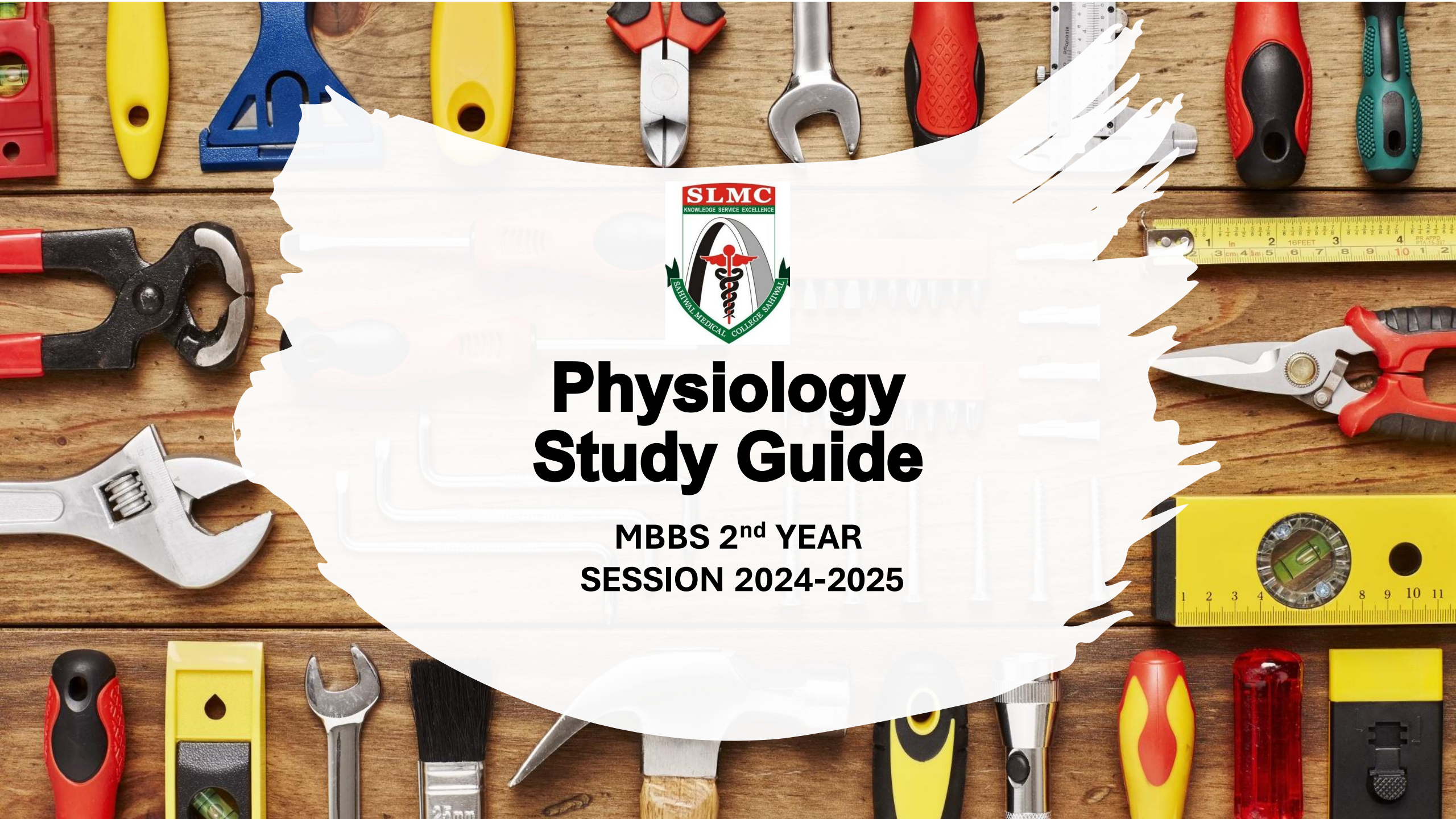

Physiology Study Guide

MBBS 2nd YEAR

SESSION 2024-2025

BLOCK NUMBER	MODULES
BLOCK 4	• GIT & NUTRITION – I • RENAL - I
BLOCK 5	• ENDOCRINOLOGY & REPRODUCTION – I • HEAD & NECK , SPECIAL SENSES
BLOCK 6	• NEUROSCIENCES – I • INFLAMMATION

BLOCK - 4

- BLOCK DURATION:**10** WEEKS
- Number of Modules: **2**

BLOCK MANAGEMENT TEAM	
HOD PHYSIOLOGY	Dr. Naima Shakeel
Assistant Professor	Dr. Nauman Aziz
Block Coordinator	Dr. Javeria Amjad
Team Members	Dr. Noshaba Nazir Dr. Nabeel Dr. Rabia

GIT & Nutrition - I

INTRODUCTION /RATIONALE	Gastrointestinal system is an integral part of human body which is primarily related to consumption, digestion and assimilation of food to provide nutrition and calories on regular basis to human body which are essential for basic functioning of each organ of human beings. We will study in detail regarding different parts of gastrointestinal system, their functional, embryological and histological anatomy, physiological and biochemical aspects of its functioning. Students will also be briefly introduced to clinical and pathological aspects, pharmacological interventions and preventive measures of common diseases related to the system.
MODULE OUTCOMES	? To describe the functional anatomy and physiology of different parts of gastrointestinal system and associated organs ? To describe the motility, secretary and digestive function of gastrointestinal system ? To comprehend concept of balanced diet and malnutrition

Renal Module

INTRODUCTION /RATIONALE	The renal module for second-year MBBS (Bachelor of Medicine, Bachelor of Surgery) students is a crucial component of the medical curriculum. This module is designed to provide students with a comprehensive understanding of the structure, function, and pathology of the kidneys, as well as the principles of renal physiology and the clinical management of and electrolyte balance, acid-base balance, and blood pressure. Understanding renal physiology is essential for comprehending various disease renal disorders. Here are some key rationales for including a renal module in the curriculum:
MODULE OUTCOMES	Identify role of renal system in maintaining blood pressure and acid base balance Enlist functions of kidney and pathologies related to them. Explain method of electrolyte balance and pathologies related to it. Interpret investigations done to diagnose abnormal structural and functional presentations.

Themes

- Oral cavity & Esophagus (O &E)
- Stomach
- Small intestine
- Large intestine (Cecum, Appendix, Colon, Rectum & Anal Canal)
- Liver & Biliary tree
- Pancreas & Spleen
- Nutrition
- Kidney
- Ureter
- Bladder
- Acid/base balance

Learning Outcomes

NORMAL FUNCTION			
THEORY			
CODE	MEDICAL PHYSIOLOGY	TOTAL HOURS = 20	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
GIT-P-001	Classify the components of enteric nervous system	Medical Physiology	General Principles of GIT Function - Motility, Nervous Control & Blood Flow
	Discuss the location and significance of myenteric plexus		
	Describe the Meissner's plexus		
	Differentiate between myenteric and Meissner's plexuses		
	Explain the mechanism of developing slow wave		
	Explain the mechanism of developing spike potential		
	Enlist the factors that depolarize & hyperpolarize the GIT membrane		
	Enlist the excitatory & inhibitory neurotransmitters of enteric nervous system		
	Explain the role of sympathetic & parasympathetic nervous system in controlling GIT function.		
	Enlist the gastrointestinal reflexes & explain the functions of these reflexes		

	Enlist the hormones acting on GIT, their stimuli, site of release and actions		
	Enumerate different types of movements that occur in GIT		
	Discuss the functions and control of GIT movements		
	Discuss the effect of gut activity and metabolic factors on GIT blood flow		
	Explain the nervous control of GIT blood flow		
GIT-P-002	Trace the reflex arc of mastication	Medical Physiology	Oral Cavity & Esophagus
	Explain the process and importance of chewing reflex		
	Enlist the stages of swallowing		
	Describe the mechanism of voluntary stage of swallowing		
	Trace the reflex arc of involuntary stage of swallowing		
	Enlist the steps involved in involuntary stage of swallowing	Medical Physiology	
	Explain the effect of swallowing on respiration	Medical Physiology	
	Discuss the mechanism of esophageal stage of swallowing	Medical Physiology	
	Enlist causes of dysphagia	Medical Physiology Integrates with Surgery	
	Explain the types and role of different peristalsis originating in esophagus	Medical Physiology	
	Discuss the role of Lower Esophageal Sphincter (Gastroesophageal)	Medical Physiology	
	Discuss the pathophysiology of achalasia & Megaesophagus	Medical Physiology	
	Enlist the features and treatment of achalasia	Medical Physiology	
GIT-P-003	Explain storage function of stomach	Medical Physiology	Stomach
	Describe the basic electrical rhythm of stomach wall	Medical Physiology	
	Explain the role of pyloric pump and pyloric sphincter in gastric emptying	Medical Physiology	

	Explain the factors that promote Stomach Emptying	Medical Physiology	
	Discuss the duodenal (nervous & hormonal) factors that inhibit Stomach emptying	Medical Physiology	
	Enlist the factors that initiate enterogastric inhibitory reflexes	Medical Physiology	
	Enumerate the causes, features, and pathophysiology of gastritis	Medical Physiology integrates with Medicine	
	Explain the physiological basis of each feature of gastritis	Medical Physiology integrates with Medicine	
	Recommend treatment of gastritis	Medical Physiology Integrates with Medicine	
	Enumerate the causes, features, and pathophysiology of peptic ulcer		
	Explain the physiological basis of each feature of peptic ulcer		
GIT-P-004	Enumerate and explain the hormones and movements of small intestine	Medical Physiology	Small Intestine
	Explain the term "peristaltic rush"		
	Explain the functions of ileocecal valve and sphincter		
	Enumerate the types of intestinal sprue	Medical Physiology Integrates with Medicine	
	Enlist the features of intestinal sprue		
	Explain the consequences of sprue on the body		
GIT-P-005	Enumerate the types of movements taking place in colon	Medical Physiology	Large Intestine
	Explain the mechanism of developing movements of colon and their control through Gastrocolic and Duodenocolic Reflexes	Medical Physiology	
	Enlist the defecation reflexes	Medical Physiology	
	Explain the mechanism of defecation reflex	Medical Physiology	
	Trace the reflex arc of defecation	Medical	

		Physiology	
	Name the other autonomic reflexes that affect bowel activity	Medical Physiology	
	Explain the pathophysiology of constipation	Medical Physiology Integrates with Medicine	
	Discuss the causes of diarrhea Describe the cause of Hirschsprung's disease integrate with Medicine	Medical Physiology	
GIT-P-006	Explain the functions of liver	Medical Physiology	Liver
	Differentiate between liver and gall bladder bile and the hormones acting on them	Medical Physiology	
	Enumerate the causes and composition of developing gall stones	Medical Physiology Integrate with Surgery	
GIT-P-007	Explain function and secretions of pancreas	Medical Physiology	Pancreas
	Enlist the causes and pathophysiology of acute and chronic pancreatitis	Integrate with Medicine	
	Enumerate the features of acute pancreatitis and explain the physiological basis of each feature of pancreatitis	Integrate with Medicine	
GIT-P-008	Describe the stages of vomiting act	Medical Physiology	Vomiting Reflex
	Trace the reflex arc of vomiting	Medical Physiology	
	Explain the role of chemoreceptor trigger zone for initiation of vomiting by drugs or by motion sickness	Medical Physiology	
GIT-P-009	Define Malnutrition	Integrated with Medicine Gastroenterology	Malnutrition
	Identify various causes of malnutrition		
	Identify the risk factors of malnutrition		
	Outline treatment strategies		
GIT-P-010	Define Acute Diarrhea		Acute & Chronic Diarrhea
	Define Chronic Diarrhea		

PRACTICAL

GIT-P-011	Demonstrate Cranial nerve V, IX & X testing	Physiology	Cranial nerve

NORMAL FUNCTION			
THEORY			
CODE	MEDICAL PHYSIOLOGY	TOTAL HOURS = 36	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
R-P-001	Describe major composition of intracellular and extracellular fluids	Physiology	Body fluid compartment
	Define Hypo and hypernatremia		
	Explain the causes of hypo & hypernatremia and their effects on Composition of body fluid compartments		
	Describe difference between iso-osmotic, hyper-osmotic, hypo-osmotic fluids		
R-P-002	Enumerate causes of Intracellular and extracellular edema	Integrate with Medicine	Edema
	Describe safety factors that prevent edema		
R-P-003	Explain the functions of the kidney	Physiology	Function
R-P-004	Describe the mechanism of micturition and its control		Micturition reflex

	Explain the role of higher center on micturition		
	Explain the physiological anatomy and innervation of bladder		
	Discuss the voluntary control of micturition		
R-P-005	Explain the causes, pathophysiology, and features of atonic bladder. Discuss the causes, pathophysiology, and features of automatic bladder. Write the causes, pathophysiology, and features of uninhibited neurogenic bladder	Integrate with Pathology	Abnormalities of micturition
R-P-006	Enlist the steps of urine formation	Physiology	Urine formation
	Explain the physiological anatomy and functions of glomerular capillary membrane		
	Discuss the composition of filtrate		
	Explain the minimal change nephropathy and increase permeability to plasma protein		
R-P-007	Define Glomerular Filtration Rate (GFR).	Physiology	Glomerular filtration
	Describe the determinants of GFR		
	Explain the factors affecting GFR		
	Discuss the hormones and autocoids that affect GFR		
	Explain mechanisms of autoregulation of GFR		
	Enlist the physiological and pathological factors that decrease GFR		
	Explain the effects of angiotensin II blocker on GFR during renal hypoperfusion		
R-P-008	Enumerate different types of transport along the kidney tubules for reabsorption	Physiology	Reabsorption
	Explain the reabsorption and secretion along different parts of the Nephron		
	Explain the regulation of tubular reabsorption		
	Discuss the forces / pressure and hormones that		

	Explain the reabsorption of water along different parts of nephron		
	Define obligatory and facultative reabsorption		
	Discuss the characteristics of late distal tubules and cortical collecting ducts		
	Discuss the characteristics of medullary collecting ducts		
R-P-009	Explain the use of clearance method to quantify kidney function	Physiology	Clearance method
R-P-010	Describe mechanism of re-absorption of sodium along different parts nephrons	Physiology	Transport maxmum
	Define and explain the term Transport maximum for the substances		
	Define filtered load for the substance		
	Justify the difference of transport maximum and renal threshold of glucose in renal tubules		
R-P-011	Explain the renal mechanisms for excreting Dilute urine	Physiology	Urine concentration and dilution
	Explain the mechanism for forming a concentrated urine		
	Discuss the role of urea in the process of counter current multiplier mechanism		
	Describe the countercurrent exchange in vasa Recta to preserve hyperosmolarity of renal medulla		
R-P-012	Define and explain the term obligatory urine volume. Define and explain free water clearance. Define Urine specific gravity.	Physiology	Obligatory urine volume
R-P-013	Enumerate different abnormalities of urinary concentrating ability	Physiology	Disorders of urine concentrating ability
R-P-014	Enumerate the types of Diabetes insipidus	Integrate with	Diabetes

	Enlist the features of diabetes insipidus	Medicine	Insipidus
	Explain the pathophysiology and treatment of central diabetes insipidus		
	Discuss the pathophysiology of nephrogenic diabetes insipidus		
R-P-015	Make the flow chart to show the Osmoreceptor-antidiuretic hormone (ADH) feedback mechanism for regulating extracellular fluid osmolarity in response to a water deficit.	Physiology	Osmoreceptor-ADH Feedback System
	Enlist the factors which increase and decrease the release of ADH		
R-P-016	Explain the mechanism of thirst	Physiology	Thirst
R-P-017	Enumerate the factors that can alter potassium distribution between intracellular and extracellular fluids		Renal regulation of potassium
	Discuss the process of secretion of potassium by renal tubules Explain the regulation of internal potassium distribution and potassium secretion		
R-P-018	Explain the control of extracellular fluid osmolarity and sodium concentration		Control of ECF osmolarity
R-P-019	Explain the integration of renal mechanism for control of Extracellular Fluid (ECF)		Control of ECF
	Explain the importance of pressure natriuresis and diuresis in maintaining body sodium and fluid balance		
R-P-020	Explain the renal handling of calcium concentration to regulate plasma calcium concentration		Renal regulation of calcium Renal regulation of phosphate
	Enumerate the factors that alter renal calcium		
	Enlist the factors that alter renal phosphate excretion		

R-P-021	Explain the nervous and hormonal factors that increase the effectiveness of renal body fluid feedback control	Physiology	Renal body fluid feedback control
R-P-022	Explain the conditions that cause large increase in blood volume and ECF volume Explain the conditions that cause large increase ECF volume but with normal blood volume		ECF and blood volume
R-P-023	Explain the renal handling of H^+ ion.		Acid base balance
R-P-024	Analyze the acid base disturbances on the basis of pH, HCO3 and CO2	Physiology	Acid base disturbance
	Explain the causes and compensation of metabolic acidosis		
	Explain the causes and compensation of metabolic alkalosis		
	Explain the causes and compensation of respiratory acidosis		
	Explain the causes and compensation of respiratory alkalosis		
	Explain the causes and compensation of mixed acid base disorder		
R-P-025	Define and explain anion gap	Physiology	Anion gap

PRACTICAL

CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 02+10=12	
		DISCIPLINE	TOPIC
R-P-026	Perform a complete examination of the urine sample URS-10 (using urine reagent-10) and interpret its report	Physiology Practical	Interpretation of report
	Determine the specific gravity of urine		

BLOCK - 5

- BLOCK DURATION: **12** WEEKS
- Number of Modules: 2

BLOCK MANAGEMENT TEAM	
HOD PHYSIOLOGY	Dr. Naima Shakeel
Assistant Professor	Dr. Nauman Aziz
Block Coordinator	Dr. Javeria Amjad
Team Members	Dr. Noshaba Nazir Dr. Nabeel Dr. Rabia

ENDOCRINOLOGY & REPRODUCTION - I

INTRODUCTION /RATIONALE	Endocrinal system is a unique system consists of glands which control body systems through its secretions known as hormones. These chemical compounds known as hormones play an integral role in maintaining cell activity and organ functions through biochemical signals. Human reproduction is controlled by hormones released by gonads. Changes in hormonal levels can affect human fertility. In this module the anatomy and physiology of the endocrine organs, functional biochemistry of the hormones secreted will be taught in integrated fashion with reference to common disease occurring in Pakistani community.
MODULE OUTCOMES	Explain Development, structure, hormones and regulation of pituitary gland, thyroid gland, parathyroid gland, endocrine pancreas, adrenal glands, testes and ovaries. Describe the etiology, pathophysiology, relevant clinical features and common investigations of disorders of these glands.

SPECIAL SENSES

INTRODUCTION /RATIONALE	The second year MBBS students will have a detailed understanding of the anatomy, physiology, and clinical aspects of Special Senses. This knowledge is critical for the diagnosis and treatment of a wide range of diseases associated with these senses. This module covers the important structures and functions of the eye, ear, tongue, nose, as well as the pathologies and treatments associated with them. This includes common conditions such as cataracts, glaucoma, aging changes, hearing loss, tinnitus, otitis media, olfactory disorders. Additionally, the special senses module includes training in relevant clinical examination skills, such as ophthalmoscopy, otoscopy, rhinoscopy, and vestibular testing. These skills are essential for identifying and diagnosing special senses conditions, and for monitoring the effectiveness of treatments.
MODULE OUTCOMES	• Integrate the anatomical and pathophysiological aspects of the eye, ear, nose, tongue, vestibular system and the neural pathways, receptors involved in their function with the clinical aspects. • Develop the ability to identify and diagnose common pathologies such as cataracts, glaucoma, age-related degeneration, hearing loss, impacted wax, otitis media and olfactory disorders. • Demonstrate the clinical examination (simulation) skills necessary for the assessment of special senses, such as ophthalmoscopy, otoscopy, rhinoscopy, and vestibular testing.

Themes

- Introduction to Endocrinology, Mechanism of action, Second messenger, measurements
- Pituitary gland
- Thyroid Gland & Parathyroid Gland
- Adrenal glands
- Pancreatic Hormones
- Reproduction & Genetics
- Vision
- Hearing
- Taste
- Olfaction

Learning Outcomes

NORMAL FUNCTION			
THEORY			
CODE	MEDICAL PHYSIOLOGY	TOTAL HOURS = 59	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
EnR-P-001	Define different chemical messengers. Enlist endocrine organs and hormones of the body. Enlist the hormones on the basis of chemical nature. Discuss the feedback control of hormone secretion. Explain the up and down regulation of receptors. Enlist the location of hormone receptors.	Biochemistry	Introduction to Endocrinology

	Explain the mechanism of intracellular signaling after hormone receptor activation. Name the hormones that use enzyme-linked hormone receptors signaling. Explain the mechanism of enzyme linked receptors. Enlist second messenger mechanisms for mediating intracellular hormonal functions. Define second messenger system. Explain the adenylyl cyclase– cAMP Second Messenger System. Enumerate the hormones that use the adenylyl cyclase–cAMP Second Messenger System. Explain The cell membrane phospholipid second messenger System. Enumerate the hormones that use cell membrane phospholipid second messenger system. Explain the mechanism of calcium Calmodulin system.		
EnR-P-001	Name the hormones/ factors of hypothalamus. Name the hormones of anterior pituitary. Name the hormones of posterior pituitary. Describe the functional relationship between hypothalamus, anterior and posterior pituitary gland. Explain the significance of hypothalamic- hypophysial portal circulation. Explain the hypothalamic pituitary tract. Explain the mechanism of action of growth hormone. Explain the actions of Growth hormone on Carbohydrate. Discuss the actions of Growth hormone on protein metabolism. Describe the actions of Growth hormone on fat metabolism.	Physiology	Hypothalamus / Pituitary Gland

	Explain the effect of growth hormone on skeletal growth and age. Explain the significance of somatomedins in mediating the actions of growth hormone. Describe the regulation of Growth Hormone. Describe the causes and features and treatment of panhypopituitarism in adults and childhood. Define Sheehan's syndrome. Enlist the types of dwarfism according to cause. Explain the pathophysiology and features of gigantism and acromegaly. Explain the mechanism of action of antidiuretic hormone. Discuss the actions of antidiuretic hormone. Regulation of antidiuretic hormone production. Elaborate the mechanism of action of oxytocin. Discuss the actions of oxytocin.		
EnR-P-002	Discuss the transport of thyroid hormone Discuss the mechanism of action of thyroid hormone Explain the actions of thyroid hormone on carbohydrate metabolism Discuss the actions of thyroid hormone on protein metabolism Explain the actions of thyroid hormones on fat metabolism Explain the non-metabolic functions of thyroid hormone Explain the regulation of thyroid hormone Enumerate antithyroid substances and explain their mechanism of action Enumerate the causes of hyperthyroidism	Physiology	Thyroid gland
	Explain the features, pathophysiology and treatment of thyrotoxicosis/ grave's disease Explain the thyroid function test to investigate hypo and		

	Enlist the causes of hypothyroidism Explain the pathophysiology of Hashimoto hypothyroidism Discuss the features and pathophysiology and treatment of myxedema Explain the pathophysiology and features of endemic colloid goiter Discuss the pathophysiology and features of nontoxic colloid goiter Enlist the causes of cretinism Discuss the features and pathophysiology of cretinism		
EnR-P-003	Name the hormones of adrenal cortex. Explain the physiological anatomy of adrenal cortex. Explain the cellular mechanism of Aldosterone action. Explain the effects of mineralocorticoid hormone. Discuss the regulation of aldosterone secretion. Discuss the metabolic and non-metabolic functions of cortisol Explain the interconversion of active cortisol and inactive cortisone by the 2, 11 beta hydroxysteroid dehydrogenase isoform. Explain the mechanism for regulation of glucocorticoid secretion by hypothalamus and pituitary Name adrenal androgens and enlist the functions of adrenal androgens. Discuss the causes, features, pathophysiology and treatment of hypoadrenalism (Addison's disease). Enlist the causes of hyperadrenalism. Explain the features, pathophysiology and treatment of Cushing's syndrome. Differentiate between Cushing's syndrome and Cushing's disease	Physiology & Pathology	Adreno cortical hormones

	Explain the clinical importance of dexamethasone suppression test to diagnose Cushing's syndrome. Discuss the features, pathophysiology and treatment of Conn's syndrome. Enlist the cause, features and pathophysiology of congenital adrenal hyperplasia/ Androgenital syndrome.		
EnR-P-004	Enumerate the types of pancreatic cells with their hormones. Explain the mechanism of action of insulin. Discuss the synthesis and mechanism of release of insulin. Explain the effects of insulin on carbohydrate, protein and lipid metabolism. Enlist the actions of insulin on liver, adipose tissue and skeletal muscle. Enlist the factors and conditions that increase or decrease insulin secretion.	Physiology	Pancreatic hormones
	Explain the role of insulin (and other hormones) in "switching" between carbohydrate and lipid metabolism. Discuss the effects of glucagon on carbohydrate and lipid metabolism. Explain the factors that regulate the secretion of glucagon. Explain the 24-hour regulation of glucose. Discuss the importance of blood glucose regulation. Explain the actions of somatostatin.		
EnR-P-005	Enlist the types of diabetes mellitus Explain the causes of Type I and type II diabetes mellitus Discuss the features and pathophysiology of diabetes mellitus Explain the role of insulin resistance, obesity and metabolic syndrome in developing type II diabetes	Physiology	Abnormalities of Glucose regulation

	Explain how to diagnose the diabetes mellitus Explain the treatment of type I and type II diabetes mellitus Explain the features, cause of insulinoma		
EnR-P-006	Discuss the physiological anatomy of parathyroid gland Explain the rapid and slow mechanism of resorption of bone by parathyroid hormone Discuss the actions of parathyroid Explain the control of parathyroid secretion by calcium ion concentration	Physiology	Parathyroid hormones
EnR-P-007	Discuss the effects of Vitamin D Discuss the effects of calcitonin on calcium Discuss the regulation of calcium (the first & second line of defense) Explain the causes and features of hypoparathyroidism Explain the causes and the features of primary and secondary hyperparathyroidism Enumerate the causes and features of osteoporosis	Physiology	Regulation of calcium in body
EnR-P-008	Enlist the functions of adrenal medullary hormones and explain pheochromocytoma	Physiology	Adreno medullary hormones
EnR-P-009	Describe the hormonal factors that affect spermatogenesis Explain the maturation and storage of sperm in epididymis Discuss the structure and physiology of a mature sperm Describe the composition of semen Discuss the functions of prostate & seminal vesicles in the formation of semen Explain the phenomenon of capacitation and its significance Describe the acrosome Reaction and its significance Discuss the role of pineal gland in reproduction	Physiology	Spermatogenesis Capacitation & Acrosome reaction
EnR-P-010	Discuss the site of secretion of testosterone	Physiology	Testosterone

	Name the active form of testosterone Explain the production of estrogen in males Describe the basic intracellular mechanism of action of testosterone		
	Explain the functions of testosterone in intrauterine life and after birth Discuss the regulation of male sexual functions by hormones from the hypothalamus and anterior pituitary gland		
EnR-P-011	Enumerate and explain the phases of ovarian cycle along with the hormonal changes Explain the postulated mechanism of ovulation Explain the formation and involution of Corpus luteum Endometrial cycle Explain the structural and hormonal changes of endometrial cycle Explain the regulation of female monthly cycle Discuss the role of progesterone on female sexual organs	Physiology	Menstrual cycle
EnR-P-012	Enumerate the ovarian hormones Discuss the synthesis of estrogen and progesterone Describe the interaction of follicular theca and granulosa cells for production of estrogens with the help of a diagram Explain the functions of the estrogens on different organs Discuss the role of progesterone on female sexual organs	Physiology	Female sexual hormones
EnR-P-013	Explain the physiological basis of puberty, menarche Define menopause Explain the cause of menopause Discuss the physiological changes in the function of the body at the time of menopause	Physiology	Puberty, menarche & menopause
EnR-P-014	Explain the non-hormonal functions of placenta	Physiology	Normal Pregnancy

	Explain the hormonal factors in pregnancy/ hormones of placenta Explain the changes in non- placental hormones during pregnancy Response of the mother's body to pregnancy Explain the mechanical and hormonal factors that increase uterine contractility during parturition		
EnR-P-015	Explain the physiology of lactation Discuss the actions of prolactin Justify the suppression of ejection of milk during pregnancy Discuss the physiological basis of suppression of the female ovarian cycles in nursing mothers for many months after delivery	Physiology	Lactation

PRACTICAL

EnR-p-016	Perform Pregnancy test	Physiology	Pregnancy test

NORMAL FUNCTION			
THEORY			
CODE	MEDICAL PHYSIOLOGY	TOTAL HOURS = 30	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
HNSS-P-001	Define and describe the visual acuity	Physiology	Visual Acquity
	Define Emmetropia	Physiology	
	Enlist the errors of refraction	Physiology	
	Explain the cause, features, physiological basis, and correction of Hyperopia	Physiology	
	Explain the cause, features, physiological basis, and correction of myopia	Physiology	
	Explain the cause, features, physiological basis, and correction of astigmatism	Physiology	
	Describe the pathophysiology and treatment of cataract	Integrate with Ophthalmology	
HNSS-P-002	Interpret common treatment modalities for Refractive errors	Physiology	Refractive Errors
HNSS-P-003	Describe the mechanism of formation and outflow of aqueous humor	Physiology	Fluid systems of the Eye
	Describe normal value of intraocular pressure and its regulation	Physiology	

	Describe the method for measuring the intraocular pressure	Integrate with Ophthalmology	
	Describe the causes and features and pathophysiology of glaucoma	Physiology	
HNSS-P-004	Discuss the clinical features of Open Angle and Angle Closure Glaucoma	Physiology	Glaucoma
HNSS-P-005	Describe the physiological anatomy and function of structural elements of retina	Physiology	Retina
	Enlist different layers of retina	Physiology	
	Explain the significance of melanin pigment in retina	Physiology	
	Describe macula and foveal region of retina and their significance	Physiology	
	Describe the structure of rods and cones	Physiology	
	Comment on the location of optic disc and its significance	Physiology	
	Describe the cause, features, and treatment of retinal detachment	Physiology	
	Enlist the current investigations for Retinal Diseases	Integrate with Ophthalmology	
HNSS-P-006	Describe the rhodopsin-retinal visual cycle	Physiology	Photochemistry of vision
	Describe the mechanism of excitation of rods/ rods receptor potential	Physiology	
	Describe the causes and treatment of night blindness	Physiology	
HNSS-P-007	Define and describe different mechanisms of light adaptation	Physiology	Adaptation
	Define and describe different mechanisms of dark adaptation	Physiology	
	Enumerate the diseases leading to Night Blindness and retinal detachment	Integrate with Ophthalmology	
HNSS-P-	Explain the tri color mechanism of color	Physiology	Color vision

	Define term protanopes, deuteranopes, tritanopes	Physiology	
	Enlist the types of color blindness and their causes	Physiology	
	Enlist clinical features of Color vision deficiencies	Integrate with Ophthalmology	
HNSS-P-009	Trace the visual pathway	Physiology	Visual Pathways
	Enlist and describe the abnormalities of visual pathway & visual field		
	Explain the effect of removal of primary visual cortex		
HNSS-P-010	Define the physiological blind spot and describe its location	Physiology	Field of vision
	Define scotoma/ pathological blind spot and enlist causes	Physiology	
HNSS-P-011	Illustrate the abnormalities of field of vision	Integrate with Ophthalmology	Visual fields
HNSS-P-012	Describe the muscular and neural control of eye movements	Physiology	Eye movements
HNSS-P-013	Define and enlist the types of Strabismus	Integrate with Ophthalmology	Strabismus
HNSS-P-014	Explain the mechanism of accommodation	Physiology	Accommodation
	Enlist the components of near response in accommodation	Physiology	
	Describe the neural pathway for accommodation reflex	Physiology	
	Describe the regulation of accommodation	Physiology	
	Enlist the clinical features of Presbyopia	Integrate with Ophthalmology	
HNSS-P-015	Trace the neural pathway for pupillary light reflex	Physiology	Pupillary light reflex
	Explain the pupillary light reflexes or reactions in CNS diseases	Physiology	
	Describe the cause and features of Horner syndrome	Physiology	
	Illustrate the differential diagnosis of Anisocoria	Integrate with	

HNSS-P-016	Describe the physiological anatomy of outer and middle ear	Physiology	Sense of hearing
	Enlist the functions of middle ear	Physiology	
	Discuss clinical features and treatment of impacted wax	Integrate Otorhinolaryngology	
	Define causes and clinical features of Otomycosis	Integrate Otorhinolaryngology	
	Describe the mechanism of impedance matching and its significance	Physiology	
	Describe the mechanism of attenuation reflex and its significance	Physiology	
HNSS-P-017	Describe the physiological anatomy of inner ear	Physiology	Inner Ear/ Cochlea
	Describe the mechanism of transmission of sound waves in cochlea	Physiology	
HNSS-P-018	Describe the physiological anatomy and function of organ of Corti	Physiology	Organ of Corti
	Describe the mechanism of generation of endo-cochlear potential and its significance	Physiology	
HNSS-P-019	Write down the normal range of frequency for hearing	Physiology	Determination of sound frequency
	Describe the role of place principle in determination of sound frequency	Physiology	
	Describe the role of volleys principle in determination of sound frequency	Physiology	
HNSS-P-020	Trace the normal auditory nervous pathway	Physiology	Auditory pathway
	Describe the types of deafness	Physiology	
	Discuss the clinical features and investigations of Congenital and Acquired hearing loss	Integrate with Otorhinolaryngology	
HNSS-P-021	Enlist the primary taste sensations	Physiology	Sense of Taste
	Define and explain the term taste blindness	Physiology	

	Describe the physiological anatomy and location of taste buds	Physiology	
HNSS-P-022	Describe the mechanism of stimulation of taste buds/ receptor potential	Physiology	Excitation of Taste buds
	Trace the pathway of taste sensation	Physiology	
HNSS-P-023	Define and explain the terms: Ageusia, Hypergeusia, Hypogeusia and dysgeusia	Physiology	Abnormalities of Taste sensations
	Describe the senile changes in taste buds		
HNSS-P-024	Explain the terms: Taste preference and taste aversion	Physiology	Taste preference and aversion
HNSS-P-025	Enlist the primary sensations of smell	Physiology	Sense of smell
	Describe the physiological anatomy and location of olfactory membrane	Physiology	
HNSS-P-026	Enlist the causes and clinical features of Rhinitis	Integrate with Otorhinolaryngology	Rhinitis
	Differentiate between viral and allergic Rhinitis	Integrate with Otorhinolaryngology	

PRACTICAL

CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 16+05=21	
		DISCIPLINE	TOPIC
HNSS-P-027	Examine the Second, Third, Fourth & Sixth Cranial Nerves	Physiology	Cranial Nerves
HNSS-P-028	Examination of Light Reflex		Light reflex
HNSS-P-029	Determine the Visual Acuity for Far and Near vision		vision
HNSS-P-030	Perform Ophthalmoscopy		ophthalmoscopy
HNSS-P-031	Examine Field of Vision and interpretation of visual field plotted	Physiology	Visual field
HNSS-P-032	Examine Color Vision		Color vision
HNSS-P-033	Perform Tuning fork test and audiometry, interpret the report		Ear

BLOCK - 6

- BLOCK DURATION: **08** WEEKS
- Number of Modules: 2

BLOCK MANAGEMENT TEAM	
HOD PHYSIOLOGY	Dr. Naima Shakeel
Assistant Professor	Dr. Nauman Aziz
Block Coordinator	Dr. Javeria Amjad
Team Members	Dr. Noshaba Nazir Dr. Nabeel Dr. Rabia

INTRODUCTION /RATIONALE	The neurosciences module is crucial as understanding the brain and nervous system is essential for diagnosing and treating a wide range of neurological and psychiatric conditions. This includes conditions such as Alzheimer's disease, Parkinson's disease, epilepsy, migraines, traumatic brain injuries, depression, schizophrenia, and autism. By studying neurosciences, medical students will gain the knowledge and skills necessary to accurately diagnose and effectively treat these conditions.
MODULE OUTCOMES	• Discuss the physiology of Autonomic Nervous System (ANS), motor and sensory system. • Explain the pathophysiology of common diseases pertaining to the nervous system. • Explain a basic management and prevention plan for common neurological disorders.

Themes

- Neurons/ nerve fibers and receptor
- Cerebrum
- Spinal cord and tracks
- Cerebellum and brainstem, basal ganglia
- Autonomic Nervous System (ANS)

Learning Outcomes

NORMAL FUNCTION			
THEORY			
CODE	MEDICAL PHYSIOLOGY	TOTAL HOURS = 60	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
NS-P-001	Describe the general organization of nervous system	Medical Physiology	Organization of Nervous System, Neurons and Synapses
	Classify synapses		
	Explain physiological anatomy of synapses		
	Describe the properties of synaptic transmission		
	Classify the substances that act as neurotransmitters		
	Classify all sensory receptors in the body		
	Enumerate the properties of receptors		
	Explain the mechanism of adaptation of receptors		
	Enlist the rapid adapting mechanism of receptors		
NS-P-002	Explain the properties of receptors		Nerve fibers
	Explain the general classification of nerve fibers		
	Explain the numerical classification of nerve fibers		
	Explain Gasser classification of nerve fibers		
	Explain summation and its types		
NS-P-003	Describe the sensory areas of brain		Sensory areas of the brain
	Enlist Brodmann number of sensory areas		
	Describe the effects produced by damage to each sensory area of brain		
	Describe the pathophysiology and features of personal neglect syndrome		
NS-P-004	Classify and explain somatic sensations	Medical Physiology	Somatic sensations
NS-P-005	Enumerate the ascending tracts/Pathways		Ascending Tracts/ pathways
NS-P-006	Name the sensations carried by Dorsal column	Medical	Anterolateral

	Trace the pathway of DCMLS		
NS-P-007	Classify pain		Pain
	Differentiate between slow pain and fast pain		
	Describe the analgesia system in brain and spinal cord		
	Describe the cause and features of Brown Sequard Syndrome		
NS-P-008	Describe the Physiological anatomy of spinal cord	Medical Physiology	Spinal cord
	Name the anterior motor neurons and their location		
	Explain the Renshaw cells feedback		
	Classify the spinal cord reflexes according to number of synapses		
NS-P-009	Describe the structure & functions of Muscle spindle		Muscle Spindle and stretch reflex
	Trace the reflex arc of stretch reflex		
	Discuss the clinical significance of stretch reflex		
NS-P-110	Define tone and how it is maintained		Tone
NS-P-011	Trace the reflex arc of Golgi Tendon Organ GTO, Golgi tendon reflex Explain the importance of Golgi tendon reflex		GTO
NS-P-012	Name the motor areas of brain		Motor areas of the brain
	Enlist Brodmann number of motor areas of brain Explain the features produced due to damage to the motor areas		
NS-P-013	Enlist the functions of brain stem	Medical Physiology	Brainstem
NS-P-014	Enumerate the descending tracts		Descending tracts
	Describe the functions of Pyramidal tract		
	Describe the effect of lesions in motor cortex of brain or pyramidal tract		

NS-P-015	Discuss the location of upper and lower motor neuron		Location of motor neurons
	Explain the features of upper motor neuron lesion		
	Explain the features of lower motor neuron lesions		
NS-P-016	Define spinal shock		Spinal shock and hemi section
	Enumerate and explain the stages of spinal shock		
	Describe the features of hemi section of spinal cord (at the level, above the level, below the level)		
NS-P-017	Name the functional parts of cerebellum		Cerebellum
	Explain the functions of spinocerebellum		
	Describe the functions of cerebro cerebellum		
	Discuss the functions of vestibule cerebellum		
	Explain the clinical features of cerebellar disease		
NS-P-018	Name the components of Basal ganglia	Medical Physiology	Basal Ganglia
	EXPLAIN the putamen and caudate circuits		
	Enlist the neurotransmitters in basal ganglia and enlist the functions of basal ganglia		
	Enumerate and explain the clinical abnormalities of putamen circuit		
	Explain the pathophysiology and features of Huntington's disease		
	Explain the types of rigidity		
	Differentiate spasticity and rigidity		
	Define decerebrate rigidity		
NS-P-019	Enumerate the components of vestibular Apparatus	Medical Physiology	Vestibular apparatus
	Name the sensory organs of vestibular apparatus		
	Describe the role of vestibular Apparatus in maintenance of linear and angular equilibrium		
NS-P-020	Enlist the components of limbic system		Limbic system
	Describe the functions of amygdala		

	Explain the effects of bilateral ablation of the amygdala—The Klüver-Bucy Syndrome		
	Explain the functions of hippocampus		
	Explain the functions of Hypothalamus		
	Explain Functions of Thalamus		
	Discuss the Thalamic syndrome		
NS-P-021	define brain stem reticular formation (BRF), name the neurotransmitters of BRF, enlist functions of BRF, differentiate between the functions of Pontine and medullary reticular Formation	Medical Physiology	Brain stem reticular formation
NS-P-022	Enumerate and discuss the physiological basis of Electroencephalogram EEG waves	Medical Physiology	EEG
NS-P-023	Explain the types of sleep		Sleep
	Discuss the stages of slow wave sleep		
	Explain the changes in EEG during sleep wake cycle		
	Enumerate the areas and hormones/ neurotransmitters involved in sleep		
	Describe sleep disorders (narcolepsy, cataplexy, insomnia, somnolence, somnambulism, bruxism, nocturnal enuresis and sleep apnea)		
NS-P-024	Enumerate different types of epilepsy		Epilepsy
	Explain the features and physiological basis and EEG waves in different types of epilepsy		
NS-P-025	Define memory		Memory
	Classify memory on the basis of duration and information stored		
	Explain the Molecular Mechanism of Intermediate Memory		
	Enumerate the structural changes of long-term memory		
	Explain the higher intellectual functions of prefrontal	Medical	

	Explain the mechanism of consolidation of memory		
	Explain retrograde and anterograde amnesia		
	Explain the physiological basis and features of Alzheimer's disease		
NS-P-026	Enlist the areas of speech		Speech
	Explain the functions of motor and sensory areas of speech		
	Trace and explain the pathway of written and heard speech		
	Enlist the abnormalities of speech		
	Explain the features of motor aphasia		
	Elaborate the features of sensory aphasia		
	Define dyslexia, alexia, agraphia		
NS-P-027	Discuss Components of Autonomic nervous system	Medical Physiology	ANS
	Explain the physiological anatomy of sympathetic and parasympathetic nervous system		
	Describe the types of adrenergic and cholinergic receptors		
	Explain the effects of sympathetic and parasympathetic on various organs/ system of body		

PRACTICAL

NS-P-028	Examine the Sensory System	Physiology Practical	Sensory system
NS-P-029	Examine the Superficial Reflexes		Superficial Reflexes
NS-P-030	Examine the Deep Reflexes		Deep Reflexes
NS-P-031	Demonstrate Cerebellar Function Test		Cerebellar Tests
NS-P-032	Demonstrate the testing of Cranial Nerve (CN) VII		CN VII
NS-P-033	Demonstrate the Testing of Cranial Nerves (XI, XII)		CN X, XI, XII
NS-P-034	Examine the Motor system		Motor system

Learning Resources

- Textbook of Medical Physiology by Guyton and Hall (14th edition).
- Human Physiology: From Cells to Systems by L Sherwood (9th-edition).
- Medical Physiology by Ganong (25th-edition).
- Human Physiology by Dee Unglaub Silverthorn (7th-edition).
- Essential of Medical Physiology by Jaypee (6th edition).

TIMETABLES

SAHIWAL MEDICAL COLLEGE SAHIWAL
TIMETABLE FOR 2nd YEAR MBBS (S-13)
BLOCK - 4
(GIT & NUTRITION-I MODULE – 6 Weeks)
11th March till 30th April 2024

DAYS	08:00 to 11:30			11:30 to 12:30	12:30 to 01:30	1:30 to 02:00
Monday	**(Ward Rounds)** ***CSF*** Clinical Skills Foundation			PERLs Lecture	Behavioral Sciences Lecture	SDL Anatomy
	08:00 to 09:30	**09:30 to 10:30**	**10:30 to 11:00**	**11:00 to 12:00**	**12:00 to 01:00**	**01:00 to 02:00**
Tuesday	**SGD** Physiology	Physiology Lecture	**B R E A K**	Anatomy Lecture	Biochemistry Lecture	SDL Biochemistry
Wednesday	**SGD** Anatomy	Physiology Lecture		Anatomy Lecture	Community Medicine Lecture	SDL Physiology
Thursday	**Practical** C: Anatomy A: Biochemistry B: Physiology	Biochemistry Lecture		Anatomy Lecture	Pathology Lecture	Holy Quran (Oneness of Allah)
Friday	A: Anatomy B: Biochemistry C: Physiology	Biochemistry Lecture		Anatomy Lecture	SDL Anatomy	Jumma Prayers
Saturday	B: Anatomy C: Biochemistry A: Physiology	Biochemistry Lecture		Anatomy Lecture	Pharmacology Lecture	Pakistan Studies

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SAHIWAL MEDICAL COLLEGE SAHIWAL

TIMETABLE FOR 2nd YEAR MBBS (S-13)

BLOCK - 4

(RENAL-I MODULE – 4 Weeks)

6th May till 1st June 2024

DAYS	08:00 to 11:30			11:30 to 12:15	12:15 to 01:00	1:00 to 02:00
Monday	**(Ward Rounds)** ***CSF*** Clinical Skills Foundation			Behavioral Sciences Lecture	PERLs Lecture	SDL Anatomy
	08:00 to 09:30	**09:30 to 10:30**	**10:30 to 11:00**	**11:00 to 12:00**	**12:00 to 01:00**	**01:00 to 02:00**
Tuesday	**SGD** Physiology	Physiology Lecture	**B R E A K**	Biochemistry Lecture	Anatomy Lecture	Pharmacology Lecture
Wednesday	**SGD** Anatomy	Physiology Lecture		Biochemistry Lecture	Anatomy Lecture	SDL Physiology
Thursday	**Practical** C: Anatomy A: Biochemistry B: Physiology	**09:30 to 10:15** Physiology Lecture	**10:15 to 11:00** Holy Quran (Oneness of Allah)	Anatomy Lecture	Biochemistry Lecture	SDL Biochemistry
Friday	A: Anatomy B: Biochemistry C: Physiology	Physiology Lecture	**10:30 to 11:15** Biochemistry Lecture	**11:15 to 12:15** Anatomy Lecture	Jumma Prayers	
Saturday	B: Anatomy C: Biochemistry A: Physiology	Biochemistry Lecture	**10:30 to 11:00** **BREAK**	Community Medicine Lecture	Pathology Lecture	Pakistan Studies

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SAHIWAL MEDICAL COLLEGE SAHIWAL

TIMETABLE FOR 2nd YEAR MBBS (S-13)

BLOCK - 5

(*ENDOCRINOLOGY & REPRODUCTION-1* – Seven Weeks)

29th July till 14th September 2024

DAYS	08:00 to 11:30			11:30 to 12:15	12:15 to 02:00	
Monday	**(Ward Rounds)** ***CSF*** Clinical Skills Foundation			Behavioral Sciences Lecture	**SGD** Physiology	
	08:00 to 09:00	**09:00 to 10:00**	**10:30 to 11:00**	**11:00 to 12:00**	**12:00 to 01:00**	**01:00 to 02:00**
Tuesday	Anatomy Lecture	PERLs Lecture	**B R E A K**	Biochemistry Lecture	Anatomy Lecture	Pharmacology Lecture
Wednesday	**08:00 to 09:30**	**09:30 to 10:30**		Biochemistry Lecture	Anatomy Lecture	SDL Physiology
	SGD Anatomy	Physiology Lecture				
Thursday	**Practical** C: Anatomy A: Biochemistry B: Physiology	**09:30 to 10:15** Physiology Lecture	**10:15 to 11:00** Holy Quran (Oneness of Allah)	Anatomy Lecture	Biochemistry Lecture	SDL Biochemistry
Friday	A: Anatomy B: Biochemistry C: Physiology	Physiology Lecture	**10:30 to 11:15** Biochemistry Lecture	**11:15 to 12:15** Anatomy Lecture	Jumma Prayers	
Saturday	B: Anatomy C: Biochemistry A: Physiology	Biochemistry Lecture	**10:30 to 11:00** **BREAK**	Community Medicine Lecture	Pathology Lecture	Pakistan Studies

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SAHIWAL MEDICAL COLLEGE SAHIWAL

TIMETABLE FOR 2nd YEAR MBBS (S-13)

BLOCK - 6

(NEUROSCIENCES-I – Seven Weeks)

21st October till 9th December 2024

Days	08:00 to 09:30	09:30 to 10:30	10:30 to 11:00	11:00 to 12:00	12:00 to 01:00	01:00 to 02:00
Monday	**SGD** Anatomy	Physiology Lecture	**B R E A K**	Behavioral Sciences Lecture	Pathology Lecture	Pakistan Studies
Tuesday	**08:00 to 09:00** Anatomy Lecture	**09:00 to 10:00** Physiology Lecture		Biochemistry Lecture	Anatomy Lecture	PERLs Lecture
Wednesday	**08:00 to 11:00** ***C-FRC*** Clinical Skills – Foundation – Rotation- Clerkship **(Ward Rounds)**			Biochemistry Lecture	Anatomy Lecture	SDL Physiology
Thursday	**08:00 to 09:30** **Practical** C: Anatomy A: Biochemistry B: Physiology	**09:30 to 10:30** Physiology Lecture	**B R E A K**	Anatomy Lecture	Biochemistry Lecture	SDL Anatomy
Friday	A: Anatomy B: Biochemistry C: Physiology	Physiology Lecture		Anatomy Lecture	Jumma Prayers	
Saturday	B: Anatomy C: Biochemistry A: Physiology	Pharmacology Lecture		Community Medicine Lecture	**SGD** Physiology	

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Planners

PHYSIOLOGY DEPARTMENT

SAHIWAL MEDICAL COLLEGE, SAHIWAL
Medical College Road, Sahiwal-57000, Pakistan

No: _____/PHY/SLMC/SWL Date: ____/05/2024

Planner for Block 4 – Renal Module

2nd Year MBBS

Week 1	**6 May**	**7 May**	**8 May**	**9 May**	**10 May**	**11 May**
	-	Introdcution to renal System and functions of Kidney **Dr. Swaiba**	General Concepts regarding body fluid compartments **Dr. Swaiba**	Physiological Anatomy of Neprhon **Dr. Naima/ Dr. Swaiba**	Micturition Reflex **Dr. Naima/ Dr. Swaiba**	-
Week 2	**13 May**	**14 May**	**15 May**	**16 May**	**17 May**	**18 May**
	-	GFR & its determinents **Dr. Swaiba**	GFR & factors affecting it – Auto Regulation of GFR **Dr. Swaiba**	Formation of urine – 1 **Dr. Naima/ Dr. Swaiba**	Formation of urine – 2 **Dr. Naima/ Dr. Swaiba**	-
Week 3	**20 May**	**21 May**	**22 May**	**23 May**	**24 May**	**25 May**
	-	Transport maximum, Renal Threshold – SPLAY diagram **Dr. Swaiba**	Formation of concentrated urine **Dr. Swaiba**	Renal Clearance **Dr. Naima/ Dr. Swaiba**	Acid – Base Regulation **Dr. Naima/ Dr. Swaiba**	-
Week 4	**27 May**	**28 May**	**29 May**	**30 May**	**31 May**	**1 June**
	-	Abnormalities of Acid Base Balance **Dr. Swaiba**	Kidney Diseases **Dr. Swaiba**	Diuretics **Dr. Naima/ Dr. Swaiba**	***Class Test***	-

Prof. Dr. Naima
Head of Department of Physiology
Sahiwal Medical College Sahiwal.

PHYSIOLOGY DEPARTMENT

SAHIWAL MEDICAL COLLEGE, SAHIWAL
Medical College Road, Sahiwal-57000, Pakistan

No: ____/PHY/SLMC/SWL Date: 23/07/2024

Planner for Block 5 – Endocrinology & Reproduction I Module

2nd Year MBBS (S-13)

(29th July to 16th August)

Week 1 Practical Light Reflex **Dr. Noshaba**	**29 July**	**30 July**	**31 July**	**1 Aug**	**2 Aug**	**3 Aug**
	SGD **Dr. Noshaba**	-	Spermatogenesis Capacitation & Acrosome reaction *EnR-P-009* **Lecture by Dr. Swaiba**	Testosterone *EnR-P-010* **Lecture by Dr. Swaiba**	Menstrual Cycle *EnR-P-011* **Lecture by Dr. Swaiba**	-
Week 2 Practical Colour Vision **Dr. Noshaba**	**5 Aug**	**6 Aug**	**7 Aug**	**8 Aug**	**9 Aug**	**10 Aug**
	SGD **Dr. Noshaba**	-	Puberty, menarche & menopause *EnR-P-013* **Lecture by Dr. Swaiba**	Normal Pregnancy (Hormonal & Non-hormonal Functions of Placenta) *EnR-P-014* **Lecture by Dr. Swaiba**	Normal Pregnancy (Response of the mother's body to pregnancy & uterine contractility during parturition) *EnR-P-014* **Dr. Swaiba**	-
Week 3 Practical Cranial Nerve 3rd,4th,6th **Dr. Noshaba**	**12 Aug**	**13 Aug**	**14 Aug**	**15 Aug**	**16 Aug**	**17 Aug**
	SGD **Dr. Noshaba**	-	-	Female reproductive Hormones *EnR-P-012* **Lecture by Dr. Swaiba**	Lactation *EnR-P-015* **Lecture by Dr. Swaiba**	-

Prof. Dr. Naima
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PHYSIOLOGY DEPARTMENT

SAHIWAL MEDICAL COLLEGE, SAHIWAL
Medical College Road, Sahiwal-57000, Pakistan

No: 1001/PHY/SLMC/SWL Date: 17/10/2024

Planner for Block 6 – Neurosciences-I Module

2nd Year MBBS (S – 13)

Facilitator: Dr. Nauman Aziz

Week 1 **Practical** Olfactory Nerve **Dr. Nabeel**	**21 Oct**	**22 Oct**	**23 Oct**	**24 Oct**	**25 Oct**	**26 Oct**
	Organization of Nervous System, Neurons and Synapses **NS-P-001**	Nerve fibers **NS-P-002**	–	Somatic sensations **NS-P-004**	Ascending Tracts/ pathways **NS-P-005-006**	–
Week 2 **Practical** Accessory Nerve **Dr. Noshaba**	**28 Oct**	**29 Oct**	**30 Oct**	**31 Oct**	**01 Nov**	**02 Nov**
	Somatosensory Cortex **NS-P-003**	Pain **NS-P-007**	–	Spinal Cord **NS-P-008**	Muscle Spindle and stretch reflex **NS-P-009**	–
Week 3 **Practical** Hypoglossal Nerve **Dr. Rabia**	**04 Nov**	**05 Nov**	**06 Nov**	**07 Nov**	**08 Nov**	**09 Nov**
	GTO **NS-P-010-11**	Motor areas of the brain **NS-P-012**	–	Brainstem **NS-P-013**	Descending tracts **NS-P-014**	–
Week 4 **Practical** Facial Nerve **Dr. Nabeel**	**11 Nov**	**12 Nov**	**13 Nov**	**14 Nov**	**15 Nov**	**16 Nov**
	Location of motor neurons **NS-P-015**	Spinal shock and hemi section **NS-P-016**	–	Cerebellum **NS-P-017**	Basal Ganglia **NS-P-018**	–
Week 5 **Practical** Examination of Sensory Nervous System **Dr. Noshaba**	**18 Nov**	**19 Nov**	**20 Nov**	**21 Nov**	**22 Nov**	**23 Nov**
	Limbic system **NS-P-020**	Brain stem reticular formation **NS-P-021**	–	Sleep & EEG **NS-P-022-023**	Epilepsy **NS-P-024**	–
Week 6 **Practical** Examination of Motor Nervous system **Dr. Rabia**	**25 Nov**	**26 Nov**	**27 Nov**	**28 Nov**	**29 Nov**	**30 Nov**
	Memory **NS-P-0025**	Speech **NS-P-0026**	–	ANS **NS-P-0027**	Abnormal Gaits	–

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Assessment Methods

BLOCK 4

MBBS 2nd Professional

Block-4

Theme	Subject	Written Exam			Oral/Practical/Clinical Exam			
		MCQ (1 mark)	SEQ (5 mark each)	Marks	OSPE (8 marks each observed)	OSCE (8 marks each observed)	OSVE (16 marks each observed)	Marks
Normal Structure	Anatomy applied/clinical	23	03	38	03	-	01	40
Normal Function	Physiology applied/clinical	16	02	26	02	-	01	32
	Biochemistry applied/clinical	20	02	30	02	-	01	32
Disease Burden & Prevention	Community Medicine & Public Health	07	-	07	-	-	-	-
	Behavioral Sciences	06	-	06	-	-	-	-
Pathophysiology & pharmacotherapeutics	Pathology	09	-	09	-	-	-	-
	Pharmacology	04	-	04	-	-	-	-
CFRC	CF-2-1	-	-	-	-	01	-	08
PERLs	PERLs-2-1	-	-	-	-	01	-	08
Total		**85**	**7x5=35**	**120**	**07 stations x 08 = 56**	**02 stations x 08 = 16**	**03 stations x 16=48**	**120**

BLOCK 5

MBBS 2nd Professional

Block-5

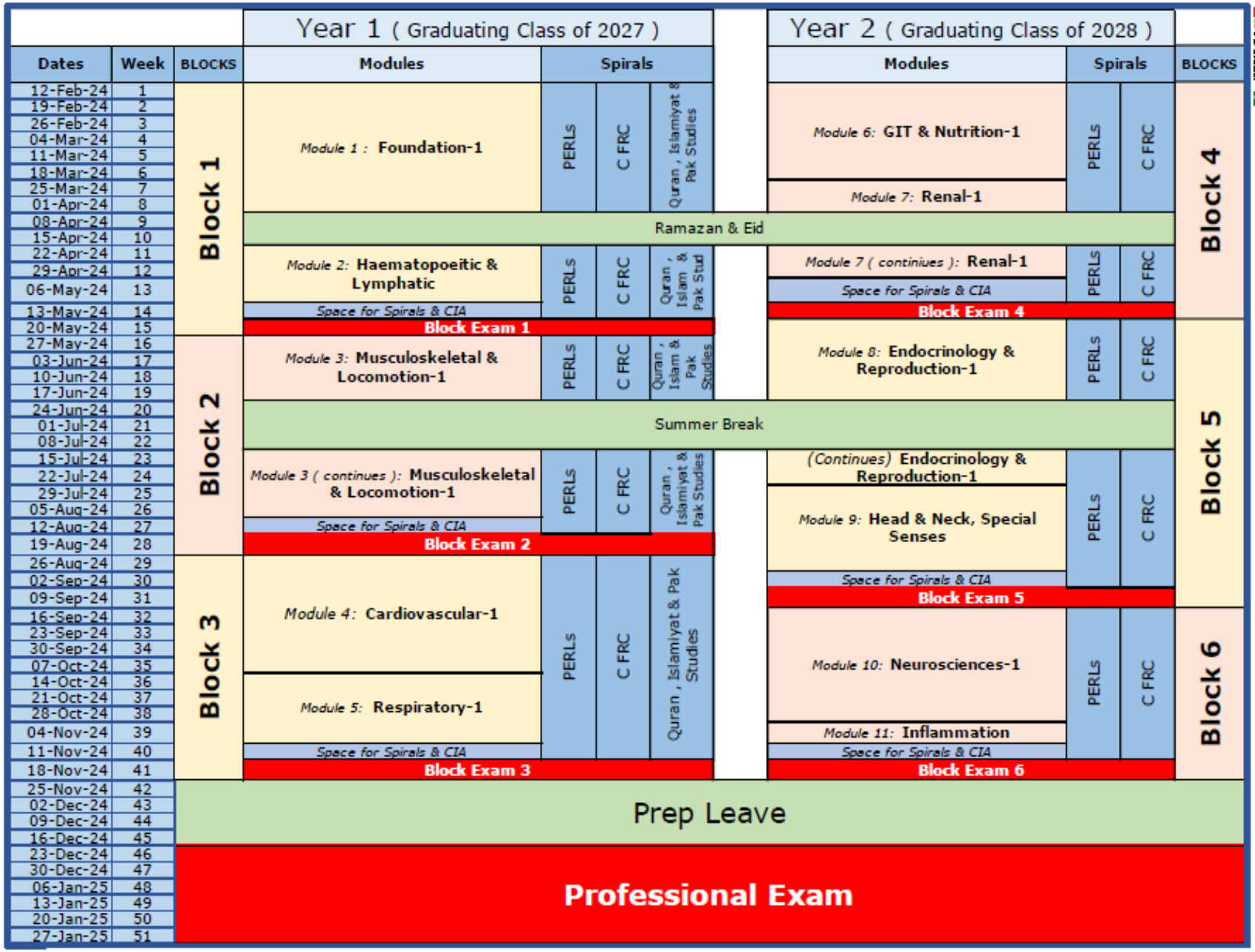
Theme	Subject	Written Exam			Oral/Practical/Clinical Exam			
		MCQ (1 mark)	SEQ (5 mark each)	Marks	OSPE (8 marks each observed)	OSCE (8 marks each observed)	OSVE (16 marks each observed)	Marks
Normal Structure	Anatomy applied/clinical	30	04	50	04	-	01	48
Normal Function	Physiology applied/clinical	18	02	28	02	-	01	32
	Biochemistry applied/clinical	11	01	16	01	-	01	24
Disease Burden & Prevention	Community Medicine & Public Health	08	-	08	-	-	-	-
	Behavioral Sciences	04	-	04	-	-	-	-
Pathophysiology & pharmacotherapeutics	Pathology	12	-	12	-	-	-	-
	Pharmacology	02	-	02	-	-	-	-
CFRC	CF-2-2	-	-	-	-	01	-	08
PERLs	PERLs-2-2	-	-	-	-	01	-	08
Total		85	7x5=35	120	07 stations x 08 = 56	02 stations x 08 = 16	03 stations x 16=48	120

BLOCK 6

MBBS 2nd Professional
Block-6

Theme	Subject	Written Exam			Oral/Practical/Clinical Exam			
		MCQ (1 mark)	SEQ (5 mark each)	Marks	OSPE (8 marks each observed)	OSCE (8 marks each observed)	OSVE (16 marks each observed)	Marks
Normal Structure	Anatomy applied/clinical	24	03	39	03	-	01	40
Normal Function	Physiology applied/clinical	26	03	41	03	-	01	40
	Biochemistry applied/clinical	09	01	14	01	-	01	24
Disease Burden & Prevention	Community Medicine & Public Health	04	-	04	-	-	-	-
	Behavioral Sciences	03	-	03	-	-	-	-
Pathophysiology & pharmacotherapeutics	Pathology	12	-	12	-	-	-	-
	Pharmacology	07	-	07	-	-	-	-
CFRC	CF-2-3	-	-	-	-	01	-	08
PERLs	PERLs-2-3	-	-	-	-	01	-	08
Total		**85**	**7x5=35**	**120**	**07 stations x 08 = 56**	**02 stations x 08 = 16**	**03 stations x 16=48**	**120**

UHS BLUEPRINT



Year 1 (Graduating Class of 2027)							Year 2 (Graduating Class of 2028)			
Dates	Week	BLOCKS	Modules	Spirals			Modules	Spirals		BLOCKS
12-Feb-24	1	Block 1	Module 1 : Foundation-1	PERLs	C FRC	Quran , Islamiyat & Pak Studies	Module 6: GIT & Nutrition-1	PERLs	C FRC	Block 4
19-Feb-24	2									
26-Feb-24	3									
04-Mar-24	4									
11-Mar-24	5									
18-Mar-24	6									
25-Mar-24	7									
01-Apr-24	8						Module 7: Renal-1			
08-Apr-24	9		Ramazan & Eid							
15-Apr-24	10									
22-Apr-24	11		Module 2: Haematopoeitic & Lymphatic	PERLs	C FRC	Quran , Islam & Pak Stud	Module 7 (continues): Renal-1	PERLs	C FRC	
29-Apr-24	12									
06-May-24	13						Space for Spirals & CIA			
13-May-24	14		Space for Spirals & CIA				Block Exam 4			
20-May-24	15		Block Exam 1							
27-May-24	16	Block 2	Module 3: Musculoskeletal & Locomotion-1	PERLs	C FRC	Quran , Islam & Pak Studies	Module 8: Endocrinology & Reproduction-1	PERLs	C FRC	Block 5
03-Jun-24	17									
10-Jun-24	18									
17-Jun-24	19									
24-Jun-24	20		Summer Break							
01-Jul-24	21									
08-Jul-24	22									
15-Jul-24	23		Module 3 (continues): Musculoskeletal & Locomotion-1	PERLs	C FRC	Quran , Islamiyat & Pak Studies	(Continues) Endocrinology & Reproduction-1	PERLs	C FRC	
22-Jul-24	24									
29-Jul-24	25						Module 9: Head & Neck, Special Senses			
05-Aug-24	26									
12-Aug-24	27		Space for Spirals & CIA				Space for Spirals & CIA			
19-Aug-24	28		Block Exam 2				Block Exam 5			
26-Aug-24	29	Block 3	Module 4: Cardiovascular-1	PERLs	C FRC	Quran , Islamiyat & Pak Studies	Module 10: Neurosciences-1	PERLs	C FRC	Block 6
02-Sep-24	30									
09-Sep-24	31									
16-Sep-24	32									
23-Sep-24	33									
30-Sep-24	34									
07-Oct-24	35									
14-Oct-24	36		Module 5: Respiratory-1							
21-Oct-24	37									
28-Oct-24	38						Module 11: Inflammation			
04-Nov-24	39									
11-Nov-24	40		Space for Spirals & CIA				Space for Spirals & CIA			
18-Nov-24	41		Block Exam 3				Block Exam 6			
25-Nov-24	42		Prep Leave							
02-Dec-24	43									
09-Dec-24	44									
16-Dec-24	45									
23-Dec-24	46		Professional Exam							
30-Dec-24	47									
06-Jan-25	48									
13-Jan-25	49									
20-Jan-25	50									
27-Jan-25	51									