel for data analysis	3	Practical
		Use SPSS for data analysis		
		Use Endnote for reference management		
		Compile, analyze and write a dissertation		
Theme-7: Paraplegia				
Pathology	Multiple sclerosis and other demyelinating disorders of CNS	Explain the pathogenesis, morphology and clinical features of multiple sclerosis	1	Lecture
		Describe the morphology of the following:		
		- Acute demyelinating encephalomyelitis - Acute necrotizing hemorrhagic encephalitis		
Forensic Medicine	Neurotoxins: Spinal Poisons	Describe and enlist spinal poison.	1	Lecture
		Describe mechanism of action for the spinal poison.		
		Describe different sign, symptoms and		

		autopsy appearance in a typical case of spinal poisons.		
		Describe fatal dose, treatment, and diagnosis for the spinal poisons.		
		Describe medico-legal importance for the spinal poisons.		
		Describe vertebral and spinal injuries		
	Snake bite neurotoxins	Describe different sign, symptoms and autopsy appearance in a typical case of snake bite poisons.		
	Botulism toxins	Describe different sign, symptoms and autopsy appearance in a typical case of botulism		
General Medicine	Multiple sclerosis	Explain the pathophysiology, clinical features and management of Multiple sclerosis	1	Lecture
	Transverse myelitis	Describe the etiology, pathophysiology, clinical features and management of Transverse myelitis		
	Caries spine	Explain the pathophysiology, clinical features, investigations and management of Caries spine		
Orthopedics	Management of traumatic paraplegia	Describe the general management of a patient with traumatic paraplegia	1	Lecture
Neurosurgery	Traumatic paraplegia	Describe the general management of a patient with traumatic paraplegia	1	Lecture
	Spinal Tumor	Describe the types, clinical features and surgical management of spinal tumors		
Theme-8: Numbness and tingling				
Pathology	Patterns and types of peripheral nerves injury	Describe the patterns and types of neuronal injury	2	Lectures
	Acute and chronic demyelinating neuropathies	Describe the pathophysiology and clinical features of Guillain Barre syndrome		
		Explain the pathophysiology of Chronic demyelinating polyneuropathies		
	Myasthenia Gravis	• Describe the pathophysiology and clinical features of Myasthenia Gravis		
	Tumors of Peripheral nerves	Enlist the tumors of peripheral nerves	3	Lectures
	Describe the clinical features, of Neurofibromatosis			

Pharmacology	Local anesthetics (Lignocaine and others)	Classify Local anesthetics		
		Enlist the Local anaesthetics used for surface anaesthesia		
		Enlist the Local anesthetics used for infiltration anesthesia, nerve block, spinal anesthesia and epidural anesthesia		
		Describe EMLA (Eutectic Mixture of Local Anesthetics) and its clinical use		
		Describe the pharmacokinetics of Local anesthetics		
		Describe the mechanism of action of Local anesthetics		
		Describe the pharmacological effects of Local anesthetics on nerves		
		Describe the differential blockade of peripheral nerves by Local anesthetics		
		Describe the pharmacological effects of Local anaesthetics on other excitable membranes		
		Describe the clinical uses of Local anaesthetics		
		Describe the major advantages of adding Adrenaline to Lignocaine for infiltration anaesthesia		
		Calculate the quantity of Adrenaline/ml in the traditionally used combinations of Adrenaline and Lignocaine (i.e. 1:200,000 & 1:80,000)		
		Describe the adverse effects of Local anaesthetics		
Forensic Medicine	Neurotoxins: Peripheral poison	Describe and enumerate peripheral poisons.	1	Lecture
		Describe mechanism of action for the peripheral poisons.		
		Describe different sign, symptoms and autopsy appearance in a typical of peripheral poisons.		
		Describe fatal dose, treatment, and diagnosis for the peripheral poisons.		
		Describe medico-legal importance for the peripheral poisons.		
General Medicine	Guillain Barre syndrome	Explain the pathophysiology, clinical features and management of Guillain Barre syndrome	1	Lecture
	Neuropathies	Describe the causes, types, distribution and clinical features of different neuropathies		
	Myasthenia	Explain the pathophysiology, clinical		

	Gravis	features and management of Myasthenia Gravis		
		Describe the clinical features, types and management of Neurofibromatosis		
Pediatrics	Hereditary neuropathies	Describe the types, clinical features and management of hereditary neuropathies	1	Lecture
Orthopedics	Peripheral nerve injury	Describe the types and management of peripheral nerve injury	1	Lecture
		Explain entrapment neuropathies		
		Describe the risk factors, clinical features and management of Carpal tunnel syndrome		
Practical Work				
Pathology	CSF	1. Describe the chemical, cytological composition of CSF 2. Estimate the following analysis of CSF: • Chemistry • Cytology • Gram stain • Microbiology		
	Histopathological specimens of brain tumors	Identify the gross structure and microscopic features of: • Meningioma • Glioma/Astrocytoma		
Pharmacology	Depression	Formulate a prescription for a newly diagnosed case of depression		
	Epilepsy	Formulate prescriptions for patients with Tonic-Clonic and Petit-mal epilepsy		
	Migraine headache	Formulate prescription for a patient with migraine headache		
Forensic medicine	Somniferous poisons	Recognition of Opium and Heroin		
	Inebriant poisons	Recognition of Ethyl Alcohol and its examination		
	Fuel	Recognition of Kerosene oil		
	Deliriant	Recognition of Dhatura and Cannabis		
	Spinal poison	Recognition of Nux Vomica seeds		
Community medicine	Data presentation • pie chart	Identify and interpret the charts		

	• histogram • bar chart and its types • venn diagram • scatter plot			
	Application and Interpretation of statistical data	Apply a statistical test on a given scenario		
	Data interpretation	Interpret the normal distribution curve, skewed distribution, bi and poly-modal distribution & Standard Normal Curve		

MIT: Mode of information transfer. E.g. lecture, SGD, DSL, Practical, skill lab etc etc.

MOHI-UD-DIN ISLAMIC MEDICAL COLLEGE MIRPUR

DEPARTMENT OF MEDICAL EDUCATION



GIT & HEPATOBILIARY-II

4TH YEAR MBBS

BLOCK: K

DURATION: 12 WEEKS

MODULE CODE: MB4-K-GIT-II-20



2. Learning Objectives

General Learning Outcomes

By the end of this module the students would be able to;

Knowledge

1. Describe the development of foregut, midgut and hindgut.
2. Discuss the anomalies of the gut.
3. Describe gross and microscopic anatomy of various parts of GIT.
4. Describe gross and microscopic features of liver and biliary system.
5. Explain the physiology of GIT.
6. Describe biochemistry of digestive juices
7. Describe biochemistry of digestion and absorption of carbohydrates, proteins and lipids
8. Understand and explain the mechanism of the metabolism of the liver
9. Explain pathological findings identified in GIT pathology
10. Enlist pathologies involving gastrointestinal tract
11. Identify role of pharmaceutical agents used for diseases involving GIT like vomiting and diarrhea.

Skills

1. Interpret the liver function tests in different hepatic diseases.
2. Write prescriptions for common GIT & hepatobiliary disorders.
3. Describe medicolegal aspects of abdominal trauma.
4. Describe medicolegal aspects of vegetable acid, corrosive and irritant poisoning.
5. Describe the epidemiology and prevention of malnutrition and viral hepatitis.
6. Interpret radiological investigations in relation to GIT

Attitude

The students must show positive attitude to:

1. Develop good manners and should be honest to their studies
2. Work hard and be regular and punctual in the class
3. Participate in class and practical work efficiently
4. Follow the basic laboratory protocols.
5. Develop communication skills with sense of responsibility
6. Demonstrate the effective attitude towards the teachers and colleagues
7. Maintain ethical values in dealing with patients.
8. Demonstrate a professional attitude, team building

spirit and good communication skills

3. Specific learning objectives

Theme-1(Difficulty in swallowing)				
Subject	Topic	Hours	S#	Learning objective
Pathology	Salivary Gland (Inflammation and tumors)	1	1	Classify the inflammatory and neoplastic diseases of salivary gland.
			2	Describe the etiology, morphology and clinical presentation of inflammatory and neoplastic diseases of salivary gland.
	Esophagus	2	3	Classify esophagitis.
			4	Describe the etiology, pathophysiology, morphology, clinical presentation and complications of esophagitis
			5	Classify esophageal tumors.
			6	Describe the etiology, pathogenesis, morphology, clinical presentation, diagnosis and complications of esophageal tumors
Medicine	Oral Cavity Diseases	1	7	Discuss the etiology of stomatitis and Aphthous ulcers

			8	Discuss the clinical features of stomatitis and Aphthous ulcers
			9	Discuss the investigations of stomatitis
			10	Devise a management plan for stomatitis and Aphthous ulcers
	Esophagus:	1	11	Discuss the causes of esophageal motility Disorders
	1) Esophageal motility disorders		12	Discuss the clinical features of esophageal motility disorders
			13	Discuss the relevant investigations of esophageal motility disorders
			14	Devise a management plan of esophageal motility Disorders
	2) Esophagitis	1	15	Discuss the etiology of esophagitis
			16	Discuss the clinical features of esophagitis
			17	Discuss the appropriate diagnostic testing for Esophagitis
			18	Devise a management plan for esophagitis
	3) Cardia achalasia	1	19	Discuss the etiology, clinical features, investigations and management of Cardia Achalasia
	4) Gastro Esophageal reflux disease (GERD)		20	Discuss the risk factors, etiology, clinical features, investigations, complications and management of GERD
ENT	Cleft lip and palate	1	21	Discuss the etiology, clinical features, investigations, complications and management of cleft lip and palate
	Pharyngitis and Tonsillitis	1	22	Discuss the etiology, clinical features, investigations, complications and management of Pharyngitis and acute Tonsillitis

			23	Explain the clinical features, and management of peritonsillar abscess
			24	Discuss the classification, etiology, clinical features, investigations, and management of Chronic Tonsillitis
	Oropharyngeal cancer	1	25	Discuss the classification, etiology, clinical features, investigations, and management of oropharyngeal cancers
	Salivary glands	1	26	Classify diseases of the salivary glands
			27	Explain the etiology, clinical features, investigations and management of Mumps, and Sialadenitis
			28	Explain the etiology, clinical features, investigations and management of salivary duct stones
	Dysphagia	1	29	Explain the types, etiology, clinical features, investigations and management of a patient with dysphagia
Surgery	Tumors of the esophagus	1	30	Discuss the classification, etiology, clinical features, investigations, staging and management of Esophageal cancers
	Para esophageal		31	Explain the etiology, clinical features, investigations and management of Para-esophageal hiatus hernia
PRIME/ Medical Education	Social accountability	1	32	Explain the concept of social accountability
			33	Differentiate between different social accountability issues

Theme-2(Epigastricpain)

Pathology	Gastritis	1	34	Explain the types, etiology, microscopic morphology and clinical features of Gastritis
	Peptic ulcers	2	35	Discuss the etiology, pathophysiology, morphology, complications and lab. diagnosis of peptic ulcer disease
			36	Discuss the role of H. Pylori & campylobacter in the causation of Peptic ulcer disease
			37	Discuss the morphology, virulence factors and lab diagnosis of H. Pylori & campylobacter
	Gastric polyps and tumors	1	38	Classify gastric polyps and tumors
			39	Describe the pathogenesis, morphology, lab diagnosis and complications of gastric polyps and tumors.
Medicine	Gastritis	1	40	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis
	Peptic ulcer disease	2	41	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis

			42	Describe H. pylori eradication therapy protocols in the treatment of peptic ulcer disease
	Upper GI Bleeding	1	43	Explain the etiology, clinical features, investigations and management of a patient with upper GI bleeding
			44	Describe the indications and procedures of pharmacological and endoscopic treatment of variceal bleeding
Pharmac	Anti-emetics	2	45	Classify anti-emetic drugs

ology			46	Describe the mechanism of serotonin antagonists as anti-emetic agents.
			47	Enlist the clinical uses (anti-emetic) and adverse effects of serotonin antagonists.
			48	Describe the pharmacological basis of serotonin antagonists in chemotherapy induced vomiting.
			49	Describe the mechanism of H ₁ -antagonists as anti-emetic agents.
			50	Enlist the clinical uses (anti-emetic) of H ₁ -antagonists.
			51	Describe the mechanism of anticholinergic drugs as anti-emetic agents.

			52	Enlist the clinical uses (anti-emetic) of anticholinergic drugs.
			53	Describe the pharmacological basis of scopolamine in motion sickness.
			54	Describe the anti-emetic mechanism of Domperidone).
			55	Enlist the clinical uses (anti-emetic) and adverse effects of D ₂ -receptor blockers.
			56	Compare the pharmacological features of metoclopramide & Domperidone.
			57	Describe the drug interaction of metoclopramide with levodopa.
			58	Describe the mechanism of neuroleptics as anti-emetic agents.
			59	Enumerate the clinical uses (anti-emetic) of neuroleptic drugs.
			60	Describe the antiemetic mechanism of benzodiazepines.

			61	Describe the antiemetic mechanism of glucocorticoids.
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			62	Enumerate the indications (anti-emetic)
			63	List anti-emetic drugs used in morning sickness.
			64	List anti-emetic drugs used in chemotherapy induced vomiting.
			65	List the drugs used in variceal hemorrhage
			66	Describe the mechanism of somatostatin and octreotide in variceal hemorrhage
			67	Describe the mechanism of Vasopressin & Terlipressin in variceal hemorrhage
			68	Describe the mechanism of beta-blockers in variceal hemorrhage
	Drugs used in the treatment of variceal bleeding	2	69	Classify the drugs used in Peptic ulcer disease
			70	Describe the mechanism of action, indications and adverse effects of proton pump inhibitors (PPIs).
			71	Describe the pharmacokinetics of PPIs with special emphasis on time of administration
			72	Describe the drug interaction of Omeprazole & H ₂ blockers with Sucralfate
			73	Describe the drug interaction of Omeprazole with Clopidogrel

			74	Describe the mechanism of action, indications and adverse effects of H ₂ -blockers.
			75	Compare/differentiate H ₂ -blockers in terms of bioavailability and interactions
			76	Describe the mechanism of action, indications and adverse effects of Antacids.
			77	Enumerate the properties of an ideal antacid.

			78	Describe the pharmacokinetics of antacids with special emphasis on time of administration
			79	Describe the drug interactions of antacids with tetracyclines, iron and fluoroquinolones.
			80	Describe the mechanism of sucralfate in the treatment of peptic ulcer
			81	List the indications of sucralfate.
			82	Discuss the drug interaction of sucralfate with digoxin, ketoconazole and tetracyclines.
			83	Describe the pharmacokinetics of sucralfate with special emphasis on time of administration.
			84	Describe the mechanism, indications and adverse effects of bismuth compounds.

			85	Describe the role of anticholinergic drugs in peptic ulcer.
			86	List the indications (anti-peptic anticholinergic drugs).
			87	Discuss the pharmacological basis for the use of prostaglandin analogues in the treatment of peptic ulcer.
			88	List the contraindications of misoprostol.
			89	Describe triple therapy for the eradication of H. pylori infection.
			90	Describe quadruple therapy for the eradication of H. pylori infection
Forensic medicine	Common household poisons	1	91	Enlist, domestic, medicinal and garden poisons commonly used
	Corrosives/Mineral acids		92	Enlist different commonly used mineral acids
			93	Enumerate physical appearance and uses of Sulphuric acid
			94	Describe mechanism of action, fatal dose & period of Sulphuric acid

			95	Describe clinical features and treatment of Sulphuric acid burns
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			96	Describe postmortem appearance and forensic importance of Sulphuric acid burns
			97	Enumerate physical appearance and uses of nitric acid
			98	Describe mechanism of action and fatal dose & period of nitric acid
			99	Describe clinical features and postmortem appearance of nitric acid burns
			100	Enumerate physical appearance and uses of hydrochloric acid
			101	Describe clinical features and postmortem appearance of hydrochloric acid burns
	Corrosives/Alkali	1	102	Enlist different commonly used alkali
			103	Enumerate physical appearance and uses of alkali
			104	Describe mechanism of action, clinical features and treatment of alkaline burns
			105	Describe postmortem appearance and forensic importance of alkali burns
	Corrosive/organic acid	1	106	Enlist different commonly used organic acids
			107	Enumerate physical appearance and uses of carbolic acid

			108	Describe mechanism of action, fatal dose & period of carbolic acid
			109	Describe clinical features and treatment carbolic acid poisoning
			110	Describe postmortem appearance and forensic importance of carbolic acid poisoning
			111	Enumerate physical appearance and uses of oxalic Acid
			112	Describe mechanism of action, fatal dose & period of oxalic acid
			113	Describe clinical features and treatment of oxalic acid poisoning
			114	Describe postmortem appearance and forensic importance of oxalic acid poisoning
	Corrosive/	1	115	Enumerate physical appearance, sources and uses of cyanides
			116	Describe mechanism of action, fatal dose & period of cyanides
			117	Describe clinical features and treatment cyanide poisoning
			118	Describe postmortem appearance and forensic importance of cyanide acid poisoning

Surgery	Gastric cancer	1	119	Describe the types, etiology, risk factors, lab diagnosis and management of a patient with gastric cancer
	Gastric outlet obstruction	1	120	Describe the etiology, diagnosis and management of a patient with gastric outlet obstruction
Community medicine and public health	Health system of Pakistan: Introduction	2	121	Describe the health care system of Pakistan using WHO health system framework
	Primary health care (PHC)		122	Define PHC
			123	Describe the history of development of PHC

			124	Describe the concepts and components of PHC
			125	Describe comprehensive & selective PHC
			126	Describe reasons for failure of PHC
			127	Describe Health Systems before & after PHC
			128	Describe district health care system
			129	Enumerate indicators for assessing PHC
	Health education	3	130	Define health education
			131	Describe objectives and functions of Health Education
			132	Describe the components of health education
			133	Describe the methods of health education

			134	Describe the communication channel in health Education	
			135	Describe the constraints in health education	
			136	Describe classification of theories of health Educaion	
			137	Describe the stages in health education	
			138	Describe the principles of health education	
			139	Describe the strategies for an effective health education program	
			140	Explain the methods of evaluation effectiveness of a health education project	
			Health	141	Define concept of HMIS
				142	Enumerate the components of HMIS
				143	Describe its importance in health care delivery System
	144	Enumerate the principles of HMIS			
	145	Give the causes of failure of HMIS			
	Hospital administration	1	146	Define health care delivery system	
			147	Describe the need of a specialized hospital administration	
			148	Describe the attributes of a good hospital Administrator	

			149	Describe functions involved in hospital administration
			150	Describe the level of hospitals and management levels in a hospital
	Health plans - Longitudinal, horizontal, integrated, 5 year, ADP, SAP, Short term, long term	1	151	Describe different health plans
			152	Describe characteristics of health plans
	Health plans–MDGs	1	153	Enumerate MDGs
			154	Describe targets & indicators of various health related MDGs
			155	Describe reasons for failure to achieve MDGs
	Health plans–SDGs	1	156	Enumerate SDGs related to health
			157	Describe targets & indicators of various health related SDGs
			158	Describe Pakistan progress on set targets
	Health planning	1	159	Define health planning
			160	Describe importance & use of planning in health
			161	Explain the reasons for ineffective health planning in Pakistan
			162	Describe health planning cycle
			163	Describe the types of health planning

	Health economics	1	164	Define Health economics
			165	Explain the importance of economic studies in health
			166	Describe different tools used in economic Evaluations
	Health policy	1	167	Define health policy
			168	Describe its role in health system
			169	Describe different stages in policy making
			170	Describe the different types of policies
			171	Describe the constraints in policy making

			172	Describe health policy of Pakistan.
	Role of international health agencies in public health	1	173	Enumerate international health agencies working in health sector.
			174	Discuss structure and function of WHO & UNICEF
			175	Explain the roles of WHO & UNICEF in Pakistan.

Theme-3 (Pain right upper abdomen)

Anatomy	Gross anatomy	1	176	Explain the lobes and segments of the liver
			177	Discuss the gross structure of gall bladder and biliary channels
			178	Explain the gross and microscopic structure of the pancreas
	Liver histology		179	Explain the microscopic structure of the liver and gall bladder

Pathology	Liver Function Tests	1	180	Enumerate the functions of the liver. Explain the significance of different liver function tests. Interpret the Liver function tests in different diseases.
	Mechanisms of liver injury and repair	1	181	Describe the etiology and morphology of liver injury and repair
	Acute Liver failure		182	Describe the etiology, pathogenesis, clinical and biochemical and other features of acute liver failure
	Chronic Liver disease and liver cirrhosis	1	183	Describe the etiology, pathogenesis, clinical and biochemical and other features of chronic liver disease
			184	Explain the complications of liver cirrhosis
	Portal hypertension		185	Describe the etiology, pathogenesis, clinical features and complication of portal hypertension

	Viral hepatitis A and E	1	186	Explain the Etiology, pathogenesis, morphology and clinical features of Acute viral hepatitis A and E infection
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	Viral hepatitis B	2	187	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of Acute viral hepatitis B infection
			188	Explain the pathogenesis, morphology and clinical features of Chronic viral hepatitis B infection
			189	Discuss the stages of viral hepatitis B infections
			190	Discuss the complications of chronic Hepatitis B virus infection
			191	Discuss the serological markers of hepatitis B Virus infection
			192	Explain the preventive strategies of Hepatitis B virus infection
	Viral Hepatitis C	1	193	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of viral hepatitis C infection
			194	Discuss the complications of chronic Hepatitis C virus infection
	Autoimmune hepatitis	1	195	Define autoimmune hepatitis
			196	Explain the serological and morphological features of autoimmune hepatitis
	Toxin and hepatitis		197	Explain the etiology and morphological features of toxins and drug induced hepatitis

	Alcoholic liver disease	1	198	Discuss the morphology, pathogenesis
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Metabolic liver diseases	1	199	Describe the morphology, clinical features and complications of NAFLD, Hemochromatosis, Wilson's disease and Alpha-1 Anti-Trypsin deficiency
		200	Describe the etiology, morphology, features and complications of Hemochromatosis
		201	Describe the etiology, morphology, features and complications of Wilson's disease
		202	Describe the etiology, morphology, clinical features and complications of Alpha-1 Anti-Trypsin deficiency
Liver abscess	1	203	Describe the etiology, pathogenesis, morphology, clinical presentation, complications
Tumors of the liver	1	204	Classify liver tumors
		205	Explain the benign tumors of the liver
		206	Discuss the risk factors, etiology, morphology, clinical features, staging and complications of hepatocellular carcinoma

	1	207	Discuss the types, risk factors, morphology, clinical features and complications of gall stones
		208	Discuss the risk factors, etiology, morphology, clinical features and complications of acute cholecystitis
		209	Discuss the risk factors, etiology, morphology, clinical features and complications of Chronic Cholecystitis

	Gall bladder cancer	1	210	Discuss the risk factors, etiology, morphology, clinical features, staging and complications of carcinoma of gall bladder
	Pancreas	2	211	Enlist and define the congenital anomalies of Pancreas
			212	Discuss the risk factors, etiology, morphology, clinical features and complications of acute Pancreatitis
			213	Discuss the risk factors, etiology, morphology, clinical features and complications of chronic pancreatitis
			214	Describe the pathogenesis and complications of pancreatic pseudocyst

			215	Discuss the risk factors, etiology, morphology, clinical features, staging and complications of carcinoma of pancreas
Pediatrics	Hereditary hyperbilirubinemias	1	216	Classify hereditary hyperbilirubinemias
			217	Explain the types, clinical features, investigations and management of hyperbilirubinemias
	Acute hepatitis A	1	218	Explain the Etiology, pathogenesis, features, investigations and treatment of Acute viral hepatitis A infection
Medicine	Hepatitis B virus infection	1	219	Explain the Etiology, pathogenesis, viral hepatitis B infection
			220	Explain the Etiology, pathogenesis, features, investigations and treatment of chronic viral hepatitis B infection

	HepatitisCvirusinfecti on	1	221	Explain the Etiology,pathogenesis, viralhepatitisCinfection
			222	Explain the clinical features,investigations, managementand complicationsof liver cirrhosis

		1	223	Explainthetreatmentofapatientwithhepaticencephalopathy
	Metaboliccliver diseases		224	Discuss the management of apatient
			225	Discuss the management of apatient
			226	Discussthemanagementofapatientwithprimarybiliarycirrhosis
			227	Discuss the management of apatient
	Hepaticvein obstruction	228	Discuss the etiology, clinical f hepaticvein obstruction	
	Hepatocellular carcinoma	1	229	Explain the etiology, clinical f hepatocellularcarcinoma
	Carcinomaofthe pancreas		230	Discuss the risk factors, etiology, of pancreas
Surgery	Gallbladderand pancreas	2	231	Explain the etiology, clinical f gallstones

			232	Explain the etiology, clinical features, investigations, treatment and complications of acute and chronic cholecystitis
			233	Explain the etiology, clinical features, investigations, treatment and complications of acute and chronic pancreatitis
	Carcinoma of the gall bladder		234	Discuss the risk factors, etiology, clinical features, staging and complications of carcinoma of gall bladder
	Liver abscess	1	235	Explain the etiology, clinical features, investigations, treatment and complications of liver abscesses
	Hydatid liver cysts		236	Explain the etiology, clinical features, investigations, treatment, and complications of Hydatid liver cysts.

Pharmacology	Hepatotoxic drugs	1	237	Describe first pass hepatic metabolism
			238	Enlist common hepatotoxic drugs
			239	Explain the drug treatment of paracetamol poisoning.
	Drugs used in the treatment of hepatitis B	1	240	Classify the drugs for hepatitis B virus infection.
			241	Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis B.
		1	242	Classify the drugs for hepatitis C virus infection.

	Drugs used in the treatment of hepatitis C		243	Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis C.
Community medicine	Viral Hepatitis	1	244	Describe the epidemiological determinants of Hepatitis B & C.
			245	Describe the prevalence and incidence with reference to local context.
			246	Describe the preventive & control measures for Hepatitis B & C.
Family Medicine	Acute and chronic hepatitis	1	247	Explain the etiology and clinical features of acute hepatitis.
			248	Explain the management strategies of acute hepatitis in family practice.
			249	Explain the etiology, clinical features

			250	Explain the management strategies of chronic hepatitis in family practice.
			251	Describe the red flags in a patient with acute and chronic hepatitis for referral to specialty care.

Theme-4:(Diarrhea and Constipation)

Pathology	Intestinal obstruction	1	252	Define hernia, adhesions, volvulus, and intussusception
	Ischemic bowel disease		253	Describe the etiology, pathogenesis, morphology, and complications of small bowel ischemia
	Diarrheas	1	254	Define malabsorption syndrome
			255	Classify diarrhea
			256	Explain the etiology, morphology, clinical features and complications of Celiac disease
	Bacterial enterocolitis	2	257	Explain the etiology, pathogenesis, and clinical features of bacterial enterocolitis
			258	Explain the etiology, pathogenesis, morphology and clinical features of Salmonellosis
	Parasitic enterocolitis	1	259	Classify the parasites invading the small gut
	Entamoeba histolytica	1	260	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Amebiasis
	Giardia lamblia	1	261	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Giardiasis
	Hymenolepis nana	4	262	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of H. nana Infestation

	Diphyllobothrium latum		263	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Diphyllobothrium latum
	Schistosoma hematobium, mansoni and japonicum		264	Enlist physical characteristics of Trematodes
			265	Classify Schistosoma on the basis of organs systems Affected
			266	Describe the routes of infection, pathophysiology life cycle, clinical features and lab diagnosis of Schistosoma hematobium, mansoni and japonicum
			267	Compare the morphological characteristics of eggs of different species of Schistosoma.
	Ascaris lumbricoides	4	268	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Ascaris Lumbricoides
	Strongyloides		269	Discuss the life cycle, morphology, pathogenesis, clinical features and Strongyloides
	Ankylostoma duodenale		270	Discuss the life cycle, morphology, pathogenesis, clinical features and Ankylostoma duodenale

	Enterobius vermicularis		271	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Enterobius vermicularis
Medicine	Intestinal tuberculosis	1	272	Discuss the etiology, pathogenesis, clinical features, investigations, treatment and complications of intestinal tuberculosis
Surgery	Acute appendicitis	1	273	Discuss the etiology, risk factors, pathogenesis, clinical features, differential diagnosis, investigations, treatment and complications of acute appendicitis

	Intestinalobstru ction	1	274	Discuss the etiology, clinicalfeatures, investigations,managementandcomplications of intestinal obstruction
Pharmacolog y	Antidiarrheal Etc	1	275	Define and classify antidiarrheal agents
			276	Describethemechanismofactionofdifferent antidiarrheal agents
	Laxatives (Bulk-forming, stool softners, osmotic laxatives, laxatives,etc.	1	277	Defineand classifylaxative drugs
			278	Describethemechanismofactionofdifferent laxatives

	Lactulose		279	DescribethepharmacologicalbasisofLactulosein thetreatment ofhepatic encephalopathy
	Anti- amoebic drugs	1	280	Classifyanti-amoebic drugs
			281	DescribemechanismofactionsofMetronidazole&DialoxanideFuroate
			282	Enlist indications and adverse effect Metronidazole&DialoxanideFuroate.
			283	DescribethedruginteractionofMetronidazole withAlcohol.

	Anthelmintics	1	284	Classify Anti-Helminthic drugs
			285	Enumerate clinical use(s), adverse effects and contraindications of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide
			286	Describe mechanism of action of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide
	Anti-Salmonellosis drugs	1	287	List the drugs used in enteric fever
			288	Describe the basis for selection of antibiotics in enteric fever based on age, pregnancy and resistance

			289	Describe the clinical applications of fluoroquinolones in the treatment of gastrointestinal disorders
Fore	Irritants	3	290	Classify irritant poisons

nsic medi cine	Forensic medicine		291	Enlistcommonmetallicirritant poisons
			292	Describe physical appearance, uses, mechanism, fataldose,fatalperiodandsignsandsymptomsof CopperandMercurypoisons
			293	Describethetreatment,postmortemappearance andmedicolegalimportanceofcommonCopper andMercurypoisons
			294	Describe the signs and symptoms, treatment, postmortem appearance and medicolegal importanceofacuteandchronicArsenicpoisoning
			295	Describethesignsandsymptoms,treatment,postm ortemappearanceandmedicolegal importanceofacuteandchronicLead poisoning
	Irritants	1	296	Enlistcommonlyencounteredmechanical poisons
			297	Enumerate symptoms and signs,treatment, postmortemappearanceandforensicimportance of powder glass

	Irritants/non metallicpoiso ns	4	298	Enlistcommonlyencounteredinorganicelements poiso ning
			299	Enumeratephysicalappearanceandusesofphosphorus
			300	Describemechanismofaction,fataldose&period of phosphorus
			301	Describe clinical features and treatment phosphorus poisoning
			302	Describepostmortemappearanceandforensic importance of phosphorus poisoning
			303	Describe physical appearance, uses, mechanism of action, clinical features, treatment, postmortemappearanceandforensicimportance ofaluminum phosphide

		304	Describe physical appearance, uses, mechanism of action, clinical features, treatment, postmortem appearance and forensic importance of chlorine
		305	Describe physical appearance, uses, mechanism of action, clinical features, treatment, postmortem appearance and forensic importance of iodine

	Irritants/vegetable poisons	2	306	Enlist commonly encountered inorganic elements poisoning.
			307	Describe characteristics, active principles, and clinical features of vegetable poisons.
			308	Enumerate uses, fatal dose and fatal periods of vegetable poisons.
			309	Describe treatment, postmortem appearance, and forensic importance of vegetable poisons.
	Irritants/animal poisons	2	310	Differentiate between poisonous and non-poisonous snakes
			311	Classify snakes on the basis of their venom.
			312	Describe the characteristics of snake venoms
			313	Classify different snakes venoms
			314	Describe steps of management of snake bite
			315	Describe postmortem appearance and medicolegal aspects of venomous snake bite
Community medicine	Overview of common intestinal worms' infestation and their control	1	317	Describe the common intestinal worm infestation in our local context
			318	Describe the epidemiological determinants of common worm infestation with reference to local Context

	Control of dysentery	1	319	Describe the preventive & control measures for common worm infestation
			320	Describe the epidemiology of Dysentery.
			321	Describe the prevention & control measures of Dysentery.
	Food hygiene	1	322	Describe the term food Hygiene
			323	Describe the importance of food hygiene
			324	Describe the process of Food hygiene
	Enteric infections	1	325	Classify enteric infections
			326	Describe the etiology, clinical features, investigations and management of Salmonellosis
			327	Describe the red flags in a patient with Salmonella infections for referral to specialty care.
		1	328	Explain the etiology, and management of acute gastroenteritis.
			329	Discuss the primary and secondary prevention of acute gastroenteritis in a primary health care setting.
			330	Describe the red-flags in a patient with acute gastroenteritis for referral to specialty care.

Pediatrics	Lactase deficiency	1	331	Describe the clinical features, investigations, complications, and management of Lactase deficiency.
	Infectious diarrhea		332	Describe the etiology, clinical investigations, complications, and management of infectious diarrhea in children.
	Celiac disease	1	333	Describe the etiology, clinical of Celiac disease.
Theme-5 (Bleeding per Rectum)				
Pathology	Inflammatory bowel disease	2	334	Classify IBD

	sease (IBD)	335	Discuss the risk factors and etiology of IBDs
		336	Explain the pathogenesis and clinical presentation of IBD
		337	Differentiate between Ulcerative colitis and Crohn's disease
		338	Discuss the investigations and management of IBDs
		339	Explain the intestinal and extra-intestinal manifestations/complications of IBDs

			340	Explain the role of surveillance colonoscopy in patients with Ulcerative colitis
	Diverticular disease	1	341	Explain the etiology, pathogenesis, morphology and clinical features of Colonic diverticulosis
	Colonic polyps	1	342	Classify colonic polyps.
			343	Describe the pathogenesis, morphology, clinical presentation, complications and diagnosis of different types of colonic polyps
	Hemorrhoids		344	Define hemorrhoids
			345	Explain the morphology, pathogenesis and clinical features of Hemorrhoids

	Colorectal carcinoma	1	346	Describe the adenoma-carcinoma sequence
			347	Describe the pathogenesis, morphology, clinical presentation, complications and staging of colorectal Carcinoma
Surgery	Ulcerative colitis	1	348	Explain the etiology, pathogenesis, clinical features, complications and surgical management of Ulcerative colitis
	Crohn's disease	1	349	Explain the etiology, pathogenesis, clinical features, complications and surgical management of Crohn's disease

	Diverticular disease	1	350	Explain the etiology, pathogenesis, features, complications and management of Diverticulosis and Diverticulitis
	Anal diseases: • fistula • fissures • hemorrhoids	1	351	Define perianal fistula and anal fissure
			352	Explain the risk factors and management of anal fistula and anal fissures
			353	Explain the risk factors and management of hemorrhoids
	Colorectal cancers	1	354	Classify colorectal cancers

			356	Describe the staging of colorectal cancers
			357	Explain the pathogenesis, risk factors and clinical features of colorectal cancers
			358	Explain the complications, management
	Ischemic Colitis	1	359	Explain the etiology, pathogenesis, Ischemic colitis
Medicine	Irritable bowel syndrome	1	360	Explain the risk factors, clinical features, and management of Irritable bowel syndrome
	Ulcerative colitis	1	361	Explain the etiology, pathogenesis, of Crohn's disease
	Crohn's disease	1	362	Explain the etiology, pathogenesis, features, complications and management of Crohn's disease
	Ano-rectal infections	1	363	Classify ano-rectal infections
			364	Explain the risk factors, clinical features and management of ano-rectal infections including sexually transmitted infections
Pharmacology	Drugs used in the treatment of Irritable Bowel Syndrome (IBS)	1	365	Enlist the drugs used in IBS
			366	Describe the mechanism of antagonists (Alosetron) in IBS
	Drugs used in the	2	367	Classify the drugs used in IBD

	treatment of IBD		360	Describe the mechanism of actions of aminosalicylates, glucocorticoids, purine analogues, methotrexate, monoclonal antibodies and anti-integrin in IBDs
			369	Explain the adverse effects of drugs used in the treatment of IBD
Forensic medicine	Abdominal injuries	1	370	Describe injuries to abdominal wall
			371	Describe injuries to esophagus, intestine and Stomach
			372	Describe injuries to liver and spleen

Practical work				
Pathology	Ascaris Lumbricoides	6	373	Identify the important morphological and staining characteristics of the ova
	Enterobius vermicularis		374	Identify the important morphological and staining characteristics of the ova
	Ankylostoma duodenale		375	Identify the important morphological and staining characteristics of the ova
	Liver Function Tests		376	To interpret normal and abnormal liver function tests in different clinical scenarios
Pharmacology	Peptic ulcer disease	5	377	construct prescription for (Quadruple therapy)
	Anti-emetics		378	construct prescriptions for motion sickness, morning sickness, post-operative patient
			379	construct prescriptions for cancer chemotherapy-induced vomiting

		380	construct a prescription for a patient suffering from amoebic dysentery
	Enteric fever	381	construct a prescription for a patient suffering from Enteric fever
		382	Write a prescription for a patient suffering from Ascariasis

Forensic medicine	Poisons	5	383	Identify corrosives
	Corosives		384	Case presentation of vitriolage
	Irritants		385	identify common irritant poisons
	Metallic poisons		386	identify common Metallic and poisons
	Vegetable and animal poisons		387	identify common Vegetable and animal poisons
Community medicine	Protein calorie malnutrition	1.5	388	Identify the model
			389	Differentiate between the clinical features of 2 models
			390	Justify its public health importance
			391	Signify the concept of food fortification and food adulteration
	My food plate/ The pyramid	1.5	392	Identify the model
			393	Describe different components of the model

	Health education	1.5	394	Identify a health education message on the problem/scenario provided
			395	Formulate a health education message on the problem/scenario provided
	Housefly/arthropods	1.5	396	Identify the model
			397	Explain the disease caused by this vector and its control
	Aedes Egypti	1.5	398	Identify the model
			399	Explain the disease caused by this vector and its control
	Autoclave	1.5	400	Identify the model
			401	Explain the types of items for which autoclaves are used
			402	Explain the steps of instruments sterilization

MIT: Mode of information transfer. E.g. lecture, SGD, DSL, Practical, skill lab etc etc.

MOHI-UD-DIN ISLAMIC MEDICAL COLLEGE MIRPUR

DEPARTMENT OF MEDICAL EDUCATION



RENAL-II MODULE

4TH YEAR MBBS

BLOCK: L

DURATION: 3 WEEKS

MODULE CODE: MB4-L-REN-II-21



Learning Objectives

By the end of Renal Module, 4th year MBBS students will be able to:

- 1) Describe applied anatomy of Urinary System with video demonstration
- 2) Discuss physiology of the renal system
- 3) Describe the different Acid-base Disorders and the Mechanism for maintaining Acid-base Balance
- 4) Classify the diseases involving glomeruli, tubules, interstitium, renal blood vessels, Chronic nephron loss, Cystic, urine out flow obstruction, congenital-developmental and neoplastic diseases of renal system
- 5) Describe the etiology, pathogenesis, clinical manifestations, diagnosis, and prognosis of the renal system diseases.
- 6) Perform various practical's used in laboratory diagnosis of renal diseases.
- 7) Describe the Pharmacology of drugs used in the treatment of Renal System Diseases.
- 8) Describe ethics of Organ Transplantation.
- 9) Describe prevalence of renal diseases.
- 10) Describe the clinical features of renal diseases.
- 11) Diagnose & manage Acute & Chronic Kidney Disease, Nephrotic, Nephritic Syndromes, Urinary Tract Infections.
- 12) Management of Urinary Tract Infections, Chronic Kidney Diseases & Renal Transplant patients during Pregnancy.
- 13) Enumerate/Describe various renal diseases primarily affecting pediatrics age group.
- 14) Describe pathogenesis and management of renal stones.
- 15) Describe pathogenesis and management of bladder outlet obstruction (BOO).

Specific Learning Objectives

Table 3: Learning Objectives Theme Wise

Theme I: Facial Swelling				
Subject	Topic	Hours	S#	Learning objectives
Anatomy	Describe applied anatomy of renal system	1	1	Discuss the gross anatomical features (internal and external) of kidney.
			2	Describe the structures entering and leaving the hilum of kidney along with their relations.
			3	Discuss the lympho-vascular supply of kidney.
Physiology	GFR	1	4	Describe glomerular filtration rate (GFR), determinants of GFR and estimation of GFR.
	Absorption of water and Solutes		5	Describe the absorption of water and solutes along different parts of nephron
Biochemistry	Acid-base Balance	1	6	Describe the mechanisms for maintaining the Acid-base Balance.
	Acid-base Disorders		7	Describe different Acid-base Disorders.

Pathology	Basic terms	1	8	Define the terms: Azotemia, uremia, Nephrotic syndrome, Nephritic syndrome, asymptomatic hematuria, rapidly progressive glomerulonephritis
			9	Acute kidney injury, chronic kidney disease, end-stage renal disease (ESRD),
			10	Renal tubular defects, Nephrosclerosis, UTI,
			11	urolithiasis, Hydronephrosis, Oncocytoma and carcinoma
			12	Describe the pathogenesis of Nephrotic and Nephritic syndrome
	Glomerular Disease	2	13	Describe the pathological responses, pathogenesis and mediators of glomerular injury
			14	Classify Glomerular diseases.
			15	Differentiate between major Primary Glomerular diseases in terms of clinicopathological features and different microscopic findings
			16	Discuss the etiologies, clinicopathological features and morphology of the diseases presenting as Nephritic syndrome and Nephrotic syndrome
			17	Explain the pathogenesis and morphology of minimal change disease

			18	Describe the etiology, pathogenesis, morphology and clinical presentation of focal segmental glomerulosclerosis
			19	Describe the etiology, pathogenesis, morphology and clinical presentation of membranoproliferative glomerulonephritis
			20	Describe the etiology, pathogenesis, morphology and clinical presentation of IgA nephropathy
			21	Describe the pathogenesis, morphology of diabetic and other types of secondary nephropathies
	Acute Tubular Injury (ATI)	1	22	Define Acute Tubular Injury (ATI).
			23	Describe the etiology, clinico-pathological features and morphology of ischemic and toxic ATI.
			24	Compare the pattern of tubular damage in ischemic and toxic injury
	Vascular events		25	Discuss the etiology, pathogenesis, and morphology of Nephrosclerosis, malignant hypertension and Renal Artery stenosis.
Medicine	Interpretation of urinalysis	1	26	explain various abnormalities and their interpretation and importance regarding specific diagnoses
			27	Highlight the importance of urine abnormalities in other systemic diseases apart from kidney and urogenital tract abnormalities
	Nephrotic syndrome	1	28	Define Nephrotic Syndrome.

			29	Interpret the criteria for diagnosing Nephrotic Syndrome
			30	Recognize symptoms and signs of Nephrotic Syndrome
			31	Identify the complication of nephrotic syndrome
			32	Interpret the important investigations
			33	Discuss the management plan for Nephrotic syndrome
	Nephritic syndrome	1	34	Interpret the criteria for diagnosing Nephritic Syndrome
			35	Identify symptoms and signs of Nephritic Syndrome
			36	Identify important causes
			37	Enumerate important investigations
			38	Discuss the treatment plan
	Electrolytes abnormalities	1	39	Define Hyponatremia
			40	Discuss Types of Hyponatremias
			41	Describe clinical features
			42	Enlist/ interpret the diagnostic lab investigations
			43	Calculate the sodium deficit and free water deficit
			44	Calculate rate of sodium replacement
			45	Discuss complications
			46	Define Hypernatremia
			47	Describe clinical features

			48	Enlist diagnostic lab investigations
			49	Calculate the sodium deficit and free water deficit
			50	Calculate rate of fluid replacement
			51	Describe management plan.
			52	Define Hypokalaemia
			53	Describe clinical features
			54	Interpret diagnostic lab investigations
			55	Discuss complications.
			56	Describe/JUSTIFY management plan
			57	Define Hyperkalemia
			58	Describe clinical features
			59	Enlist diagnostic lab investigations
			60	Discuss complications Describe management plan
Pediatrics	Acute post streptococcal glomerulonephritis (ApGN)	1	61	Define AGN and APGN
			62	Describe the pathogenesis of Nephritic syndrome
			63	Know clinical features and differential diagnosis of ApGN
			64	Describe investigations required to reach a diagnosis of ApGN
			65	Effectively describe the treatment requires for patients with ApGN
		1	66	Define nephrotic syndrome.

	Nephrotic syndrome (NS)		67	Describe pathophysiology of nephrotic syndrome
			68	Classify NS in to its subtypes
			69	Describe clinical features of NS
			70	Enumerate and describe tests required to reach diagnosis of NS
			71	Outline treatment steps in the management of NS
			72	Know the complications of NS and describe its prognosis.
Theme II: Scanty Urine				
Pathology	Renal function test	1	73	Describe the normal ranges of Blood urea, creatinine, and electrolytes
			74	Explain creatinine clearance and other radiological and biochemical renal function tests and their clinical significance
	Acute kidney injury	1	75	Explain the etiology, pathogenesis, morphology and clinical presentation and complications of acute kidney injury
	Chronic Renal Failure	1	76	Explain the etiology, pathogenesis, morphology and clinical presentation and complications of chronic renal failure.
	Interstitial and Glomerulonephritis	1	77	Explain the etiology and pathogenesis of interstitial nephritis
			78	Explain the etiology, pathogenesis, and morphology of glomerulonephritis.

Medicine	Acute Kidney Injury (AKI)	1	79	Define AKI.
			80	Enlist/Interpret the criteria for diagnosing AKI
			81	Discuss/ Differentiate prerenal & post renal causes
			82	Identify symptoms and signs of AKI
			83	Identify /Interpret the important complications
			84	Enumerate/DISCUSS important investigations
			85	Construct a management plan for a patient with AKI
	Chronic Kidney Disease (CKD)	1	86	Define CKD
			87	Enlist criteria for diagnosing CKD
			88	Identify important causes
			89	Identify symptoms and signs of CKD
			90	Identify the important complications
			91	Enumerate important investigations Discuss the treatment plan
	Renal Replacement Therapy (RRT)	1	92	Define RRT
			93	Enlist the different types of RRT
			94	Identify/Enumerate important indications of dialysis
			95	Identify/Enlist the important complications of dialysis
			96	Discuss the Renal transplant
			97	Enlist and discuss the types of transplant rejection

Forensic medicine	Ethics of Organ Transplantation	1	98	Describe Ethics of Organ Transplantation
			99	Describe current legislation of HOTA (Human Organ Transplant Act)
			100	Identify loop holes in existing system of human organ transplant.
Surgery/Urology	Renal transplant surgery	1	101	Enlist diagnostic indicators of renal transplant
			102	Describe pre-requisite for successful renal transplant
			103	Discuss post renal transplant care of patient
			104	Describe common complications of renal transplant surgery
			105	Enlist immunosuppressive drugs used in Renal transplant
Family medicine	Acute renal presentations- primary care management and Red flags	1	106	Explain the etiology, clinical features and presentation of acute renal failure
			107	Describe the steps of management of a patient with anuria and oliguria
			108	Identify patients that need urgent and proper referral for specialist care in primary health with anuria and acute and chronic renal disease
Community medicine	Environmental health: Introduction	1	109	Explain the importance of environmental health
			110	Define and classify environmental degradation
	Water pollution	1	111	Define water pollution and describe its importance for health

			112	Describe the different types of water pollution as simple biodegradable, complex biodegradable and complex non-degradable
	Water quality management	4	113	Explain the importance and daily requirements of water.
			114	Describe the qualities and criteria of different sources of water including surface water, ground well, shallow well, deep well.
			115	Classify different methods of purification of water
			116	Describe natural methods of purification of water
			117	Describe physical methods.
			118	Describe chemical methods.
			119	Describe filtration methods both small scale and large scale
			120	Describe purification of water in special circumstances
			121	Enumerate different water quality parameters
			122	Describe physical parameters
			123	Describe different chemical parameters and its interpretation.
			124	Explain the permissible limits of chemical parameters.

Theme III: Loin pain and Dysuria

Pathology	Pyelonephritis	1	125	Discuss the etiology, clinico-pathological presentation, morphology, and complications of Acute Pyelonephritis,
			126	Discuss the etiology, clinico-pathological presentation, morphology and complications of, chronic pyelonephritis
			127	Discuss the etiology, clinico-pathological presentation, morphology, and complications of drug induced nephritis
	Cystic Diseases of the Kidney	1	128	Classify the cystic diseases of Kidney.
			129	Describe the inheritance, Pathological features, Complications, and prognosis of polycystic diseases of Kidneys.
			130	Differentiate between the inheritance, pathological features, typical outcomes and clinical features of Adult and Childhood Polycystic Kidney Diseases
			131	Differentiate between the inheritance, pathological features, typical outcomes, and clinical features of Childhood Polycystic Kidney Diseases.
	Urolithiasis	1	132	Enlist the types of Renal stones.
			133	Discuss the etiology and pathogenesis of Renal stones
			134	Co-relate the occurrence of renal stones with different metabolic diseases

			135	Differentiate between the different renal stones based on frequency, predisposing factors, urine PH and morphology.
	Neoplasms of the Kidneys Renal cell carcinoma Wilm's Tumor Diagnosis and management of renal tumors	1	136	Classify the benign and malignant tumors of the Kidney.
			137	Discuss the etiology, morphology, and prognosis of Renal cell carcinoma
			138	Discuss the genetics, clinico-pathological features, morphology, and prognosis of Wilm's tumor
			139	Describe the various investigations to diagnose renal tumors (albumin/creatinine ratio, urine for micro albumin)
			140	Discuss management of renal tumors
	Congenital anomalies of bladder Acute Cystitis Chronic Cystitis	1	141	Describe the congenital anomalies of bladder and urethra
			142	Discuss the etiology, morphology clinico-pathological features and complications of Acute
			143	Discuss the etiology, morphology clinico-pathological features and complications of Chronic Cystitis.

Pharmacology	Urinary Tract Infection (UTI)	1	144	Describe the clinical pharmacology of drugs used in the management of acute and chronic UTI (Co-trimoxazole, Nitrofurantoin, Cephalosporins, Amoxicillin-clavulanic acid, etc).
Community Medicine	HIV/AIDS, Syphilis	1	145	Describe HIV/AIDS considering Risk groups, pathology, Diagnosis, treatment, and Prevention
			146	Describe Syphilis in terms of causative agent, incubation period, transmission, manifestation, diagnosis treatment and prevention.
	Chlamydia, Genital warts, Gonorrhea		147	Describe Chlamydia in terms of etiology, transmission, symptoms, treatment, and prevention.
			148	Describe Genital warts in terms of causes, transmission, symptoms, treatment, and prevention.
			149	Describe Gonorrhea in terms of causes, transmission, symptoms, treatment, and prevention.
	Human Papiloma virus,		150	Describe Human Papiloma Virus (HPV) in terms of causes, types, transmission, symptoms, screening, and prevention.
Medicine	Autosomal Dominant Polycystic Kidney Disease (ADPKD)	1	151	Define ADPKD.
			152	Enlist/Interpret the criteria for diagnosing ADPKD.
			153	Identify/interpret the genetic causes.
			154	Identify/ symptoms and signs of ADPKD.
			155	Identify/Interpret the important complications.

	Urinary Tract Infections (UTIs)	1	156	Enumerate& interpret important investigations.
			157	Construct a management plan.
			158	Define UTIs.
			159	Enlist the criteria for diagnosing UTIs.
			160	Identify/Differentiate the complicated and uncomplicated UTIs.
			161	Identify symptoms and signs of UTIs.
			162	Identify the important complications.
			163	Enumerate/discuss/ interpret/ important investigations.
			164	Construct a management plan for a patient with UTI.
Radiology	Urological Investigation	1	165	Uses of plain X-ray KUB (Kidney, ureter, bladder).
			166	Discuss role of CT in Urology.
			167	Discuss role of nuclear scans.
			168	Discuss DTPA Scan, DMSA Scan, MAG 3 Scan.
			169	Investigate renal system during pregnancy.
Surgery/Urology	Kidney Stones	1	170	Enlist factors predisposing to specific stone types
			171	Discuss evaluation of stone formers
			172	Discuss clinical features and Diagnosis of renal stone
			173	Describe renal stone treatment options
	Renal trauma	1	174	Describe Initial resuscitation of renal trauma patient
			175	Classify mechanism and grading of renal trauma

	Pelvic Ureteric junction obstruction in adult (PUJO)		176	Discuss clinical and radiological assessment of renal trauma.
			177	Discuss management plan of renal trauma.
			178	Define PUJ obstruction.
			179	Enlist etiology (congenital and acquired causes).
			180	Describe clinical presentation of PUJO.
			181	Interpret Investigations (renal ultrasound, IVU (Intravenous urography), MAG-3 renography, retrograde pyelography).
			182	JUSTIFY Management PLAN options (Endopyelotomy, Pyeloplasty).
	Anomalies of renal fusion and ascent	1	183	Describe various anomalies of renal tracts like Horseshoe kidney, Ectopic kidney, Renal agenesis, Malrotated kidney, Urinary tract duplication.
	Renal Cell Carcinoma (RCC)		184	Describe clinical presentation and investigation of RCC.
			185	Enlist Treatment of localized RCC.
			186	Construct Management of metastatic RCC.
Obs & Gynae	Asymptomatic bacteriuria	1	187	Define asymptomatic bacteriuria.
			188	Describe the effects of asymptomatic bacteriuria on pregnancy.
			189	Management plan of asymptomatic bacteriuria
	Acute symptomatic urinary tract infections		190	Define Acute Cystitis
			191	Describe effects of asymptomatic bacteriuria

			192	Plan management of Acute Cystitis in pregnancy
			193	Describe the effects of acute Pyelonephritis on pregnancy.
			194	Plan Management of acute Pyelonephritis.
Pediatrics	Urinary tract infection (UTI)	1	195	Describe the types of UTI.
			196	Discuss prevention and management of UTI in children.
Theme IV: Urinary retention				
Anatomy	Describe applied anatomy of ureters, urinary bladder, prostate and urethra	1	197	Describe gross structure of kidney, ureter, bladder, and urethra.
			198	Describe the microscopic structure of prostate
			199	Discuss the microscopic structure of urethra
Pathology	Obstructive Uropathy	1	200	Discuss the obstruction in urogenital tract at different levels.
			201	Discuss the effects of obstruction on function and morphology of kidney.
			202	Describe clinico-pathological features and morphology of Hydronephrosis
	Tumors of urinary bladder	1	203	Classify tumors of urinary bladder.
	BPH		204	Discuss the etiology, pathogenesis, morphology, staging and prognosis of urothelial (Transitional Cell) Tumors
			205	Describe pathophysiology of Benign prostatic hypertrophy and risk factors

	Carcinoma prostate		206	Describe pathogenesis, risk factors and staging.	
Pharmacology	Drugs for benign prostatic hyperplasia	1	207	Classify the drugs used in the management of BPH	
			208	Enlist the alpha-adrenergic blocking drugs with special reference to those having specific affinity for prostate muscle.	
			209	Describe the role of alpha blockers, 5-alpha reductase inhibitors (Finasteride) and combination therapy in BPH.	
			210	Enlist the adverse effects of the drugs used to treat BPH.	
	Carcinoma of prostate		211	Enlist the hormonal agents used in the management of Prostatic carcinoma.	
			212	Describe the mechanism of action of Gonadotropin-releasing hormone (Goserelin) and anti-androgens (Cyproterone acetate and Flutamide) in the management of Prostatic carcinoma.	
			213	Enlist the anticancer chemotherapeutic agents used in the management of Prostatic carcinoma.	
Community medicine	Air Pollution & air quality management	2	214	Define air pollution.	
			215	Enumerate criteria pollutants.	
			216	Describe the sources and limits of air pollutants.	
			217	Describe the adverse effects of air pollutants on health.	
			218	Explain the measures for control of air pollution	

			219	Describe the global adverse effects of air pollution- ozone depletion, greenhouse effect, smog, acid rain.
	Noise pollution, radiation pollution and its control	1	220	Define noise pollution.
			221	Explain adverse effects of noise pollution on health.
			222	Describe factors effecting hearing loss.
			223	Enumerate acceptable noise standards.
			224	Discuss the measures for prevention of adverse effects of noise.
			225	Classify different types of radiations to which humans are exposed.
			226	Describe the adverse effects and preventive measure of different type of nonionizing radiations.
			227	Describe the adverse effects and preventive measure of ionizing radiations.
	Waste management	2	228	Explain the importance of waste management in health
			229	Describe management of waste [organic of human and animal origin] as per water carriage system
			230	Describe the management of waste [organic of human and animal origin] as per conservancy system
			231	Describe management of solid waste [refuse]
		1	232	Define hospital waste management

	Hospital waste management		233	Explain the importance of hospital waste management in health
			234	Classify hospital waste
			235	Know the impacts of improper hospital waste management on health
			236	Describe the methods to minimize hospital waste
			237	Describe the methods of treatment of hospital waste
			238	Explain the waste management trends in developing countries
	Disasters and health	2	239	Define disaster management
			240	Describe classification of disasters
			241	Describe the mortality & morbidity due to disaster itself & mismanagement of disaster relief activities
			242	Describe pre-disaster management
			243	Describe post disaster management in immediate, intermediate, and long-term stages.
			244	Discuss management and preventive measures from previous disasters.
Surgery/Urology	carcinoma of urinary bladder	1	245	Describe the history of disasters in Pakistan.
			246	Discuss clinical Presentation of bladder cancer.
			247	Describe diagnosis and clinical staging of bladder cancer.

			248	Construct management Plan of bladder cancer.
	Enlarged Prostate	1	249	Define IPSS (International prostate symptoms scoring) for enlarged prostate.
			250	Describe watchful waiting for enlarged prostate.
			251	Enlist medical management of BPH.
			252	Minimal invasive management of BPH.
			253	Invasive surgical surgeries
			254	TURP (transurethral resection of prostate)
			255	Open prostatectomy
	Carcinoma prostate		256	Describe clinical presentation and management
	Urinary Incontinence	1	257	Define urinary incontinence
			258	Discuss urinary incontinence
			259	Classify urinary incontinence
			260	Discuss nocturnal enuresis
			261	Enlist causes and pathophysiology
			262	Describe evaluation of incontinence
			263	Enumerate Investigation of incontinence
			264	Describe conservative treatment options surgical options
	Urethral strictures	1	265	Describe etiology, Presentation, investigation, and management of urethral stricture
	Posterior urethral valve		266	Discuss clinical presentation and management of Posterior urethral valves (PUV).

Practical work				
Pathology	Urine collection methods, physical examination of urine specimen	1.5	267	Demonstrate the procedure of urine collection, physical examination volume, color, appearance, pH of specimen.
	Microscopic examination of centrifuge specimen		268	Perform the physical examination of urine and prepare report of an abnormal urine with pyuria and hematuria Interpret the results.
	Chemical examination of non-centrifuged urine specimen	1.5	269	Demonstrate substances for chemical examination and the different procedures of detection of protein in urine.
			270	Demonstrate the Principle of protein detection by heat method in urine
			271	Perform the heat and acetic acid test and the test for Bence Jones protein. Interpret the results
			272	Demonstrate the tests for detection of reducing substances in urine and the principle of Benedict's test
			273	Perform the Benedict's test. Interpret the results

			274	Demonstrate the substances seen in urine under microscope i.e. cells (Pus cells, RBCs, Epithelial cells and other different cells), Crystals, castes etc
			275	Prepare the sediment for urine examination.
			276	Detect various substances in a slide prepared from sediment under the microscope Interpret the results.
	Urine staining, and culture	1.5	277	Demonstrate the Staining methods and their principles for urine specimens of acute and chronic UTI
			278	Identify the uropathogens shown in the slide
			279	Demonstrate sterilized methods for collections of specimens for culture and sensitivity.
			280	Perform a practical for culture and sensitivity by disc diffusion method for any uropathogen.
Pharmacology	Prescriptions for acute and chronic UTI	1.5	281	Formulate prescriptions for acute and chronic UTI
Community medicine	Incinerator / waste disposal models	1.5	282	Identify the model
			283	Explain the steps of waste disposal
	Water sources	1.5	284	Identify the model related sources of water

	Sand filters		285	Identify the model
			286	Identify its different layers and mechanism of purification
			287	Calculate the dose of bleaching powder required for disinfection of water in a domestic tank
			288	Assess the quality of water sample on the basis of physical parameters (color, turbidity, suspended particles, temperature and Ph.)
			289	Interpret the bacteriological quality of water on the basis of presumptive coliform test

MIT: Mode of information transfer. E.g. lecture, SGD, DSL, Practical, skill lab etc etc.

MOHI-UD-DIN ISLAMIC MEDICAL COLLEGE MIRPUR

DEPARTMENT OF MEDICAL EDUCATION



Endocrine & Reproductive-II Module

4TH YEAR MBBS

BLOCK: L

DURATION: 8 WEEKS

MODULE CODE: MB4-L-END-REP-II-22



2. Learning Objectives

a. General Learning Outcomes

Knowledge

By the end of Endocrine & Reproduction Module, 4th year MBBS students will be able to:

- 1) Describe the pathology, clinical features, investigations, and treatment of Hyper and hypopituitarism
- 2) Describe the pathology, clinical features, investigations, and treatment of Hyper and hypothyroidism, and hyper and hypoparathyroidism
- 3) Describe the classification, pathogenesis, clinical features, investigations, and treatment of Diabetes mellitus
- 4) Explain the pathology, clinical features, investigations, and treatment of Hyper and hypoadrenalism
- 5) Explain the causes of male and female infertility and its management
- 6) Explain the classification, pathology, and management of testicular tumors
- 7) Explain benign and malignant breast disease
- 8) Discuss the etiology, risk factors, clinical features, investigations, and treatment of carcinoma of breast
- 9) Describe the pharmacokinetics and pharmacodynamics of pituitary, gonadal, pancreatic, thyroid, and adrenocortical hormones, their synthetic analogues and antagonists, and their role in the management of relevant disease conditions
- 10) Formulate prescriptions for patients with Graves' disease and Diabetes mellitus
- 11) Discuss the laws related to sexual offenses, and management of a rape victim in forensic aspects
- 12) Explain the pathophysiology and surgical management of benign prostatic hyperplasia and carcinoma of the prostate

Skills

1. Interpret the different tests related to Endocrine & Reproductive System.
2. Write prescriptions for common Endocrine & Reproductive disorders.
3. Describe medico-legal aspects of Reproductive System e.g Rape etc
4. Describe medico-legal aspects of vegetable acid, corrosive and irritant poisoning.
5. Describe the epidemiology and prevention of infections of Reproductive System.
6. Interpret radiological investigations in relation to Endocrine and Reproductive System.

Attitude

The students must show positive attitude to:

1. Develop good manners and should be honest to their studies
 2. Work hard and be regular and punctual in the class
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3. Participate in class and practical work efficiently
4. Follow the basic laboratory protocols.
5. Develop communication skills with sense of responsibility
6. Demonstrate the effective attitude towards the teachers and colleagues
7. Maintain ethical values in dealing with patients.
8. Demonstrate a professional attitude, team building spirit and good communication skills

b. Specific Learning Outcomes

Theme-1: Tall/short stature				
Subject	Topic	Hours	S.No	Learning Objectives
				At the end of this module, the students of year 4 MBB Swill be able to:
Pathology	Pituitary gland- Physiological anatomy	1	1	Explain the gross and microscopic structure of pituitary gland
			2	Explain the functions of hormones of the anterior and posterior pituitary gland and their regulation by the Hypothalamus
	Hyperpituitarism/ Pituitary adenomas: Prolactinomas Somatotrophic tumors Corticotrophic tumors Others	1	3	Explain the causes of hyperpituitarism
			4	Discuss the gross and microscopic structure of pituitary adenomas, and the hormones secreted from these
			5	Explain the clinical manifestations of different types of pituitary adenomas
	Hypopituitarism	1	6	Describe the etiology and clinical manifestations of hypopituitarism
Medicine	Acromegaly/Gigantism	2	7	Explain the etiology, clinical features, investigations, treatment, and complications of Acromegaly/gigantism
	Hyperprolactinemia		8	Discuss the etiology, clinical features, investigations, and treatment of hyperprolactinemia
	Hypopituitarism/Sheehan's Syndrome		9	Explain the etiology, clinical features, investigations and treatment of Hypopituitarism and Sheehan's syndrome
Pharmacology	Growth hormone	1	10	Describe the sources of Growth hormone (old and new sources)
			11	Describe the mechanism of action, clinical uses and adverse effects of Growth hormone
	Growth hormone antagonists (Octreotide and others)		12	Enlist Growth hormone antagonists
			13	Describe the clinical role of Octreotide in acromegaly

			14	Describe the route of administration, dosage, and adverse effects of octreotide in acromegaly and gigantism
	Bromocriptine	1	15	Describe the mechanism of action, clinical uses, and adverse effects of Bromocriptine
Pediatrics	Short stature	1	16	Describe the method to measure and plot the height; and calculate height velocity. and midparental, target height to allow early diagnosis of growth disorders in pediatric patients
			17	Explain the diagnostic criteria that allow to differentiate causes of growth deficiency
			18	Discuss the tools for better communication with patients and families and coordination of multidisciplinary care
			19	Discuss treatment of growth hormone deficiency or other diseases responsible for short stature and their appropriate management
Neurosurgery	Surgical management of pituitary adenoma	1	20	Explain the surgical treatment and complications of pituitary macro/microadenomas
	Occupational Health:	1	21	Define occupational health
Community medicine	Introduction		22	Discuss importance of occupational health
			23	Describe ergonomics
			24	Describe principles and responsibilities of occupational health officer [OHO]
	Physical hazards	1	25	Enumerate physical hazards (heat, cold, noise, light, vibrations, pressure effect, Radiations)
			26	Discuss its ill effects on health
			27	Discuss its preventive measures
	Chemical hazards	1	28	Enumerate chemical hazards (inorganic dust diseases, organic dust diseases, metals & chemicals)
			29	Discuss its ill effects on health
			30	Discuss preventive measures
	Mechanical, Biological & Psychosomatic hazards	1	31	Describe mechanical hazards
			32	Discuss control measures of mechanical hazards
			33	Discuss control measures of mechanical hazards
			34	Discuss control measures of biological hazards
			35	Describe psychosomatic stressors
			36	Discuss control measures of psychosomatic stressors
	Animal hazards	1	37	Describe types, prevalence, and statistics of snake bite
			38	Discuss prevention and management of snake bite
			39	Discuss causes of poor management with respect to awareness and vaccination

	Preventive measures, health insurance, social security schemes	1	40	Describe various preventive measures of occupational hazards (Medical, engineering and legal measure)
			41	Discuss role and benefit of health insurance
			42	Discuss social security and its benefits
	Demography: Introduction	3	43	Define demography and various related terms
			44	Explain and interpret population pyramid
			45	Explain demographic transition
			46	Describe the causes of high and low fertility and mortality
	Growth rate		47	Define population growth rate, CDR, CBR
			48	Describe growth rate
			49	Describe population explosion & its implications
PRIME/ MEDICAL EDUCATION			50	Explain advantages of population control
	Demographic indicators		51	Describe the demographic indicators of Pakistan
	Dealing with patients	1	52	Serve the patient as an individual, considering lifestyle, beliefs, and support system
	Community Need analysis		53	Identify the healthcare needs of community
	Gender based violence	1		Classify gender-based violence
				Explain the reasons for gender-based violence
				Discuss the outcomes of gender-based violence
				Explain the preventive strategies for gender-based violence
				Discuss the legal implications of gender-based violence in Pakistanic context.

Theme- 2: Neckswelling and muscle cramps

Physiology	Physiological anatomy of the Thyroid gland	1	54	Explain the gross and microscopic structure of Thyroid gland
			55	Explain the synthesis and functions of hormones of the thyroid gland and their regulation by the anterior pituitary
Pathology	Hyperthyroidism Grave's disease	1	56	Discuss the etiology, pathogenesis and morphology of Hyperthyroidism and Grave's disease
	Hypothyroidism	1	57	Discuss the etiology, pathogenesis, morphology, and clinical features of Hypothyroidism
	Thyroiditis	1	58	Discuss the classification, morphology, and presentation of Thyroiditis
	Multinodular goiter		59	Explain the etiology, clinical features, and complications of multinodular goiter
	Thyroid malignancies	1	60	Classify thyroid malignant disorders
			61	Explain morphology, clinical features, and prognosis of thyroid malignancies
Medicine	Hyperthyroidism	1	62	Discuss the etiology, clinical features, investigations and treatment and prognosis of Hyperthyroidism and Grave's disease
			63	Explain the pathogenesis, clinical features, and management of Grave's Ophthalmopathy
	Hypothyroidism	2	64	Discuss the types, etiology, clinical features, investigations, and treatment of Hypoparathyroidism
	Thyroiditis		65	Describe the classification, etiology, investigations, and treatment of Thyroiditis
	Multinodular goiter	1	66	Discuss the etiology, clinical features, investigations, and management approach to a patient with multinodular goiter
	Thyroid malignancies		67	Classify thyroid malignant disorders
			68	Discuss the pathogenesis, clinical features, investigations, and management of Thyroid malignancies

Pharmacology	Hyperparathyroidism	1	69	Discuss the types, etiology, clinical features, investigations, and treatment of Hyperparathyroidism
	Hypoparathyroidism		70	Discuss the types, etiology, clinical features, investigations, and treatment of Hypoparathyroidism
	Thyroid hormones	1	71	Enlist thyroid preparations (used clinically as well as older-obsolete ones)
			72	Describe the mechanism of action, pharmacological effects, clinical use and adverse effects of Thyroxine (T4) and Triiodothyronine (T3)
	Antithyroid drugs	2	73	Classify Antithyroid drugs
			74	Describe the mechanism of action, clinical use, and adverse effects of Thioamides
			75	Describe the mechanism of action, clinical use, and adverse effects of Potassium iodide
			76	Describe Lugol's iodine solution
Pediatrics	Congenital hypothyroidism	1	79	Discuss the types and clinical features of hypoparathyroidism
			80	Discuss investigations and treatment of Hypoparathyroidism
Community medicine	Iodine deficiency/Goitre	1	81	Discuss sources of iodine and goitrogens
			82	Discuss iodine deficiency disorders and daily requirements of iodine
			83	Explain the epidemiological determinants and control strategies for iodine deficiency/goiter

Theme- 3: Excessive thirst and urination

Pathology	Diabetes Mellitus	1	84	Classify Diabetes mellitus
			85	Explain the diagnostic criteria of DM
			86	Explain the mechanisms of insulin

	• Insulin resistance • Beta cell dysfunction • Complications ○ Acute ○ Chronic			resistance
			87	Explain the mechanisms of beta cell dysfunction
			88	Explain the acute and chronic complications of DM
	Pancreatic neuroendocrine Tumors	1	89	Describe the types and clinical presentations of pancreatic neuroendocrine tumors
Medicine	Diabetes mellitus	2	90	Explain the different types of DM
	• Types • Insulin resistance syndromes • Clinical features in investigations		91	Discuss the mechanism presentation, and management of insulin resistance
			92	Discuss the clinical features of DM
			93	Explain the diagnostic workup of a patient with DM
			94	Classify the pharmacological treatment of DM
			95	Explain lifestyle modifications in the management of DM
	• Treatment • Complications	1	96	Discuss the acute and chronic complications of DM
	Hypoglycemic coma	1	97	Explain the etiology, clinical features, and management of hypoglycemic coma
	Diabetic ketoacidosis	1	98	Explain the precipitating factors, diagnostic workup, and treatment of a patient with diabetic ketoacidosis
	Hyperosmolar non-ketotic diabetic coma		99	Explain the precipitating factors, diagnostic workup, and treatment of a patient with Hyperosmolar non-ketotic diabetic coma
	Lactic acidosis		100	Explain the precipitating factors, diagnostic workup, and treatment of a patient with Lactic acidosis
	Posterior pituitary gland	1	101	Discuss the functions of hormone Vasopressin secreted by the posterior pituitary gland
			102	Explain the etiology, clinical features, investigations, and treatment of Diabetes insipidus
	SIADH		103	Explain the etiology, and pathogenesis of SIADH secretion

Pharmacology	Insulin	1	104	ClassifyInsulins
			105	DescribethesourcesofInsulin
			106	Describethedifferencesbetweenthehuman,bovineandporcine Insulins
			107	DescribethemechanismofactionandclinicalusesofInsulin
			108	Describethethecomplicationsof insulintherapy
			109	DescribethemanagementofhypoglycemiacausedbyInsulin
			110	Describethemanagementofdiabeticketoacidosis
	Oralhypoglycemicdrugs	2	111	Classifyoralhypoglycemicdrugs
			112	Enlisteuglycaemicdrugs
			113	Describe the mechanism of action and adverse effects of Sulphonylureas
			114	DescribethemechanismofactionandclinicaluseofMeglitinides
			115	Describethemechanismofaction,clinicaluse,andadverseeffects ofBiguanides
			116	Describethemechanismofaction,clinicaluse,andadverseeffects ofThiazolidinediones
			117	Describethemechanismofaction,clinicaluse,andadverseeffects ofα-glucosidaseinhibitors
			118	DescribethemechanismofactionandclinicaluseofPramlintide, ExenatideandSitagliptin
Glucagon	1	119	DescribethemechanismofactionandclinicaluseofGlucagon	
Vasopressin/Desmopressin		120	Describethemechanismofaction,clinicaluse,andadverseeffects ofDesmopressin	
		121	Enlistthedrugsusedinnephrogenicdiabetesinsipidus	
Pediatrics	ManagementofType1Diabetes mellitusinchildren	1	122	Enumeratethebloodglucoseparametersandtheclinicalsignsfor anearlydiagnosisofdiabetesin achild.

			123	Recognize how diabetes may present in young children or babies, to make the diagnosis and prevent coma or death
			124	Plan investigations and management plan for a newly diagnosed and known diabetic child.
			125	Enumerate the different types of insulin.
Community medicine	Non-communicable diseases: Prevention of diabetes mellitus	2	126	Discuss Prevalence of diabetes mellitus globally and in Pakistan
			127	Discuss modifiable and non-modifiable risk factors for diabetes mellitus
			128	Describe epidemiological determinants of diabetes mellitus
			129	Discuss screening methods for diabetes mellitus
			130	Discuss the prevention (Primary, secondary, and tertiary) and care of diabetes mellitus

Theme-4: Moonface

Physiology	Physiology of the Adrenal cortical hormones	1	131	Explain the gross and microscopic structure of Adrenal gland
			132	Explain the synthesis and functions of hormones of the adrenal cortex and their regulation by the anterior pituitary
Pathology	Hypercortisolism and Cushing's syndrome	1	133	Discuss the etiology of Hypercortisolism
			134	Explain the etiology and clinical features, of Cushing's syndrome
	Hyperaldosteronism	1	135	Explain the etiology, and presentation of primary Hyperaldosteronism
	Adrenogenital syndrome		136	Explain the etiology, clinical features, of Adrenogenital syndrome
	Adrenal insufficiency - Primary (Acute and Chronic) - Secondary	1	137	Classify adrenal insufficiency in the context of its etiology
			138	Discuss the clinical presentations and complications of adrenal insufficiency
	Adrenal neoplasms	1	139	Discuss the types of adrenal neoplasms
			140	Explain the morphology, and clinical features of adrenal neoplasms
	Pheochromocytoma	1	141	Explain the morphology, and clinical features of

				Pheochromocytoma
	Multiple Endocrine Neoplasiasyndromes(MEN)		142	ClassifyMultipleendocrineneoplasiasyndrome
			143	Explainthemorphologyandclinicalfeaturesof MEN
Medicine	Hypercortisolism and Cushing's syndrome	1	144	Explaintheetiology,clinicalfeatures,diagnosticworkup,and managementofHypercortisolism/Cushing's syndrome
	Primary Hyperaldosteronism	1	145	Explaintheetiology,clinicalfeatures,diagnosticworkup,and managementofPrimaryHyperaldosteronism
	Adrenogenitalsyndrome	1	146	Explaintheetiology,clinicalfeatures,diagnosticworkup,and managementofAdrenogenitalsyndrome
	Adrenalinsufficiency • Primary(AcuteandChronic) • Secondary	1	147	Classifyadrenalinsufficiency
			148	Explain theetiology,clinicalfeatures,investigations, and treatment ofprimaryAddison's disease
			149	Explain theetiology,clinicalfeatures,investigations, and treatment ofpituitaryadrenalinsufficiency
	Adrenalneoplasms	1	150	Explainthetypesofadrenaltumors
			151	Discussetheclinicalpresentations,diagnosticworkup, and treatment ofadrenaltumors
	Pheochromocytoma	1	152	Explaintheclinicalfeatures,investigations, management, and complicationsofPheochromocytoma
	Gastro-entero-pancreaticoneuroendocinetumors(GEP-NETs) including Carcinoidtumors		153	Explaintheclinicalfeatures,investigations, managementofGEP-NETs/Carcinoidtumors.
Pharmacology	Glucocorticoids	1	154	ClassifyGlucocorticoids
			155	Describe the mechanism of action, pharmacologicaleffects, clinical uses, and adverse effects of glucocorticoids
			156	Describe dexamethasone suppression test
	Glucocorticoid antagonists/synthesis Inhibitors	1	157	EnlistGlucocorticoidantagonists/synthesis inhibitors
			158	Describe the mechanism of action, clinical uses and adverse effects of Mifepristone, Ketoconazole, Metyrapone and Aminoglutethimide
	Aldosterone antagonists		159	Describe the mechanism of action, clinical uses, and adverse effects of Spironolactone (apart from being used as diuretic)

Community
medicine

Introduction to nutrition, basic measurements & allowances	8	160	Classify nutrients
		161	Discuss quality of nutrients in diet
		162	Discuss the balanced diet
		163	Discuss energy value of different nutrients
Macronutrients		164	Describe classification of macronutrients
		165	Discuss the functions and importance of various macronutrients
		166	Discuss daily allowance of macronutrients
		167	Discuss the diseases caused by their deficiency and excess
Micronutrients - Vitamin deficiencies allowances & control		168	Describe classification of micronutrients
		169	Discuss the function and importance of various vitamins
		170	Discuss daily allowances of vitamins
		171	Discuss diseases caused by their deficiency
		172	Discuss the function and importance of various minerals essential for Health
Micronutrients - mineral deficiencies allowances and control		173	Discuss daily allowance of minerals intake
		174	Discuss diseases caused by their deficiency
Undernutrition – Protein calorie malnutrition and control		175	Define undernutrition and its classification.
		176	Discuss protein calorie malnutrition & its causes
		177	Describe the various classifications for assessment of PEM
		178	Discuss control strategies of malnutrition
Over-nutrition / obesity and its control		179	Define obesity
		180	Calculate BMI
		181	Discuss Epidemiology of obesity.
		182	Enumerate Causes of obesity.
		183	Explain the Complications of obesity
		184	Formulate a management plan for obesity
		185	Discuss Prevention of obesity

Theme- 5: Infertility and pregnancy

Pathology	Testicular tumors	1	186	Classify testicular tumors
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			187	Explain the gross and microscopic morphology of benign and malignant testicular tumors
			188	Discuss the staging and prognosis of testicular malignant tumors
Prostatic disorders	2		189	Explain the etiology and morphology of Prostatitis
• Prostatitis			190	Explain the gross and microscopic morphology and complications of BPH
• Benign prostatic hyperplasia (BPH) • Prostatic carcinoma			191	Explain the clinical features, types and staging of prostatic carcinoma
Sexually transmitted diseases (STDs)	1		192	Explain the types of STDs
• Syphilis			193	Explain the stages, morphology, clinical features, and complications of Syphilis
• Gonorrhea			194	Name the organisms causing Gonorrhea and its clinical features
Introduction to gynecological cancers	1		195	Enlist different types of gynecological cancers
Cervical carcinoma			196	Explain the gross and microscopic morphology, clinical features and staging of Cervical carcinoma
Endometritis	1		197	Explain the etiology and pathogenesis of endometritis
Uterine fibroids			198	Explain the etiology and morphology of uterine fibroids
Endometriosis			199	Explain the etiology, pathogenesis and morphology of endometriosis
Endometrial hyperplasia and endometrial carcinoma	1		200	Explain the etiology, pathogenesis, morphology of Endometrial hyperplasia/carcinoma
Polycystic ovarian disease	1		201	Explain the etiology, risk factors, clinical features and morphology of Polycystic ovary syndrome
Tumors of the ovary	1		202	Classify benign and malignant tumors of the ovary
• Benign • Malignant			203	Explain the gross and microscopic morphology, clinical features, staging and complications of ovarian carcinoma.
Gynaecology	Anatomy of the reproductive tract	1	204	Describe the anatomy of the perineum, the vagina, cervix and uterus, the adnexa and ovary

Menopause	1	205	Define Menopause.
		206	Describe physiological and non-physiological menopause
		207	Explain the clinical effects of menopause on women
		208	Outline the assessment of menopausal women, based on modifiable and non-modifiable risk factors.
		209	Explain the management of menopause
		210	Describe the types, side-effects, relative and absolute contraindications of hormone replacement therapy (HRT)
Contraception	1	211	Define contraception.
		212	Classify contraceptive methods
		213	Explain the mechanisms of action, efficacy, and failure rates
		214	Explain the risks and benefits of each method
		215	Identify the complications of different contraceptive methods
Polycystic ovary syndrome	1	216	Explain the risk factors, aetiology, clinical features, investigations, treatment, complications, and prognosis of polycystic ovary syndrome
Uterine fibroids		217	Explain the risk factors, clinical features, and management of uterine fibroids
Endometrial cancers	1	218	Explain the risk factors, clinical features, investigations, prognosis, and management of endometrial carcinoma
Cervical carcinomas		219	Explain the risk factors, clinical features, investigations, prognosis, and management of cervical carcinoma
Female infertility	1	220	Define infertility
		221	Discuss the causes and management of female infertility
Malignant diseases of the ovaries	1	222	Classify benign and malignant diseases of the ovaries

			223	Explain the clinical features, diagnosis, serological markers, staging, management, and complications of ovarian carcinoma
	Uterovaginal prolapse	1	224	Describe the etiology, clinical features, complications, and management of Uterovaginal prolapse
	Urinary incontinence	1	225	Classify urinary incontinence
			226	Explain the etiology, clinical features, management, and prevention of urinary incontinence
	Endometriosis	1	227	Define endometriosis
			228	Explain the etiology, clinical features, investigations, and management of Endometriosis
	Abnormal uterine bleeding	1	229	Explain the etiology of abnormal uterine bleeding
			230	Describe the diagnostic approach to a patient with abnormal uterine bleeding
	Miscarriage	1	231	Define miscarriage
			232	Explain the etiology, risk factors, management, and prevention of miscarriage
	Ectopic gestation		233	Describe the etiology, clinical features, diagnosis, and management of ectopic gestation
	Gestational trophoblastic diseases (GTDs)	1	234	Classify GTDs
			235	Explain the etiology, clinical features, diagnosis, management, and complications of H. Mole
			236	Explain the etiology, clinical features, diagnosis, management, and complications of Choriocarcinoma
	Vaginal discharge and STDs	1	237	Explain the etiology and diagnostic workup of vaginal discharge
			238	Describe the risk factors, etiology, clinical features, management, complications, and prevention of STDs
Pharmacology	Gonadotropins (FSH & LH) and human chorionic gonadotropin	1	239	Describe the mechanism of action, clinical uses, and adverse effects of Gonadotropins (FSH & LH) and human chorionic gonadotropin (hCG)

		240	Describe the role of gonadotropins in male infertility
Gonadotropin-releasing hormone and analogues (Gonadorelin and others)		241	Describe the mechanism of action, clinical uses and adverse effects of Gonadotropin-releasing hormone and analogues (Gonadorelin and others)
Oxytocin	1	242	Describe the mechanism of action, clinical uses, and adverse effects of Oxytocin
Oestrogens	1	243	Classify Oestrogens
		244	Describe the mechanism of action, organ system effects, clinical uses, adverse effects, and contraindications of Oestrogens
		245	Describe Premarin
Progestins	1	246	Classify Progestins
		247	Describe the mechanism of action, organ system effects, clinical uses, adverse effects, and contraindications of Progestins
Oral contraceptives	2	248	Classify Oral contraceptives
		249	Describe the mechanism of action, organ system effects, clinical uses, adverse effects, and contraindications of oral contraceptive pills.
		250	Describe mini pills with their advantages and disadvantages
		251	Describe post-coital contraceptives
Parenteral and implantable Contraceptives		252	Describe the use of Parenteral (Medroxyprogesterone) and implantable (Norplant system) contraceptives
Ovulation-inducing agent (Clomiphene)	1	253	Describe the mechanism of action, clinical use, and adverse effects of Clomiphene
Mifepristone		254	Describe the mechanism of action, clinical uses, and adverse effects of Mifepristone
Danazol		255	Describe the mechanism of action, clinical uses, and adverse effects of Danazol

	Androgens and anabolic steroids	1	256	Enlist Androgens and anabolic steroids
			257	Describe the mechanism of action, clinical uses, and adverse effects of androgen preparations
	Antiandrogens		258	Classify antiandrogens
			259	Describe the role of Ketoconazole as steroid synthesis inhibitor, its clinical uses, and adverse effects
			260	Describe the mechanism of action and clinical use of Finasteride
			261	Describe the mechanism of action and clinical use of Cyproterone acetate
			262	Describe the role of Spironolactone as androgen receptor blocker and its use in this context
	Male contraception		263	Enlist the drugs used for male contraception
Forensic medicine	Impotence and sterility	1	264	Describe the role of Gossypol as male contraceptive agent
			265	Define impotence
			266	Define sterility
			267	Examine under supervision a case of sterility and impotence
			268	Describe important causes leading to sterility and impotence in males as well as in females
			269	Appreciate difference between sterility and impotence
			270	Medicolegal importance of sterility and impotence
	Sterilization	1	271	Define sterilization
			272	Medicolegal importance of sterilization
			273	Discuss the technique of sterilization in males and females

		274	enumerate legal formalities before sterilization
Artificial insemination	1	275	Define artificial insemination
		276	Enumerate its different types
		277	Describe medicolegal aspects of artificial insemination
		278	Define test tube baby
		279	Define surrogate motherhood and enumerate its medicolegal importance
Virginity	1	280	Define virginity
		281	Discuss signs of virginity
		282	Enumerate different types of hymen.
Pregnancy	1	283	Define pregnancy
		284	Describe presumptive signs of pregnancy
		285	Discuss probable signs of pregnancy
		286	Appreciate conclusive signs of pregnancy
		287	Enumerate signs of pregnancy in dead
		288	Discuss medicolegal aspects of pregnancy
		289	Describe Isqate Haml & Isqate Janina per PPC
Delivery	1	290	Define delivery
		291	Appreciate signs of recent delivery in living

		292	Appreciate or identify signs of recent delivery in dead
		293	Identify signs of remote delivery in living and dead
		294	Enumerate medico legal aspects of delivery
Legitimacy & dissolution of marriage	1	295	Define legitimacy
		296	Define illegitimate child
		297	Enumerate medico legal aspects of legitimacy
		298	Define superfetation
		299	Enumerate medico legal aspects of affiliation/adoption
		300	Enlist legal grounds for nullity and dissolution of marriage
Natural sexual offences: Rape & Incest	1	301	Define rape as per CrPC
		302	Enumerate medico legal aspects of rape
		303	Examine under supervision a case of rape victim
		304	Examine under supervision examination of the accused
		305	Define incest
Zina	1	306	Define Muhsan as per Hudood ordinance 1979.
		307	Define Zina according to Hudood ordinance 1979.
		308	Enumerate the conditions required for liability in case of Zina.
		309	Enlist punishment of Zina

Unnatural sexual offencesSodomy	1	310	Enumeratesteps ofproof ofZina inthecourt
		311	Describesteps ofcomplaint in case ofZina as per CrPC
		312	Definesodomy
		313	Enumeratesteps ofexamination ofpassive agent in sodomy
		314	Enumeratesteps ofexamination ofactive agent
		315	Define and describebuccalcoitus
		316	Define and describetricadism
		317	Definebestiality
		318	Definesexualperversions
		319	Enumerateits differenttypes
		320	Define and describesadism
		321	Define and describemasochism
		322	Define and describefetishism
		323	Define and describeexhibitionism
Sexualperversions	1	324	Define and describetransvestism
		325	Define and describeuranism
		326	Define and describevoyeurism
		327	Define and describefrotteurism

			328	Define and describe eurolagnia
	Abortion	1	329	Define abortion
			330	enumerate its different types
			331	enumerate salient features of natural abortion
			332	enumerate salient features of artificial abortion
			333	differentiate between natural and criminal abortion
			334	examine under supervision a case of criminal abortion and legal formalities to be fulfilled in such a case
Urology/Surgery	Causes of male infertility	1	335	Discuss the causes of male infertility
			336	Explain the diagnostic workup of a male infertile patient
Surgery	Cryptorchidism	1	337	Define Cryptorchidism
			338	Explain the etiology, complications, and management of Cryptorchidism
	Hydrocele and varicocele		339	Explain the cause, clinical features, complications and surgical management of hydrocele and varicocele
	Benign prostatic Hyperplasia	1	340	Explain the etiology, clinical features, complications, and management of BPH
	Carcinoma of prostate		341	Explain the etiology, clinical features, complications, staging, management, and prognosis of carcinoma of the prostate
Community medicine	Safe motherhood	1	342	Define reproductive health
			343	Describe components of reproductive health
			344	Define safe motherhood

			345	Discuss pillars of safe motherhood
	Antenatal care	1	346	Discuss antenatal care
			347	Discuss antenatal visits as per WHO
	Family planning and post-abortion care	1	348	Define family planning
			349	Discuss different methods of family planning
			350	Discuss contraceptive prevalence rate and factors responsible for low CPR
			351	Discuss Post-abortion care
	Child promotion and development strategies (IMNCI, IMCI and growth monitoring)	2	352	Define IMNCI & IMCI
			353	Describe components of IMNCI
			354	Enumerate principles of IMNCI
			355	Discuss growth monitoring
	Prevention of reproductive health diseases	1	356	Discuss different reproductive health diseases
			357	Discuss STIs in detail
			358	Discuss risk factors and Prevention of CA cervix
Family medicine	Menstrual disorders	1	359	Enlist menstrual disorders
			360	Explain the etiology, investigations, and management of menstrual disorders in primary care
	Menopause		361	Explain the clinical features, and management of menopausal symptoms and complications in primary care
	Contraception	1	362	Explain the types of contraception methods

	Vaginal discharge and STDs	1	363	Explain the merits and demerits of different contraceptive techniques
			364	Describe the complications associated with the use of oral and injectable contraceptives
			365	Explain the etiology of vaginal discharge
			366	Describe the diagnosis and management of vaginal discharge in primary care
			367	Classify Sexually transmitted infections in females
			368	Describe the clinical features, investigations, and management of STDs in females in primary care

Theme-6: Breast Lump

Pathology	Fibrocystic changes	1	369	Explain the fibrocystic changes in breast including cysts, fibrosis, epithelial hyperplasia and adenosis
	- Cysts and fibrosis - Epithelial hyperplasia - Adenosis			
	Fibro-adenoma		370	Explain the morphology of Fibro-adenoma of the breast
	Papilloma		371	Explain the morphology of papilloma of the breast
	Carcinoma of the breast	1	372	Explain the risk factors, etiopathogenesis, clinical features, staging, and complications of carcinoma of the breast
Surgery	Gynecomastia		373	Discuss the causes and morphology of Gynecomastia
	Investigations of breast Diseases	1	374	Justify the investigations of a patient with a breast lesion
	Benign breast diseases		375	Classify benign breast diseases
	Malignant breast diseases	2	376	Classify malignant breast diseases
			377	Discuss the risk factors, etiology, clinical features, investigations, management, and prognosis of a patient with breast cancer
			378	Describe the role of hormone receptors in breast cancer
			379	Explain the complications of breast cancer surgery

			380	Discuss the role of pharmacological treatment options in breast cancer management
			381	Explain the role of selective estrogen receptor modulators in the prevention of breast cancer in high-risk women
Pharmacology	Selective Estrogen Receptor Modulators (SERMs)-Tamoxifen and others	1	382	Enlist Selective Estrogen Receptor Modulators (SERMs)
			383	Describe the mechanism of action and clinical uses of Tamoxifen
Community medicine	Breastfeeding	1	384	Discuss advantages of breastfeeding
			385	Discuss artificial feeding
			386	Discuss baby friendly hospital initiative
			387	Discuss guidelines on infant and child feeding
	Screening and prevention of breast cancer		388	Discuss different methods of screening for breast cancer
			389	Discuss levels of prevention of breast cancer
Radiology	Radiological approaches to breast cancer screening	1	390	Explain the indications, procedure, and interpretation of ultrasound and mammography in the investigation of breast lumps
PRIME/MEDICAL EDUCATION	Counselling-Breaking bad news.	1	391	Explain the concept of SPICES model of breaking bad news

Practical work

Pharmacology	Graves' disease	1.5	392	Formulate prescription for a patient with Graves' disease
	Diabetes mellitus	1.5	393	Formulate prescription for a patient with type 1 and type 2 Diabetes mellitus
Pathology	Glucose estimation	1.5	394	Check glucose in urine
			395	Check blood glucose in a given sample.
	Goitre	1.5	396	Identify the microscopic features of multinodular goitre
	Papsmear	1.5	397	Interpret a papsmear slide
	Fibroids	1.5	398	Identify the microscopic features of uterine fibroids
	Carcinoma breast	1.5	399	Identify the microscopic features of carcinoma of the breast

Forensic medicine	Examination of a	2	400	Take consent from a rape victim	
			401	Examine a rape victim/manikin	
			402	Describe the procedure of taking sample from victim/manikin/item	from
			403	Describe the procedure of Sealing and preservation of the specimen	
	Examination of sodomy victim and assailant	2	404	Describe the procedure of Examining a victim of sodomy	
			405	Describe the procedure of Taking sample from victim/manikin/item	from
			406	Describe the procedure of Sealing and preservation of the specimen	
Community medicine	Contraception	1.5	407	Identify the contraceptive device/drug	
			408	Explain the merits and demerits	
			409	Discuss the method of administration of the given device/drug	
	Mother and child health	1.5	410	Identify the chart	
			411	Devise a schedule plan for antenatal visits as per WHO criteria	
	EPI schedule	1.5	412	Counsel the mother for EPI schedule	
	Vaccination and immunization	1.5	413	Identify the vaccine	
			414	Explain its uses	
			415	Discuss its schedule of administration	
			416	Discuss the results of VVM (vaccine vial monitor) and its uses in epidemics	
			417	Identify the model	
	IMCI- anthropometric measures/ Shaker's tape	1.5	418	Measure the mid-arm circumference	
			419	Calculate the weight and height of the child	
			420	Interpret the results	
			421	Identify the chart	
			422	Plot the graph using a scenario	
	Growth chart	1.5	423	Interpret different parts of the chart	
			424	Interpret the given demographic indicator (population pyramid, HDI, PQLI, Growth rate and dependency ratio)	HDI,
	Demographic indicators	1.5			

MIT: mode of information transfer. E.g. lecture, SGD, DSL, Practical, skill lab etc etc

MOHI-UD-DIN ISLAMIC MEDICAL COLLEGE MIRPUR

DEPARTMENT OF MEDICAL EDUCATION



EAR, NOSE & THROAT

4TH YEAR MBBS

BLOCK: M1

MODULE CODE: MB4-M1-ENT-23



2. Learning Objectives

General Learning Outcomes

By the end of this module the students would be able to;

1. Describe the anatomy and physiology of Ear, Nose, Throat & Neck.
2. Obtain appropriate history, examine Ear, Nose, oral cavity, pharynx, larynx and Neck including mirror examinations and functional examinations of these areas.
3. Describe benign and malignant tumors involving the ENT and Head & Neck.
4. Assist in diagnostic procedures and take swab for culture and sensitivity from ear, Nose & throat under supervision.
5. Prescribe hematological investigations, x-ray paranasal sinuses, CT/MRI scan of paranasal sinuses, temporal bone and Head & Neck & interpret it.
6. Perform clinical tests of hearing, tuning fork tests and balance independently
7. Interpret pure tone audiogram & tympanogram.
8. Describe the ABC protocol for resuscitation of traumatic patients.
9. Discuss differential diagnosis of membrane on the tonsils and describe diphtheria.
10. Describe sialadenitis, sialolithiasis and enumerate the benign and malignant salivary tumors.
11. Discuss a treatment plan for the patients with various common diseases of the ENT and Head and Neck region.
12. Describe dysphagia and its causes, Plummer-Vinson Syndrome and malignant tumors of hypopharynx that could lead to dysphagia and hoarseness along with their management.
13. Describe the management of corrosive ingestion and foreign body in the esophagus.
14. Describe various congenital and acquired disorders of the ENT and Head & Neck region.
15. Describe the significance of hoarseness and stridor & enumerate their causes and clinical features of respiratory obstruction.
16. Differentiate clinically between various types of stridor and possible site of obstruction.
17. Describe tracheostomy and indications for this procedure.
18. Describe squamous cell carcinoma of the larynx and the impact of stage of disease on management and survival of patient.
19. Explain the mutual association of hearing and balance disorders & the various conditions that give rise to these disorders.
20. Describe the clinical features and course of otosclerosis, Meniere's disease, vestibular neuritis & BPPV.
21. Diagnose suppurative otitis media & describe its intracranial and extra cranial complications.
22. Describe the 'rehabilitation of deaf and mute child' and the impact of hearing impairment in children.
23. Describe rhinosinusitis, its various types of rhino-sinusitis and its complications.

24. Describe the diseases of the nasal septum & define DNS and enumerate its various types.
25. Describe the pathophysiology, types, and management of Sino nasal polyposis.
26. Enumerate various conditions resulting in nasal obstruction & discharge.
27. Describe various types of allergic & non-allergic rhino-sinusitis.
28. Enumerate fungal and other granulomatous diseases of the nose & paranasal sinuses and describe their management.
29. Categorize various conditions benign & malignant neoplasms of the nose & paranasal sinuses.
30. Classify various types of neck swellings and describe clinical differentiating features of benign & malignant neck masses.
31. Describe a classification of various lymph nodes levels in the neck and describe the lymphatic drainage of the head and neck.
32. Obtain informed consent from patient and communicate with the patients, their families and community regarding diseases & its relevant issues.
33. Describe the anatomy and physiology of salivary glands
34. Describe benign & malignant diseases of the salivary glands

3. Specific learning objectives

Table1:SoreThroat

TOPIC	HOURS	LEARNINGOBJECTIVES
Anatomy&physiologyoforal cavity, Pharynx & salivary glands	2hours	1. Discuss the anatomy of oral cavity and site classification of oral cavity. 2. Discuss applied anatomy of pharynx & mechanism of deglutition 3. Discuss applied anatomy of nasopharynx and anatomy and physiology of adenoids 4. Discuss applied anatomy of oropharynx and anatomy and physiology of pharyngeal tonsils 5. Discuss the anatomy of minor and major salivary glands
Acute Pharyngitis	1 hour	6. Discuss classification, types, aetiology, clinical features, diagnosis and treatment of acute pharyngitis
Chronic Pharyngitis	1 hour	7. Discuss classification, types, aetiology, clinical features, diagnosis and treatment of chronic pharyngitis
Acute Tonsillitis/Peritonsillar abscess (Quinsy)	1 hour	8. Discuss classification, types, aetiology, clinical features, diagnosis and treatment of acute tonsillitis 9. Discuss the aetiology, clinical features and treatment of quinsy
Chronic Tonsillitis	1 hour	10. Discuss classification, types, aetiology, clinical features, diagnosis and treatment of chronic tonsillitis
Oral ulceration	1 hours	11. Enumerate differential diagnosis of oral ulcers and discuss management of Aphthous ulcers
Trauma to the palate and Oropharynx	1 hour	12. Discuss the principles of soft tissue & bone repair in palatal and pharyngeal trauma.
Carcinoma of oral cavity	1 hour	13. Discuss the aetiology, clinical features and treatment of oral carcinoma
Approach to a patient with sore throat	1 hour	14. Enumerate differential diagnosis of sore throat and discuss important differentiating points
Anatomy&physiology of salivary glands	1 hour	15. Describe the anatomy & physiology of parotid, submandibular, sublingual & minor salivary glands

Nonneoplastic disorders of the salivary glands	1 hour	16. Describe nonneoplastic disorders of salivary glands, its management and treatment
Sialolithiasis and sialectasis	1 hour	17. Describe stone formation and stasis of secretions in the salivary glands and its management
Neoplasms of salivary glands	1 hour	18. Describe the features, course and management of benign and malignant, submandibular, sublingual and minor salivary glands
Complications of salivary gland surgeries	1 hour	19. Describe in detail different surgical procedures of salivary glands and its complications

Table 2: Difficulty in Swallowing

TOPIC	HOURS	LEARNING OBJECTIVES
Dysphagia & Plummer Vinson Syndrome	1 hour	20. Discuss Dysphagia & the anatomy and physiology of Esophagus and the appropriate medical and surgical treatment of dysphagia. 21. Discuss PVS & the predisposing factors for causation & management
Pharyngeal and esophageal Pouches	1 hour	22. Discuss Pharyngeal pouch & the predisposing factors, clinical features, and treatment.
Oropharyngeal Tumors	1 hour	23. Enumerate oropharyngeal tumors. Discuss the types, aetiology and treatment of oropharyngeal carcinoma.
Hypopharyngeal Tumors	1 hour	24. Enumerate hypopharyngeal tumors. Discuss the aetiology and treatment of hypopharyngeal carcinoma.
Tumors of Esophagus.	1 hour	25. Classify esophageal tumors & describe the aetiology, clinical features, and treatment options.

Table 3: Hoarseness & Stridor

TOPIC	HOURS	LEARNING OBJECTIVES
Applied anatomy of potential spaces in & around the larynx and neck	2 hours	26. Discuss applied anatomy of larynx. 27. Discuss the pre-piglottic, paraglottic & Rinke's space.
Anatomy of Potential neck spaces	3 hours	28. Discuss anatomy of deep fascia of neck & anatomy of potential pharyngeal and neck spaces.

		29. Discuss surgical anatomy of peritonsillar, parapharyngeal & submandibular spaces. 30. Discuss anatomy of retro pharyngeal space.
Applied anatomy & physiology of Larynx/neck , Voice physiology	2 hour	31. Discuss applied anatomy of Larynx. 32. Discuss the physiology of larynx. 33. Discuss the physiology of voice, speech production & its regulation
Acute Laryngitis	1 hour	34. Discuss aetiology, clinical features, diagnosis, and treatment of acute simple laryngitis
Chronic Laryngitis	1 hour	35. Discuss chronic laryngitis including chronic ranulomatous conditions of the larynx, its clinical features, diagnosis, and treatment.
Vocal nodules & vocal polyps	1 hour	36. Discuss differentiating points between vocal nodules & polyps, its aetiology, clinical features, diagnosis, and treatment.
Vocal cord paralysis	1 hour	37. Discuss paralytic causes of hoarseness, its types, clinical features, diagnosis, and treatment.
Stridor	1 hour	38. Enumerate causes of stridor. Explain types of stridor. Discuss management of congenital stridor

Apyrexialcausesofstridor	1 hour	39.Discussthe aetiologyand management ofacquiredapyrexial causes of stridor
Pyrexialcauses	1 hour	40.Discussthe aetiologyand management ofpyrexialcauses of stridor
Laryngealtrauma	1 hour	41.Discussthe managementof laryngeal trauma
AcuteRespiratoryobstruction	1 hour	42.Discussignsofrespiratoryobstruction. Enumerate alternate airways & discuss tracheostomy.
LaryngotrachealForeignbody	1 hour	43.Discussthe aetiology, types & treatment ofLaryngotrachealForeignbodies.
MalignantTumoursoftheLarynx/ Carcinoma of Larynx	1 hour	44. Discuss incidence, epidemiology, risk factors, Pathology&classificationofcarcinomalarynx. 45. DiscussUICCclassificationoflaryngealsites& subsites.Discussmanagementofcarcinomaof all the subsites
Approachtoapatientwithhoarseness	1 hour	46.Discuss the differentials diagnosis of hoarsenessandexplainmanagementapproach to a patient presenting with hoarseness

Table4Deafness,EarDischarge&Dizziness

TOPIC	HOURS	LEARNINGOBJECTIVES
AppliedAnatomyandPhysiologyof Ear	2 hours	47. Describetheappliedanatomyoftheexternal, middle & internalear. 48. Discussthefunctionsoftheear. 49. Discussbasicprinciples&interpretationofvarious tuning fork tests. 50. DiscusstheinterpretationofPTA&impedanceaudiometry
TraumatoExternalEarandthe Temporal Bone	1 hour	51. Classifythetraumatoexternalearandthe temporal bone. 52. Describetheappropriateimaginginvestigations&treatments.
Otitis Externa	1 hour	53.Discuss Otitis Externa, its clinical features, differentialdiagnosisandrelevantclinical&radiological investigationsandtreatment.
AcuteSuppurativeotitismedia	1 hour	54.Discussacutesuppurativeotitis media.

		55. Describe its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment
Chronic Suppurative Otitis Media without cholesteatoma	1 hour	56. Discuss Chronic Suppurative Otitis Media and its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment.
Chronic Suppurative Otitis Media with Cholesteatoma	1 hour	57. Discuss cholesteatoma and its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment.
Complications of Suppurative Otitis Media.	1 hour	58. Discuss intracranial & extracranial otogenic complications and enumerate the appropriate clinical & radiological investigations and treatment.
Mastoiditis: Acute and Chronic	1 hour	59. Discuss mastoiditis, its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment.
Acoustic Neuroma	1 hour	60. Discuss acoustic neuroma & the appropriate clinical, audiological, and imaging studies used in diagnosis and treatment of acoustic neuroma.
Approach to patient with a Conductive hearing loss	1 hour	61. Discuss the differential diagnosis of hearing loss & the medical and surgical management of CHL. 62. Discuss otosclerosis & its medical & surgical treatment of otosclerosis. 63. Discuss OME & its medical and surgical treatment
Approach to patient with a Sensorineural Hearing Loss (SNHL)	2 hours	64. Discuss SNHL & its differential diagnosis. 65. Discuss tinnitus & its management. 66. Discuss Ototoxicity & its management.
Vertigo Vestibular Neuritis Meniere's Disease BPPV	1 hour	67. Discuss true vertigo & its types, pathophysiology, investigations & management. 68. Discuss Meniere's disease & its treatment. 69. Discuss BPPV & its clinical features, diagnoses & treatment.
Approach to a deaf patient	1 hour	70. Discuss the approach to a deaf patient.

Approach to Management of Deaf Child	1 hour	71. Differentiate congenital, developmental, and acquired hearing loss & describe the impact of hearing impairment at various ages and their management.
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Table 5 Nasal Obstruction

TOPIC	HOURS	LEARNING OBJECTIVES
Applied Anatomy, Physiology of Nose & Paranasal Sinuses	2 hours	72. Discuss the surgical anatomy, physiology & congenital disorders of the nose & PNS. 73. Discuss the congenital disorders of the nose, palate & choanal atresia
Diseases of the Nasal Septum	1 hour	74. Discuss DNS, its types, the clinical features, medical & surgical treatment of nasal obstruction.
Sino-Nasal Polyposis	1 hour	75. Discuss sino-nasal polyposis, its types and describe the clinical features, medical & surgical treatment of nasal polyps.
Fungal Rhinosinusitis	1 hour	76. Discuss various fungi implicated in fungal rhinosinusitis and the appropriate clinical, radiological investigations and treatment of fungal rhinosinusitis.
Sino-Nasal Tumors	1 hour	77. Discuss various benign and malignant tumors affecting the nose and paranasal
		sinuses and their clinical features, step involved in diagnosis and treatment options.

Trauma to Nose and Face and CSF Rhinorrhea	1 hour	78. Discuss the LeFort classification of facial fractures & the appropriate clinical and radiological investigations & management of these fractures. 79. Discuss CSF rhinorrhea and the predisposing factors, types, clinical features, investigations and treatment.
Headaches and Facial Pain	1 hour	80. Discuss rhinogenic headaches and the appropriate clinical, radiological investigations and treatment.
Granulomatous Diseases of the Nose	1 hour	81. Discuss various granulomatous disorders affecting the nose & the clinical features, investigations & treatments.
Adenoids	1 hour	82. Discuss anatomy & diseases of adenoids and treatment.
Juvenile Nasopharyngeal Angiofibroma	1 hour	83. Enumerate diseases of the nasopharynx.
		84. Discuss Juvenile nasopharyngeal angiofibroma, clinical features, investigations and treatment.
Nasopharyngeal Carcinoma	1 hour	85. Discuss the risk factor, clinical features, investigation, treatment and follow-up of nasopharyngeal carcinoma.
Acute Sinusitis	1 hour	86. Discuss acute sinusitis & the appropriate clinical, radiological investigations and steps involved in treatment of patients.
Chronic Sinusitis	1 hour	87. Discuss chronic sinusitis & the appropriate clinical, radiological investigations and steps involved in treatment of patients.

ComplicationsofSinusitis	1 hour	88. Enumeratethepredisposingfactorsfor development of complications due to sinusitis. 89. Discusstreatment.
AllergicRhinitis(AR)and Non-allergic	1 hour	90. Discussallergic rhinitis and its types,pathophysiology,investigations &the medical and surgical treatment.
		91. Discussnon–allergicrhinitisandthe appropriate clinical and radiologicalinvestigationsandits treatment.
InfectiveRhinitis:Acute.& Chronic.	1 hour	92. Discuss infective rhinitis and the medicalandsurgicaltreatmentof varioustypesofacuteandchronicinfect iverhinitis.
ForeignBody, Rhinolith,Maggots Nose	1 hour	93. Discuss Rhinolith and maggots in the noseandtheappropriatemedicaland surgical treatment of patients withtheseconditions.
Approachtoapatientwith Epistaxis	1 hour	94. Approachto a patient with epistaxis 95. Discuss epistaxis & the appropriate clinical,radiological&hematological investigations & treatment of the condition.

Table6NeckSwelling

TOPIC	HOURS	LEARNINGOBJECTIVES
ParapharyngealAbscess	1 hour	96. Discussthe aetiologyand management of eachParapharyngeal abscess.
Retropharyngeal Abscess	1 hour	97. Discussthe types, aetiology, ttreatmentandcomplicationsof each retropharyngeal abscess.
SubmandibularAbscess	1 hour	98. Discussthecausesandtreatmentof submandibularabscess.
TraumaoftheLarynxandNeck	1 hour	99. Classifythenatureoftraumatotheneck&lar ynx. 100. Discussclinical features,investigations andtreatment.
Approachtoaneckswelling	1 hour	101. Discuss the approach to a neck swelling.

	r	
Evaluation of metastatic lymph nodes and occult primary in Neck (Occult Primary).	1 hour	102. Discuss Occult primary & the predictable nodal drainage in head and Neck region. 103. Discuss the signs and symptoms of occult primary & the appropriate clinical and radiological investigations & different treatment options.

Table 7: Theme I- Foundation of Otorhinolaryngology & Head and Neck

Topic	Hours	Learning objectives	Assessment method
History taking	01	1. Obtain detailed history of sore throat	OSCE
Examination	02	2. Perform Examination in a sore throat patient including general physical, local and systemic examination	OSCE
Nasopharyngeal examination	02	3. Perform mirror examination of nasopharynx	OSCE
Examination of oral cavity and oropharynx	02	4. Examine oral cavity and oropharynx in a systematic way	OSCE
Hypopharyngeal Examination	01	5. Perform Indirect hypopharyngoscopy with mirror	OSCE
Mouth gauge and other instruments	01	6. Assemble mouth gauge and name the instrument used in tonsillectomy with utility of each instrument.	OSCE
Examination of Neck	02	7. Perform systematic examination of Neck	OSCE

Table 8: Theme II- Sore Throat

Topic	Hours	Learning objectives	Assessment method
Communicate with patient of tonsillectomy	01	1. Obtain a pre-operative informed consent from a patient of tonsillectomy	OSCE
Tonsillar surgery & its instruments	02	2. Observe tonsillectomy surgery and identify instruments used	OSCE

Conservative management of sore throat	01	3. Discuss a conservative management plan for inpatient acute follicular tonsillitis	OSCE
Scrubbing technique	01	4. Demonstrate scrubbing hands using proper solution & take proper time by proper method	OSCE
Biopsy from oral ulcer	01	5. Assist to take a biopsy from tongue ulcer	OSCE

Table 9: Theme III - Difficulty in Swallowing

Topic	Hours	Learning objectives	Assessment method
Rigid Endoscopy system	01	1. Identify instruments & equipment used in rigid endoscopy system, describe rigid endoscopies.	OSCE
Oral & oropharyngeal mass palpation	01	2. How to palpate a mass in the oral cavity and oropharynx	OSCE
Oesophagoscopy	02	3. Observe rigid oesophagoscopy done for pharyngeal growth or dysphagia	OSCE

Table 10: Theme IV - Hoarseness and Stridor

Topic	Hours	Learning objectives	Assessment method
History taking	02	1. Obtain detailed history of hoarseness & stridor	OSCE
Examination	02	2. Perform examination in a patient with hoarseness & stridor, including general physical, local and systemic examination	OSCE
Indirect laryngoscopy examination	01	3. Perform mirror examination of Laryngopharynx	OSCE
Examination of Neck	01	4. Perform systematic examination of Neck	OSCE
Investigation of Laryngeal diseases	01	5. Fill requisition form for different types of investigations for Laryngeal diseases.	OSCE
Video laryngoscopy	01	6. Observe a video of laryngoscopy for the diagnosis of hoarseness in clinical setting	OSCE

Conservative management of Hoarseness	01	7. Discuss a conservative management plan for a patient of hoarseness due to voice abuse.	OSCE
Laryngoscopy	02	8. Observe rigid system laryngoscopy under general anesthesia and identify instruments used in the procedure	OSCE
Communicate with a patient for voice rest	01	9. Counsel a patient on voice rest	OSCE
Stridor in bilateral abductor vocal paralysis	02	10. Counsel bilateral abductor paralysis patient & its management in a post thyroidectomy patient	OSCE
Biopsy from laryngeal growth.	01	11. Observe the procedure for taking biopsy from laryngeal growth.	Formative
Tracheostomy	01	12. Demonstrate the procedure of Tracheostomy	Formative
Communicate with patient on laryngectomy	01	13. Demonstrate the procedure how to Obtain informed consent from a patient for total laryngectomy	OSCE

Table 11: Theme V-Deafness, Ear Discharge & Dizziness

Topic	Hours	Learning objectives	Assessment method
History taking	02	1. Obtain detailed history from a patient with ear discharge/deafness/dizziness	OSCE
Local Examination	01	2. Perform clinical examination of the hearing & balance system.	OSCE
Otoscopy Tuning fork test Balance testing Examination under microscope	03	3. Perform otoscopic examination of the ear 4. Perform tuning fork tests 5. Perform test of balance, peripheral & central 6. Assist in performing EUM	OSCE
Investigations of ear diseases	01	7. Discuss & fill requisition form for different types of investigations for ear diseases.	OSCE
Interpretation of audiogram and Impedance	01	8. Discuss the interpretation of audiogram and impedance.	OSCE

Table12:ThemeVI-NasalObstruction

Topic	Hou rs	Learningobjectives	Assessment method
Historytaking	02	1.Obtainedetailedhistoryfromapatientwithnasalobstruction	OSCE
LocalExamination	01	2.Perform clinical examination ofthenose¶nasalsinuses.	OSCE
Anterior& posterior Rhinoscopy		3.Performanterior&posteriorRhinoscopies with mirror	
Probetest		4.Performprobetest	
Nasendoscopy	01	5.Assist in performing nasendoscopy.	OSCE
Pusculture/sensitivity	01	6.PerformTakeswabfromnosefordifferent purpose	
X– Rays nasopharynx /PNS		7.interpretX– Rays nasopharynx/PNSforenlarged soft tissues shadow	OSCE
Nasal patency & adenoid facies in enlarged adenoids	01	8.Perform examination for nasalpatencyin enlarged adenoids.	OSCE
Adenoidsurgery	01	9.Observeadenoidsurgerybeingdone in operating room	Formative
CTscannose& nasopharynx	01	10.Interpret CT scan in nasopharyngealangiofibroma, describe bowing sign.	Forma tive
NasopharyngealBiopsy	01	11.Observe surgery for nasopharyngealbiopsy	Forma tive
Investigationsofnose¶nasalsinuses diseases	01	12.DocumentFillrequisitionform for different types of investigations for nose & paranasal sinuses diseases.	Formative

Table13:ThemeVII-Swelling Neck

Topic	Hours	Learning objectives	Assessment method
Examination of Neck Nodes	02	1. Perform systematic examination of all groups of neck nodes	OSCE
Examination of lump in the neck	01	2. Perform examination of lump in the neck in a systematic way.	OSCE
Surgery on pharyngeal abscess	01	3. Observe surgery on pharyngeal abscess & describe drainage of peritonsillar abscess	OSCE
Thyroid examination	01	4. Perform Thyroid Examination both anatomically & functionally	OSCE
Pharyngeal abscess surgery related instruments	01	5. Identify instruments used in drainage of pharyngeal abscess surgery	OSCE
Examination of parotid	01	6. Perform examination of parotid swelling	OSCE
Examination of thyroid	01	7. Perform examination of thyroid gland	OSCE

MIT: Mode of information transfer. E.g. lecture, SGD, DSL, Practical, skill lab etc etc.

MOHI-UD-DIN ISLAMIC MEDICAL COLLEGE MIRPUR

DEPARTMENT OF MEDICAL EDUCATION



OPHTHALMOLOGY

4TH YEAR MBBS

BLOCK: M2

MODULE CODE: MB4-M2-EYE-24



2. Learning Objectives

General Learning Outcomes

By the end of this module the students would be able to;

1. Describe the visual standards.
2. Define and classify blindness.
3. Describe the anatomy and physiology of visual pathway and different visual field defects.
4. Describe the basics and usage of optical coherence tomography (OCT), visual fields and ultrasonography in common eye disorders.
5. Differentiate different types of lid bumps and propose a management plan for it.
6. Discuss ptosis, ectropion and entropion and describe the treatment options.
7. Examine bulgy eyes and investigate different causes of it.
8. Describe the differential diagnosis of red eye.
9. Explain the pathophysiology, and management of different conjunctival inflammations.
10. Explain the pathophysiology, and management of different corneal inflammations.
11. Discuss the pathophysiology, and management of uveal inflammations.
12. Describe the aqueous humor dynamics and its role in glaucoma.
13. Enumerate different causes of gradual visual loss and propose their management plan.
14. Enumerate different causes of sudden visual loss (painful/painless) and propose their management plan.
15. Describe squint, its presentation and principles of management.
16. Enumerate different causes of double vision and propose their management plan.
17. Enumerate different causes of childhood blindness and propose their management plan.
18. Discuss the clinical importance of white pupil in children.
19. Define amblyopia, describe its causes and management.
20. Differentiate between different terms used in ocular trauma.
21. Propose the management plan of ocular injuries.

3. Specific learning objectives

Theme1:FoundationofOphthalmology		
Topic	Learningobjectives	Hour s
StandardsOf Vision and Blindness	1.Discuss visual standards and blindness according to WHO classification.	01
PupilReflexes andDrugs Used In CommonEyeCondi tions	2. Describe the normal and abnormal pupil reflexes. 3. Discussdrugsusedincommoneyediseases.	01
VisualPathwayandV isualField Defects	4. Describethevisual pathway. 5. Describethecommonvisualfield defects.	01
OpticalCoherence Tomography (OCT)andVisualfiel ds(VF)	6.DiscusstheusesofOCTandVFinophthalmology.	01
Fundus Fluorescein Angiography (FFA)and Ultrasonography	7.Discuss the uses of FFA and Ultrasonography in ophthalmology.	01
Optics&Eye	8.Discuss visual functions (visual acuity, color vision, contrast sensitivity,lightbrightness),Refraction,Pseudopha kia,Aphakia, and Anisometropia	01
Refractive Errors	9.Discuss pathophysiology and clinical presentation of myopia, hypermetropia,astigmatism and presbyopia	01
CorrectionofRefract iveErrors	10.Describemanagement ofmyopia, hypermetropia, astigmatism and presbyopia.	01
Theme2:Lidabnormalities&BulgingEyes		
Topic	Learningobjectives	Hour s
DifferentialDiagnosis OfLid Bumps	1.Discussoverviewofdifferentcausesoflidbumps.	01
Chalazion,Stye	2.Describe pathophysiology andmanagement of chalazion and stye.	01
TumorsofEyelids	3.Discuss different eyelid tumors and its pathogenesis.	01
ManagementofLid Bumps	4.Describe management plan of lid bumps.	02
Ptosis	5.Discuss causes of ptosis, assessment and their management.	01
Trichiasis,Entropion and Ectropion	6.DiscussTrichiasis,EntropionandEctropion,assess mentandtheir management.	01

Proptosis– Basics	7. Discuss the etiology, clinical features, investigation and management of proptosis in children and adults	01
Preseptal and Orbital Cellulitis	8. Discuss the etiology, clinical features, investigation and management of proptosis in children and adults. 9. Enumerate Differential diagnosis / causes of proptosis in children and adults.	01
Thyroid Eye disease (TED)	10. Discuss the etiology, clinical features, investigation and management of TED.	01
Myasthenia Gravis & Migraine	11. Discuss the etiology, clinical features, investigation, and management of Myasthenia Gravis. 12. Discuss the etiology, clinical features, investigation, and management of Migraine.	01
Theme 3: Red Eye		
Topic	Learning objectives	Hours
Red eye	1. Enumerate causes of red eye. 2. Describe pathophysiology and management of different conjunctival (Bacterial/Viral/Fungal/Allergic) inflammations.	02
Corneal Inflammations/Infections	3. Discuss the etiology, clinical features, investigation, and management of non-infectious corneal inflammations. 4. Discuss investigations for corneal ulcers.	01
Bacterial Keratitis	5. Discuss the etiology, clinical features, investigation, and management of different bacterial corneal ulcers.	01
Fungal, Viral & Acanthamoeba Keratitis	6. Discuss the etiology, clinical features, investigation, and management of different fungal, viral & acanthamoeba corneal ulcers.	02
Dacryocystitis	7. Discuss the etiology, clinical features, investigation, and management of congenital nasolacrimal duct obstruction. 8. Assess the time of probing in children. 9. Differentiate between acute, acute on chronic and chronic Dacryocystitis. 10. Discuss the etiology, clinical features, investigation, and management of Dacryocystitis.	01
Dry Eyes	11. Discuss the etiology, clinical features, investigation, and management of Dry Eyes with special emphasis on Vit. A deficiency and Sjogren's	01

	syndrome.	
Blepharitis	12. Discuss the etiology, clinical features, investigation, and management of blepharitis.	01
Pterygium, Pseudo-Pterygium, Episcleritis & Scleritis	13. Describe differences between Pterygium, Pseudo-ptyerygium, Episcleritis & Scleritis and their management.	01
Basic Concepts In Ocular Trauma	14. Discuss definitions, classification & clinical evaluation of ocular injuries and principles of management. 15. Discuss corneal and conjunctival foreign bodies and their treatment.	01
Open Globe Injury (OGI) / IOFB / Sympathetic Ophthalmia (SO)	16. Classify OGI. 17. Discuss the etiology, clinical features, investigation, and management of OGI and IOFB. 18. Discuss the etiology, clinical features, investigation, and management of SO.	01
Closed Globe Injury (CGI) / Orbital Floor Injury	19. Discuss the etiology, clinical features, investigation, and management of CGI. 20. Classify CGI.	01
Radiation, Thermal, Chemical Injuries	21. Discuss the etiology, clinical features, investigation, and management of radiation injury. 22. Discuss the etiology, clinical features, investigation, and management of thermal injury 23. Discuss the etiology, clinical features, investigation, and management of chemical injury.	01
Visual Rehabilitation	24. Discuss various options of visual rehabilitation after ocular trauma. 25. Discuss rehabilitation services for blind people in our setup.	01
Uveitis – Basics	26. Discuss Definitions, classifications, history & work up of uveitis.	01
Anterior & Posterior Uveitis	27. Discuss the etiology, clinical features, investigation, and management of Anterior uveitis. 28. Discuss the etiology, clinical features, investigation, and management of Posterior Uveitis.	01
Theme 4: Visual loss		
Topic	Learning objectives	Hours
Visual Loss & Intraocular Pressure (IOP)	1. Classify causes of visual loss in following order: 2. Visual Loss associated with Anterior segment. 3. Visual Loss associated with Posterior segment.	01

	4. Discuss Aqueous humor dynamics and its role in IOP. 5. Enumerate causes of gradual & sudden visual loss. 6. Define and Classify Glaucoma.	
Open angle glaucoma	7. Discuss the differences between POAG, NTG and OHT. 8. Discuss the etiology, clinical features, investigation, and management of POAG. 9. Discuss the etiology, clinical features, investigation, and management of NTG. 10. Discuss the etiology, clinical features, investigation, and management of OHT.	01
Primary Angle Closure Glaucoma (PACG)	11. Discuss the stages of PACG. 12. Discuss the etiology, clinical features, investigation, and management of Acute angle closure.	01
Neovascular Glaucoma & Lens Induced Glaucoma	13. Discuss the etiology, clinical features, investigation, and management of Neovascular glaucoma.	01
	14. Discuss the etiology, clinical features, investigation, and management of lens induced glaucoma.	
Treatment Options In Glaucoma	15. Enumerate different treatment options in glaucoma. 16. Discuss the indications of each treatment option.	01
Cataract	17. Define cataract. 18. Describe the types of Age-related cataract. 19. Describe the pathogenesis and complications of cataract. 20. Describe the management of cataract.	01
Cataract Surgery Complications	21. Discuss the etiology, clinical features, investigation, and management of Endophthalmitis. 22. Discuss the etiology, clinical features, investigation, and management of Panophthalmitis.	01
Corneal Ectasia, Dystrophy & Degeneration	23. Discuss the etiology, clinical features, investigation, and management of keratoconus. 24. Give overview of corneal dystrophies and degenerations.	01
Diabetic Eye Disease	25. Discuss the effects of diabetes on eye. 26. Discuss the etiology, clinical features, investigation, and management of Diabetic Eye Disease (Diabetic Retinopathy and maculopathy).	01
Hypertensive Retinopathy	27. Discuss the effects of hypertension on eye. 28. Discuss the etiology, clinical features, investigation, and management of Hypertensive Retinopathy.	01
Central Retinal Vein Occlusion (CRVO) A	29. Discuss the etiology, clinical features, investigation, and management of CRVO.	01

nd		
Central Retinal Artery Occlusion (CRAO)	30. Discuss the etiology, clinical features, investigation, and management of CRAO.	01
Retinal Detachment (RD)	31. Discuss the etiology, clinical features, investigation, and management of RD.	01
Choroidal Melanoma	32. Discuss the etiology, clinical features, investigation, and management of choroidal melanoma. 33. Describe the importance of this condition on mortality.	01
Night Blindness – Retinitis Pigmentosa, Vit. A Deficiency	34. Discuss the etiology, clinical features, investigation, and management of Retinitis pigmentosa. 35. Discuss the etiology, clinical features, investigation, and management of Vit. A deficiency.	01
Optic neuritis	36. Classify optic neuritis. 37. Discuss the etiology, clinical features, investigation, and management of optic neuritis.	01
Hereditary, Nutritional & Toxic Optic Neuropathies	38. Discuss the etiology, clinical features, investigation, and management of these optic neuropathies.	01
Papilledema	39. Describe the difference between papilledema and disc swelling. 40. Discuss the etiology, clinical features, investigation, and management of papilledema.	01
Theme 5: Childhood Blindness & Crossed Eyes		

Topic	Learning objectives	Hours
White pupil (leukocoria) and Retinoblastoma (RB)	1. Describe the importance of white pupil in children. 2. Differentiate different causes of white pupil in children. 3. Discuss investigations in white pupil. 4. Discuss the etiology, clinical features, investigation and management of RB.	01
Congenital Cataract	5. Define congenital cataract. 6. Describe the types of congenital cataracts. 7. Describe the pathogenesis and complications of congenital cataracts. 8. Describe the management of congenital cataracts.	01
Congenital Glaucoma	9. Discuss the etiology, clinical features, investigation and management of Congenital Glaucoma.	01
Amblyopia	10. Define Amblyopia. 11. Discuss the etiology, clinical features, investigation, and management of amblyopia.	01
Squint – Basics	12. Discuss definitions, clinical evaluation of squint and principles of management	01

Concomitant Squint Esotropia	13. Define concomitant squint.	01
	14. Discuss the etiology, clinical features, investigation, and management of esotropia.	
Exotropia	15. Discuss the etiology, clinical features, investigation, and management of exotropia.	01
Diplopia & Incomitant Squint	16. Discuss differential diagnosis/causes of diplopia. 17. Define incomitant squint. 18. Discuss the etiology, clinical features, investigation, and management of 3 rd nerve palsy. 19. Discuss the etiology, clinical features, investigation, and management of 4 th nerve palsy. 20. Discuss the etiology, clinical features, investigation, and management of 6 th nerve palsy.	01

Clinical Schedule

Theme1: Foundation of Ophthalmology			
Topic	Learning objectives	Assessment method	Hours
1. History Taking 2. Visual Acuity	- Take detailed history in ocular conditions - Check visual acuity.	OSCE	03 + 02
3. Pupil Examination	Perform pupillary examination.	OSCE	03
4. Visual Fields (Confrontation)	Perform visual fields examination by confrontation methods.	OSCE	03
5. Slit-Lamp Examination	Identify parts of slit-lamp	OSCE	01
6. Anterior Segment Examination	Examine anterior segment on slit lamp	OSCE	01
7. Direct Ophthalmoscopy	Perform direct ophthalmoscopy	OSCE	02
8. Retinoscopy	Identify trial lenses used in refraction.	OSCE	03
9. Indirect Ophthalmoscopy	Perform indirect ophthalmoscopy	OSCE	02
Investigations 10. OCT 11. Visual Fields 12. Biometry 13. B-Scan 14. FFA 15. Corneal Topography	Describe/interpret the results of: - OCT - Visual fields - Biometry - B-scan - FFA & Corneal topography	OSCE	03 + 02
Theme2: Lid Abnormalities & Bulging Eyes			
Topic	Learning objectives	Assessment method	Hours
16. Eversion of Upper Lids	Observe eversion of upper lids	OSCE	01
17. Ptosis Examination	Perform ptosis examination.	OSCE	03
18. Ptosis and Its Surgeries	Observe ptosis surgery	OSCE	03
19. Lid Abnormalities	Examine common lid abnormalities (Ectropion, Entropion, Chalazion, Sty))	OSCE	03

20.LidsSurgeryRelated Instruments	Identify instruments used in lids surgery	OSCE	03
21.LidReconstruction Procedures	Observe lid reconstruction procedures	OSCE	05
22.Proptosis	Observe proptosis	OSCE	03

Theme3:RedEye

Topic	Learning objectives	Assessment method	Hours
23.UseOfTopicalAnesthesiaand Staining	Perform topical anesthesia and staining.	OSCE	01
24.RemovalOfSuperficialForeign Bodies	Observe corneal foreign body removal.	OSCE	01
25.CornealScrapping	Observe corneal scrapping.	OSCE	02
26.Keratoplasty Surgery	Observe keratoplasty.	OSCE	03
27.LacrimalRegurgitation Test	Perform lacrimal regurgitation test.	OSCE	01
28.Dacryocystorhinostomy(DCR) Surgery&Its Instruments	Observe DCR surgery and identify instruments used	OSCE	03
29.OcularTrauma	- Observe first aid to Ocular trauma - Perform eye wash in chemical injury.	OSCE	03
30.GlobeRepair Surgery	Observe OGI surgery.	OSCE	03

Theme4:VisualLoss

Topic	Learning objectives	Assessment method	Hours
31. Normal Disc 32. Disc Abnormalities 33. Swollen Disc(S)	- Examine normal disc - Examine glaucomatous disc. - Examine swollen disc	OSCE	03
34. Detection Of Retinal Lesions 35. Retinal Vascular Diseases	- Detect common retinal conditions - Differentiate different retinal vascular conditions.	OSCE	03

36.RetinalDetachment	- IdentifyRD in pictures - ObserveRetinaldetachment surgery	OSCE	03
37. UseOfLasersInEye 38. IntravitrealInjections	Discuss - Useoflasersineye - Intravitrealinjections	OSCE	02
39.Tonometry	Observegoldmantonometer	OSCE	01
40.GlaucomaFiltration Surgery	ObserveGlaucoma filtration surgery	OSCE	03
Theme5:ChildhoodBlindness&CrossedEyes			
Topic	Learningobjectives	Assessment method	Hours
41.Congenital Glaucoma	Observecongenitalglaucoma examination (EUA)andsurgery	OSCE	03
42.Cataract(Adult and Ccongenital)	Detect cataract on ocular examination	OSCE	03
43.Cataractsurgery	Observe types ofAdult and Congenital cataract surgery	OSCE	03 + 03
44.ExtraocularMovements	Performextraocular movementsand squint examination	OSCE	03
45.SquintExamination	- Performcover/uncover/alternatecover tests - Identifythepatternofsquint(Esotropia, Exotropia)	OSCE	03
46.SquintSurgery	Observe squintsurgery	OSCE	03

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