RENAL-1 MODULE

(2ND YEAR M.B.B.S)



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DEPARTMENT OF MEDICAL EDUCATION

DIRECTOR MEDICAL EDUCATION	**Prof. Dr. Gulfreen Waheed**
FACULTY CO-ORDINATOR	Dr. Shabkhez Rab

DEPARTMENTAL REPRESENTATORS FOR MODULE

DEPARTMENT	HEAD OF DEPARTMENT	FOCAL PERSON
ANATOMY	Prof. Razia Perveen	Dr Kulsoom
PHYSIOLOGY	Prof. Sadia Zafar	Dr Afsheen Akbar
BIOCHEMISTRY	Prof. Sadia Wajahat	Dr Yusra
PATHOLOGY	Prof. Shaukat Ali Shah	Dr Naeem
PHARMACOLOGY	Dr. Asma	Dr Asma
COMMUNITY MEDICINE	Prof Rana Akhtar Khan	Dr Sana Noor
MEDICINE & ALLIED	Prof Dr. Muzammil	Dr. Farhan
SURGERY & ALLIED	Prof Dr. Khalid Nizami	Dr. Omer Farooq

STUDY GUIDE DEVELOPMENT COMMITTEE

Name	Designation	Signatures
Prof. Dr. Gulfreen Waheed	DIRECTOR MEDICAL EDUCATION	
Dr. Shabkhez Rab	FACULTY CO-ORDINATOR	
Dr Ujala Aymun	Study guide co-ordinator	
Dr Kulsoom	Module coordinator	
Dr Shaheena	Physiology Co-ordinator	
Dr Yusra	Biochemistry Co-ordinator	
Prof. Razia Perveen	Anatomy	
Prof. Sadia Zafar	Physiology	
Prof. Sadia Wajahat	Biochemistry	
Prof. Shaukat Ali Shah	Pathology	
Prof. Dr. Asma	Pharmacology	
Prof Rana Akhtar Khan	Community medicine	
Prof. Dr. Muzammil	Medicine & Allied	

Introduction to Study guide

This study guide has been developed as an aid to inform students about the academic program for Renal-1 module. It will help students organize and manage their studies throughout the module and guide them on assessment methods, rules and regulations. Following particulars have been kept under consideration during development of this study guide;

- Communicates information on organization and management of the module. This will help the student to contact the right person in case of any difficulty.
- Defines the learning objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings, clinical skills, practical, tutorial, case based learning and problem-based learning that will be implemented to achieve the module objectives.
- Provides a list of learning resources such as book references with page numbers, computer assisted learning programs, videos, web- links, and journals for students to consult in order to maximize their learning.
- Provides information on the assessment methods for formative (module exams) and summative assessment (block exams) of the module and Block examinations.
- Highlights the criteria for the student's overall performance.
- Focuses on information pertaining to examination policy, rules and regulations of Avicenna Medical College and the University of Health Sciences (UHS).

Module rationale

Renal system is a vital part of human body. 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.

We have assigned four (4) weeks in academic calendar of 2nd year curriculum of MBBS to renal module. We have divided our module into eight (8) themes. For every theme, anatomy, physiology, biochemistry, pathology, pharmacology, community medicine, behavioral sciences, general medicine and surgery have planned for integrated teaching of students for better comprehension and understanding of subject.

Module outcome

- Discuss the gross and microscopic anatomy of kidney and urinary system.
- Explain the embryological development of kidney and urinary tract
- Explain common developmental abnormalities of renal system
- 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.
- Highlight pathologies related to kidneys and their distinctive clinical features
- Interpret investigations done to diagnose abnormal structural and functional presentations.

Curriculum Map of the module

Themes

- Kidney
- Ureter
- Bladder
- Acid/base balance

Clinical relevance

- Protein in urine.
- Kidney stones.
- Kidney pain.
- Blood in urine (hematuria)
- Kidney infection.
- Acute kidney injury (AKI)
- Kidney cancer.
- Dialysis
- Control of blood pressure

Curriculum of individual subjects

ANATOMY							
No.	**Code**	**Topic**	**Learning Objective**	**Teaching strategy**	**Department**	**Faculty members**	**References**
1	R-A-001	Kidney	Describe gross features and facial coverings of kidneys. Kidney Compare and contrast the relations of right and left kidneys. Describe blood supply, lymphatics and nerve supply of kidney Discuss the clinical aspects of kidneys	Lecture	Anatomy	Dr. Kalsoom	Snell Clinal Anatomy by Region, 10th ed. Pg. No 379-383
2	R-A-002	Ureter	Compare and contrast the relations of right and left ureter, Give the constrictions of ureter Describe the blood supply nerve supply and lymphatics of ureter Identify the ureter.	Lecture	Anatomy	Dr. Kalsoom	Snell Clinal Anatomy by Region, 10th ed. Pg. No 383-384
3	R-A-003	Urinary Bladder	Describe the gross anatomical features, relations, surfaces, blood supply, nerve supply and lymphatics of urinary bladder, Give the clinical corelates of urinary bladder Identify the gross features and surfaces of urinary bladder	Lecture	Anatomy	Dr. Razia	Snell Clinal Anatomy by Region, 10th ed. Pg. No 449-457
4	R-A-008	Development of urinary system	Describe development of intermediate mesoderm and its derivatives	Lecture	Anatomy	Dr. Razia	Langman Medical Embryology, 5th ed. Ch. NoPg. No 206-219
5	R-A-009	Structure of kidney	Describe the histological, structural organization and functions of kidney with clinicals.	Lecture	Anatomy	Dr. Madiha	Medical Histology By Laiq Hussain 6th ed Pg. No 206-219
7	R-A-001	Kidney	Describe gross features and facial coverings of kidneys. Kidney Compare and contrast the relations of right and left kidneys. Describe blood supply, lymphatics and nerve supply of kidney Discuss the clinical aspects of kidneys	Lecture	Gross Practical	Dr. Madiha/Dr. Shazia	Snell Clinal Anatomy by Region
8	R-A-008	Development of urinary system	Describe development of intermediate mesoderm and its derivatives	Lecture	Tutorial	Dr. Madiha/Dr. Shazia	Langman Medical Embryology,
9	EnR-A-001	Diencephalon (Endocrinology)	Describe the location, anatomy blood supply and functions of pituitary gland	Lecture	Anatomy	Dr. Kalsoom	Snell Clinal Anatomy by Region, 1oth ed. Pg. No
10	R-A-008	Development of urinary system	Describe the development of pronephros, mesonephros and metanephros	Lecture	Anatomy	Dr. Razia	Langman Medical Embryology, 5th ed. Ch. NoPg. No 206-219
11	R-A-008	Development of urinary system	Describe positional changes during descent of kidney with correlation to its blood supply	Lecture	Anatomy	Dr. Razia	Langman Medical Embryology, 5th ed. Ch. NoPg. No
12	R-A-010	Juxtaglomerular apparatus	Describe the light and ultrastructure of Juxtaglomerular apparatus and glomerular filtration barrier	Lecture	Anatomy	Dr. Madiha	Medical Histology By Laiq Hussain 6th ed Pg. No 206-219

13	R-A-013	Kidney	Identify and draw and label the histological structure of kidney and enumerate points of identification	Lecture	Histology Practical	Dr. Shaista	Histology practical note book
14	R-A-002	Ureter	Compare and contrast the relations of right and left ureter, Give the constrictions of ureter Describe the blood supply nerve supply and lymphatics of ureter Identify the ureter.	Lecture	Gross Practical	Dr. Madiha/Dr. Shazia	Snell Clinical Anatomy by Region
15	R-A-008	Development of urinary system	Describe development of intermediate mesoderm and its derivatives	Lecture	Tutorial	Dr. Madiha/Dr. Shazia	Langman Medical Embryology
16	EnR-A-002	Thyroid & Parathyroid gland	Describe the Thyroid, Parathyroid with their type, Relations, blood supply, and nerve supply., Explain the anatomical basis for surgical removal of the glands of neck with special emphasis on the complications that can be encountered	Lecture	Anatomy	Dr. Kalsoom	Snell Clinal Anatomy by Region, 10th ed. Pg. No 751-754
17	EnR-A-003/004/005	Testis, Accessory Male Organs, Prostate	Describe the structure, fascia, coverings, blood and nerve supply of testis, Describe the gross anatomical features and neurovasculature of epididymis and vas deferens, Seminal vesicles, Bulbourethral gland, Describe the morphological features and neurovascular supply of prostate. Correlate the clinical manifestations of prostate with lobes and/or zones of prostate	Lecture	Anatomy	Dr. Kalsoom	Snell Clinal Anatomy by Region, 10th ed. Pg. No 300, 453-455
18	R-A-008	Development of urinary system	Describe the development of urinary bladder and urethra	Lecture	Anatomy	Dr. Razia	Langman Medical Embryology, 5th ed. Ch. NoPg. No 206-219
19	R-A-011	Structure of ureter	Describe the histological structure of ureter	Lecture	Anatomy	Dr. Madiha	Medical Histology By Laiq Hussain 6th ed Pg. No 206-219
20	R-A-014	Ureter	Identify, draw and label the histological structure of ureter and enumerate its points of identification	Lecture	Histology Practical	Dr. Shaista	Histology practical note book
21	R-A-003	Urinary Bladder	Describe the gross anatomical features, relations, surfaces, blood supply, nerve supply and lymphatics of urinary bladder, Give the clinical corelates of urinary bladder Identify the gross features and surfaces of urinary bladder	Lecture	Gross Practical	Dr. Madiha/Dr. Shazia	Snell Clinal Anatomy by Region
22	R-A-008	Development of urinary system	Describe positional changes during descent of kidney with correlation to its blood supply	Lecture	Tutorial	Dr. Madiha/Dr. Shazia	Langman Medical Embryology
23	EnR-A-006	Testis clinical conditions	Describe the anatomical basis and manifestations of the following conditions: 1) Hydrocele of spermatic cord and/or testes 2) Hematocele of testes 3) Torsion of the spermatic cord 4) Varicocele Vestigial remnants of embryonic genital duct, Describe the anatomical basis of vasectomy, & metastasis of cancer of testis and scrotum	Lecture	Anatomy	Dr. Kalsoom	Snell Clinal Anatomy by Region, 10th ed. Pg. No 301
24	R-A-008	Development of urinary system	List and describe the common congenital anomalies of kidney, urinary bladder and urethra.	Lecture	Anatomy	Dr. Razia	Langman Medical Embryology, 5th ed. Ch. NoPg. No 206-219
25	R-A-012	Structure of urinary bladder	Describe the histological structure of urinary bladder Discuss clinical correlates (Cystitis, Urinary bladder cancer, Urinary Tract Infections (UTIs))	Lecture	Anatomy	Dr. Madiha	Medical Histology By Laiq Hussain 6th ed Pg. No 206-219

26	R-A-015	Urinary Bladder	Identify, draw and label the histological structure of urinary bladder and enumerate its points of identification	Lecture	Histology Practical	Dr. Shaista	Histology practical note book
27	EnR-A-001	Diencephalon (Endocrinology)	Describe the location, anatomy blood supply and functions of pituitary gland	Lecture	Gross Practical	Dr. Madiha/Dr. Shazia	Snell Clinal Anatomy by Region
28	R-A-008	Development of urinary system	List and describe the common congenital anomalies of kidney, urinary bladder and urethra.	Lecture	Tutorial	Dr. Madiha/Dr. Shazia	Langman Medical Embryology
29	R-A-008	Development of urinary system	List and describe the common congenital anomalies of kidney, urinary bladder and urethra.	Lecture	Histology Practical	Dr. Razia	Langman Medical Embryology, 5th ed. Ch. NoPg. No 206-219
30	EnR-A-002	Thyroid & Parathyroid gland	Describe the Thyroid, Parathyroid with their type, Relations, blood supply, and nerve supply., Explain the anatomical basis for surgical removal of the glands of neck with special emphasis on the complications that can be encountered	Lecture	Gross Practical	Dr. Madiha/Dr. Shazia	Snell Clinical Anatomy by Regions
31	R-A-008	Development of urinary system	List and describe the common congenital anomalies of kidney, urinary bladder and urethra.	Lecture	Tutorial	Dr. Madiha/Dr. Shazia	Langman Medical Embryology

NORMAL FUNCTION

No.	Code	Topic	Learning Objective	Teaching strategy	Department	Faculty members	References
1	R-P-001	Body fluid compartment	Describe major composition of intracellular and extracellular fluid, Explain the causes of hypo & hypernatremia and their effects on Composition of body fluid compartments	Lecture	Physiology	Dr Shaheena	Guyton & Hall 14th ed. Ch. 25 Pg. 306
2	R-P-001	Body fluid compartment	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	lecture	Physiology	Dr Shaheena	Guyton & Hall 14th ed. Ch. 25 Pg. 308-314
3	R-P-026	Interpretation of report	Perform complete examination of urine sample URS-10(using urine reagent 10) and interpret its repor	Practical	Physiology	Dr Nida	zafar ch vol II
4	R-P-026	Interpretation of report	Describe major composition of intracellular and extracellular fluid, Explain the causes of hypo & hypernatremia and their effects on Composition of body fluid compartments	SGD	physiology	Dr Madiha	zafar ch vol II
5	R-P-002,R-P-003	Body fluid compartment,Functions	Describe difference between iso-osmotic, hyper osmotic, hypo-osmotic fluids, Explain the functions of the kidney	Lecture	Physiology	Dr Afsheen	Guyton & Hall 14th ed. Ch. 26 Pg.311, 321
6	R-P-004	Micturition Reflex	Describe the mechanism of micturition and its control.Explain the role of higher center on micturition,Explain the physiological anatomy and innervation of bladder,Voluntry control of micturition	lecture	Physiology	Dr Nida	Guyton & Hall 14th ed. Ch. 26 Pg. 326
7	R-P-006	Urine formation	Enlist the steps of urine formation,Enlist the steps of urine formation,Discuss the composition of filtrate,Explain the minimal change nephropathy and increase permeability to plasma protein	Lecture	Physiology	Dr Shaheena	Guyton & Hall 14th ed. Ch. 26 Pg. 329-333
8	R-P-007	Glomerular filteration	Define Glomerular Filtration Rate (GFR).Describe the determinants of GFR.Explain the factors affecting GFR.Discuss the hormones and autocoids that affect GFR	Lecture	Physiology	Dr Afsheen	Guyton & Hall 14th ed. Ch. 26 Pg. 329-333

9	R-P-007	Glomerular filteration	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	lecture	Physiology	Dr Nida	Guyton & Hall 14th ed. Ch. 27 Pg. 338-342
10	R-P-008	Reabsorption	Enumerate different types of transport along the kidney tubules for reabsorption,Explain the regulation of tubular reabsorption,Discuss the forces / pressure and hormones that determine renal tubular reabsorption.Regulation of tubular reabsorption	Lecture	Physiology	Dr Shaheena	Guyton & Hall 14th ed. Ch. 26 Pg. 345-349
11	R-P-026	Interpretation of data	Determine specific Gravity of urine	Practical	Physiology	Dr Navaira	Zafar Ch.volume II
12	R-P-007	Glomerular filtration	Glomerular filterate,mechanism,factors effecting ,autoregulation	RENAL	SGD	Dr Shaheena	Guyton & Hall 14th ed. Ch. 26 Pg. 345-349
13	R-P-008	Reabsorption	Discuss the forces / pressure and hormones that determine renal tubular reabsorption,Explain the reabsorption of water along different parts of nephronDefine obligatory and facultative reabsorption.	Lecture	Physiology	Dr Shaheena	Guyton & Hall 14th ed. Ch. 26 Pg. 345-349
14	R-P-008	Reabsorption	Discuss the characteristics of late distal tubules and Cortical collecting ducts.Discuss the characteristics of late distal tubules and Cortical collecting ducts.Discuss the characteristics of medullary collecting ducts	Lecture	Physiology	Dr Nida	Guyton & Hall 14th ed. Ch. 26 Pg. 345-349
15	R-P-009,R-P-010	Clearance method	Explain the use of clearance method to quantify kidney function,Describe mechanism of re-absorption of sodium along different parts of nephrons.Transport maximum	Lecture	Physiology	Dr Madiha	Guyton & Hall 14th ed. Ch. 28 Pg. 360
16	R-P-010	Transport maximum	Define filtered load for the substance.Justify the difference of transport maximum and renal threshold of glucose in renal tubules	Lecture	Physiology	Dr Afsheen	Guyton & Hall 14th ed. Ch. 28 Pg. 347
17	R-P-010	Transport maximum	Explain the renal mechanisms for excreting Dilute urine,Explain the mechanism for forming a Concentrated urine.	Lecture	Physiology	Dr Nida	Guyton & Hall 14th ed. Ch. 28 Pg. 368
18	R-P-026	Interpretation of data	Determine specific Gravity of urine	Practical	Physiology	Dr Shaheena	Zafar Ch.Vol.II
19	R-P-010	Transport maximum	Explain the renal mechanisms for excreting Dilute urine,Explain the mechanism for forming a Concentrated urine.	SGD	Physiology	Dr Afsheen	Guyton & Hall 14th ed. Ch. 28 Pg. 347
20	R-P-011	Urine Concentration and dilution	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	Lecture	Physiology	Dr Shaheena	Guyton & Hall 14th ed. Ch. 29 Pg. 367
21	R-P-012,013	Obligatory Urine Vol.Disorders of urine concentaration	Define and explain the term obligatory urine volume.Define and explain free water clearance. Define Urine specific gravity.	lecture	physiology	Dr Shaheena	
22	R-P-015,016	Osmoreceptor (ADH) feedback mechanism	Make the flow chart to show the Osmoreceptor antidiuretic hormone (ADH) feedback mechanism for regulating extracellular fluid osmolarity in response to a water deficit.Explain the mechanism of thirst	Lecture	Physiology	Dr Nida	
23	R-P-017.018	Renal regulation Of K,Control of ECF osmolarity	Enumerate the factors that can alter potassium distribution between intracellular and extracDiscuss the process of secretion of potassium by renal tubulesellular fluidsExplain the regulation of internal potassium distribution and potassium secretion	Lecture	Physiology	Dr Madiha	Guyton & Hall 14th ed. Ch. 29 Pg. 383

24	R-P-018	Control of ECF osmolarity	Explain the control of extracellular fluid osmolarity and sodium concentration.Explain the integration of renal mechanism for control of Extracellular Fluid (ECF)	Lecture	Physiology	Dr Afsheen	Guyton & Hall 14th ed. Ch. 29 Pg. 377
25	R-P-019	Control of ECF	Explain the importance of pressure natriuresis and diuresis in maintaining body sodium and fluid balance	Lecture	Physiology	Dr Nida Dr Shaheena	Guyton & Hall 14th ed. Ch. 30 Pg. 394
			Enumerate the factors that can alter potassium distribution between intracellular and extracellular fluids	lecture	Physiology	Dr Afsheen	Guyton & Hall 14th ed. Ch. 29 Pg. 383
26	R-P-019,R-P-020	Renal Regulation of calcium Renal Regulation of phosphate	Renal Regulation of calcium Renal Regulation of phosphate.Explain the renal handling of calcium concentration to regulate plasma calcium concentration,Renal Ca regulation And Phosphate Regulation	Lecture	Physiology	Dr Shaheena	Guyton & Hall 14th ed. Ch. 30 Pg. 391
27	R-P-21,R-P-22	Renal body fluid feed back control	Explain the nervous and hormonal factors that increase the effectiveness of renal body fluid feedback control, conditions that increase ECF vol. but with normal blood volume	lecture	physiology	Dr Shaheena	Guyton & Hall 14th ed. Ch. 30 Pg. 395-400
28	R-P-019,R-P-020	Acid base balance	Renal Regulation of calcium Renal Regulation of phosphate.Explain the renal handling of calcium concentration to regulate plasma calcium concentration,Renal Ca regulation And Phosphate Regulation	Lecture	Physiology	Dr Nida	Guyton & Hall 14th ed. Ch. 30 Pg. 391
29	R-P-21,R-P-22	Acid base balance	Explain the nervous and hormonal factors that increase the effectiveness of renal body fluid feedback control, conditions that increase ECF vol. but with normal blood volume	Lecture	Physiology	Dr Madiha	Guyton & Hall 14th ed. Ch. 30 Pg. 395-400
30	R-P-23,R-P-24	Acid base balance,Ani on Gap	Analyze the acid base disturbances on the basis of pH, HCO3 and CO2Explain the causes and compensation of metabolic acidosis	Lecture	Physiology	Dr Afsheen	Guyton & Hall 14th ed. Ch.31 Pg. 402
31	R-P-24	Interpretati on of reporT	Explain the causes and compensation of metabolic alkalosis.Explain the causes and compensation of respiratory acidosis Explain the causes and compensation of respiratory alkalosis	Lecture	Physiology	Dr Nida	Guyton & Hall 14th ed. Ch.31 Pg. 415-418
32	R-P-24,R-P-025	Acid Base BALANCE	Explain the causes and compensation of mixed acid base disorder.Define and explain anion gap		Physiology	Dr Shaheena	Guyton & Hall 14th ed. Ch.31 Pg. 415-419
33	R-P-026	Practical	Perform a complete examination of the urine sample URS-10 (using urine reagent-10) and interpret its report		Physiology	Dr Afsheen	Zafar Ch vol.II

BIOCHEMISTRY

No.	Code	Topic	Learning Objective	Teaching strategy	Department	Faculty members	References
1	R-B-002	Protein degradatio n and turnover	Compare the salient feature of the two major mechanisms for degradation of body proteins. Elaborate the concept of protein turnover and quote examples of short lived and long-lived proteins.	Lecture	Biochemistry	Prof Dr Haroon Habib	Lippincott's 7th ed Ch= 19, 20 Harper's 31st ed Ch= 27-29
2	R-B-003	Protein Metabolis m/ Amino acid pool and nitrogen balance	Define amino acid pool. Delineate the sources and fates of amino acids. Give definition of nitrogen balance and its three states. Give physiological and/or pathological conditions associated with each state of nitrogen balance.	Lecture	Biochemistry	Prof Dr Haroon Habib	Lippincott's 7th ed Ch= 19, 20 Harper's 31st ed Ch= 27-29

3	R-B-004	Protein Metabolism/ Introduction to Reactions involved in catabolism	Enlist 7 important reactions involved in amino acid metabolism and give a brief introduction of each. (Deamination, Transamination, Trans-deamination, Deamidation, Decarboxylation, Transmethylation & Transpeptidation) +Enlist 7 important reactions involved in amino acid metabolism and give a brief introduction of each. (Deamination, Transamination, Trans-deamination, Deamidation, Decarboxylation, Transmethylation & Transpeptidation)	Lecture	Biochemistry	Prof Dr Haroon Habib	Lippincott 7th edition chapter 20
4	R-B-005	Protein Metabolism/ Transamination	Define transamination. Describe the reactions catalyzed by ALT (alanine transaminase) and AST (aspartate aminotransferase) with special reference to the role of pyridoxal phosphate in the transfer of amino group. Give diagnostic and prognostic importance of serum ALT and AST. Elaborate the importance of transamination reaction in amino acid metabolism.	Lecture	Biochemistry	Prof DR haroon Habib	Lippincott's 7th ed Ch= 19, 20 Harper's 31st ed Ch= 27-29
5	R-B-006	Protein Metabolism/ Trans deaminatio n	Define oxidative deamination. Describe the reaction catalyzed by glutamate dehydrogenase (GDH) along with its significance. Define trans deamination.Define trans deamination.	Lecture	Biochemistry	Prof DR haroon Habib	Lippincott's 7th ed Ch= 19, 20 Harper's 31st ed Ch= 27-29
6	R-B-007	Protein Metabolism/ Deamidation	Define deamidation. Describe deamidation reaction catalyzed by glutaminase and asparaginase along with their significance. Explain how does L-asparaginase help in the management of certain types of leukemia. Elaborate the mechanism for shunting of glutamine from liver to kidneys during acidosis. Give advantage of shunting.	Lecture	Biochemistry	Prof DR haroon Habib	Lippincott's 7th ed Ch= 19, 20 Harper's 31st ed Ch= 27-29
7	R-B-010	Protein Metabolism/ sources of ammonia transport	Elaborate the reactions and regulation of urea cycle. Enlist the inherited and acquired causes of hyperammonemia in each condition. Give the biochemical mechanisms underlying ammonia intoxication. Discuss dietary and therapeutic measures for the management of patients with hyperammonemia (phenylbutyrate, lactulose, antibiotics).	Lecture	Biochemistry	Prof Dr Haroon Habib	Lippincott's 7th ed Ch= 19 Harper's 31st ed Ch= 28
8	R-B-011	Protein Metabolism/ Biosynthesis of NEAA	Trace the pathways for synthesis of non-essential amino acids (NEAA) (alanine, aspartate, glutamate,glutamine, asparagine, proline, serine, glycine, cysteine, and tyrosine)+Trace the pathways for synthesis of non-essential amino acids (NEAA) (alanine, aspartate, glutamate,glutamine, asparagine, proline, serine, glycine, cysteine, and tyrosine)	Lecture	Biochemistry	Prof Dr Haroon Habib	Lippincott's 7th ed Ch= 19 Harper's31st ed Ch= 28
9		Protein Metabolism/ Degradation of carbon skeleton	Discuss the fate of carbon skeletons of amino acids. Categorize amino acids into glucogenic, ketogenic or both depending upon the intermediates produced during their catabolism. Outline the catabolic pathways of amino acids that	lecture	Biochemistry	Prof Dr Haroon Habib	Lippincott's 7th ed Ch= 19 Harper's31st ed Ch= 28

		of amino acids	yield oxaloacetate. Describe the metabolism of methionine. Discuss cause, Key diagnostics features and management of homocystinuria. Outline the catabolic pathways of amino acids that yield α-ketoglutarate. Outline the catabolic pathways of amino acids that yield pyruvate. Outline the catabolic pathways of amino acids that yield fumarate. Outline the catabolic pathways of amino acids that yield succinyl CoA. Outline the catabolic pathways of amino acids that yield acetyl CoA or acetoacetyl CoA. + Discuss the fate of carbon skeletons of amino acids. Categorize amino acids into glucogenic, ketogenic or both depending upon the intermediates produced during their catabolism. Outline the catabolic pathways of amino acids that yield oxaloacetate. Describe the metabolism of methionine. Discuss cause, Key diagnostics features and management of homocystinuria. Outline the catabolic pathways of amino acids that yield α-ketoglutarate. Outline the catabolic pathways of amino acids that yield pyruvate. Outline the catabolic pathways of amino acids that yield fumarate. Outline the catabolic pathways of amino acids that yield succinyl CoA. Outline the catabolic pathways of amino acids that yield acetyl CoA or acetoacetyl CoA.				
10	R-B-013	Protein Metabolism/ Inborn errors of amino acid metabolism	Describe the catabolism of branched chain amino acids. Discuss cause, key diagnostic features, and management of Maple Syrup Urine disease	Lecture	Biochemistry	Prof Dr Haroon Habib	Lippincott 7th edition chapter 20
11	R-B-013	Protein Metabolism/ Inborn errors of amino acid metabolism	Describe the metabolism of tyrosine. Discuss the cause, key diagnostic features, and management of alkaptonuria, albinism, and type 1 tyrosinemia.	Lecture	Biochemistry	Prof Dr Haroon Habib	Lippincott 7th edition chapter 20
12	R-B-013	Protein Metabolism/ Inborn errors of amino acid metabolism	Give cause, key diagnostic features, and management of phenylketonuria (PKU) Elaborate special roles of glycine, tryptophan, phenylalanine, tyrosine, and methionine	Lecture	Biochemistry	Prof Dr Haroon Habib	Lippincott 7th edition chapter 20
13	R-B-022 ,023	Acid Base balance imbalance/ Tetany in alkalosis	Enlist causes of metabolic alkalosis and give its compensation. Enlist causes of respiratory alkalosis and give its compensation. Interpret disorders metabolic and respiratory disorders of acid base balance on basis of sign, symptoms and arterial blood gas (ABG) findings Give biochemical explanation for tetany associated with alkalosis	Lecture	Biochemistry	Prof Dr Haroon Habib	Chatterjee 8th ed Ch = 40, 41

14	R-B-022 ,023	Acid Base balance imbalance/ Tetany in alkalosis	Enlist causes of metabolic alkalosis and give its compensation. Enlist causes of respiratory alkalosis and give its compensation. Interpret disorders metabolic and respiratory disorders of acid base balance on basis of sign, symptoms and arterial blood gas (ABG) findings Give biochemical explanation for tetany associated with alkalosis	Lecture	Biochemistry	Prof Dr Haroon Habib	Chatterjee 8th ed Ch = 40, 41
15	R-B-024	Interpretation of results	Estimate blood urea level and interpret your results.	Practical	Biochemistry	Monday: Dr. Saba Tuesday: Dr. Misbah Wednesday: Dr. Asad Thursday: Dr. Hamza	Lab Manual
16	R-B-024	Interpretation of results	Estimate serum creatinine level and interpret your results. Compare the usefulness of blood urea and serum creatinine in assessment of renal functions	Practical	Biochemistry	Monday: Dr. Maryam Tuesday: Dr. Seemal Wednesday: Dr. Zahra Thursday: Dr. Aleena	Lab Manual
17	R-B-024	Interpretation of results	Determination of proteins in urine by dipstick method and interpret your results.	Practical	Biochemistry	Monday: Dr. Saba Tuesday: Dr. Misbah Wednesday: Dr. Asad Thursday: Dr. Hamza	Lab Manual
18	R-B-024	Interpretation of results	Estimate serum acid phosphatase level and interpret your results.	Practical	Biochemistry	Monday: Dr. Maryam Tuesday: Dr. Seemal Wednesday: Dr. Zahra Thursday: Dr. Aleena	Lab Manual

PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS

No.	Code	Topic	Learning Objective	Teaching strategy	Department	Faculty members	References
1	R-Ph-001	Diuretics	Classify diuretics & carbonic anhydrase inhibitor. MOA, clinical uses, and adverse effects. Describe Thiazide & loop diuretics their Mechanism of Action, clinical uses, and adverse effects. Describe Potassium sparing and osmotic diuretics their mechanism of action, clinical uses, and adverse effects.	Lecture	Pharmacology	Prof Dr Asma	Katzung
2	Integration R-P-005	Renal	Discuss the causes ,pathophysiology ,and features of atonic bladder, neurogenic and automatic.	Lecture	Pthology	Dr nadia	Robbins pathologic basis of disease Chapter21
3	R-Pa-001, 002	Renal	Discuss the etiology and pathogenesis of different types of stones. Identify the causes, morphological aspect and outcome of hydronephrosois	Lecture	Pathology	Prof dr shoukat shah	Robbins pathologic basis of disease Chapter20

4	R-Pa-003	Renal	Enlist common causative agents of urinary tract infections,describe the pathogenesis and clinical fetures of common causative agents of uti.	Lecture	Pathology	Prof dr saeed	Robbins pathologic basis of disease Chapter21

DISEASE PREVENTION AND IMPACT

No.	Code	Topic	Learning Objective	Teaching strategy	Department	Faculty members	References
1	R-Ag-001	Disease prevention	To define preventive care in diseases related to urinary system(adults). Primary, secondary, and tertiary prevention	Lecture	Community medicine	Dr Usman Sheikh	
2	R-BhS-001	Dementia, uremic encephalopathy, delusion, muscle paralysis	To identify the behavioral abnormalities caused by renal function.	Lecture	Behavioral Sciences	Dr Farhat Minhas	Beh-sciences by M.RANA sec E
3	R-BhS-001	Societal impact of renal diseases	To identify the dangers for the patient, his family, and society.	lecture	Behavioral sciences	Dr Farhat Minhas	Beh-sciences by M.RANA sec E

HOLY QURAN

No.	Code	Topic	Learning Objective	Teaching strategy	Department	Faculty members	References
1	Holy Quran	Heirship/Inheritence (Virasat)	i. Heirship and division of wealth in accordance with divine teachings ii. Heirs and their shares iii. Legal aspect of virasat (Hud-e-Illahi)	Lecture	DME	Amna Syed	Standard Islamiyat (compulsory) for B.A, BSc, MA, MSc, MBBS by Prof M Sharif Islahi.
2	Holy Quran	Heirship/Inheritence (Virasat)		Lecture	DME	Amna Syed	Standard Islamiyat (compulsory) for B.A, BSc, MA, MSc, MBBS by Prof M Sharif Islahi.

C-FRC

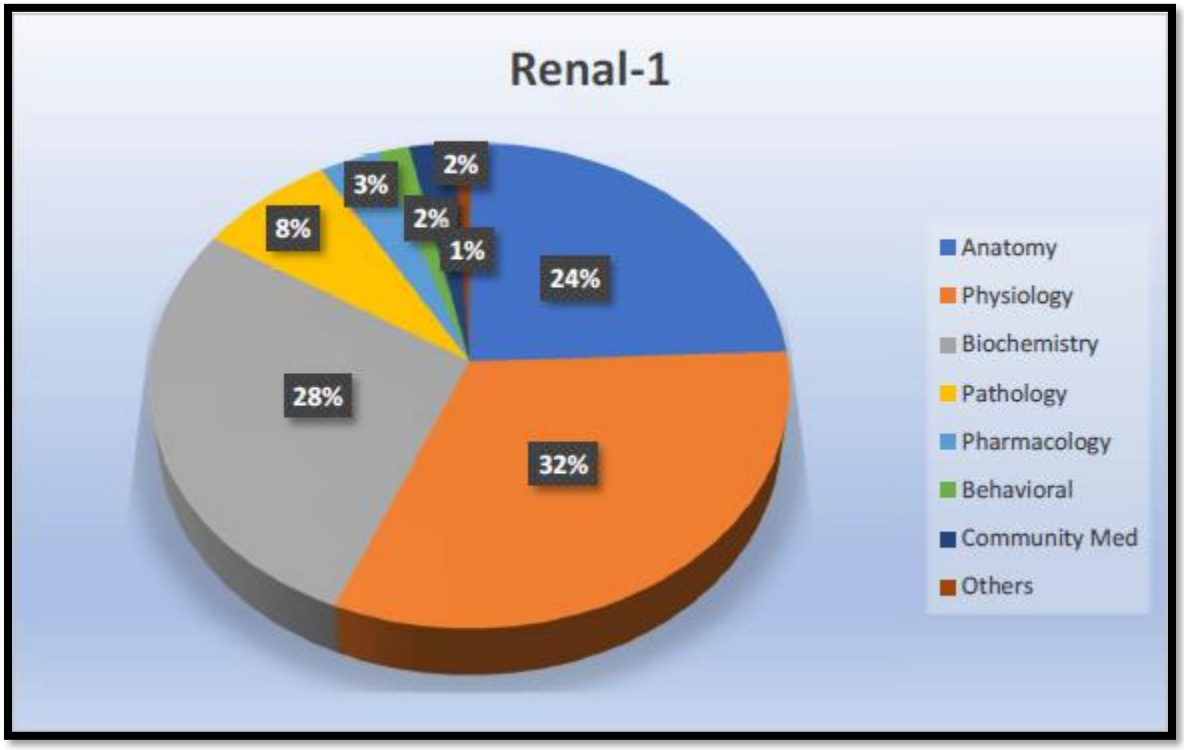
No.	Skill	Objectives	Department	Millers Pyramid level reflected	Log book entries
1	Urnary catheterization	Detail the steps of urinary catheterization in females	Surgery	Knows how	Minimum 1 entery
2	Urinary catheterization	Detail the steps of urinary catheterization in males	Surgery	Knows how	Minimum 1 entry

PERLs

No.	Code	Domain	Learning outcome	Attribute	Topic	Facilitator	Portfolio
1	PERLs-2-07	Research	Identify a topic for literature review	Evidence Based Practitioner	What is research What is the scientific method Developing a	Dr Salar	Research topic finalization process record

					Literature search strategy		
2	PERLs-2-07	Research	Identify a topic for literature review	Evidence Based Practitioner	What is research What is the scientific method Developing a Literature search strategy	Dr Salar	Research topic finalization process record
3	PERLs-2-08	Leadership	Write a report on different coping mechanisms used by you during year 1	Resilient & Adaptable	Comparison between coping strategies Choosing the right coping strategy for academic and personal issues Report writing	Dr Salar	Report

Distribution and duration of teaching activities amongst different disciplines



MODULE WEEKS	**4**	**TOTAL HOURS**	**119**
Anatomy	**29**	Physiology	39
Biochemistry	**34**	Pathology	10
Pharmacology	**4**	Behavioral sciences	4
Community medicine	**4**		

Books and reading resources

Anatomy

- Snell's clinical anatomy by Regions.
- Langman's Medical Embryology 14th Edition
- Laiq H.S. Medical Histology. Paramount Books.
- Laiq H.S. General Anatomy. Paramount Books.

ADDITIONAL READING RESOURCES (only the pages mentioned in studyguide)

- Moore K.L. Clinically Oriented Anatomy. Baltimore, U.S.A. Williams and Wilkins:
- The Developing Human by K.L. Moore.
- General anatomy by Tasadduq Hussain

Physiology

• Guyton AC and Hall JE (2001). Textbook of Medical Physiology. 10th edition. W. B. Sunders & Co.,Philadelphia.

ADDITIONAL READING RESOURCES (only the pages mentioned in studyguide)

- Ganong's Review of Medical physiology
- Human Physiology from cell to system by Lauralae Sherwood

Biochemistry

• Champe, P.C. & Harvey, E.A. Biochemistry (Lippincott's Illustrated Reviews). J.B Lippincott Co.

• Robert K. Murray, Daryl K. Granner, Peter A. Mayes, Victor W. Rodwell. Harper's Biochemistry. McGraw-Hill.

• ABC of Clinical Genetics by H.M. Kingston.

Pathology

• Vinary Kumar, Abul K. Abbas and Nelson Fausto Robbins and Cotran, Pathologic basis of disease. WB Saunders.

• Richard Mitchall, Vinary Kumar, Abul K. Abbas and Nelson Fausto Robbins and Cotran, Pocket Companion to Pathologic basis of diseases. Saunder Harcourt.

Pharmacology

• Basic and Clinical Pharmacology by Katzung, McGraw-Hill.

• Pharmacology by Champe and Harvey, Lippincott Williams & Wilkins

Community medicine

• Parks Textbook of Preventive and Social Medicine. K. Park (Editor)

• Public Health and Community Medicine, Ilyas, Ansari (Editors)

OTHER LEARNING RECOURCES:

- Hands-on Activities/ Practical:

Students will be involved in Practical sessions and hands-on activities that link with the foundation module to enhance the learning.

- Labs:

Utilize the lab to relate the knowledge to the specimens and models available.

- Skill Labs

A skills lab provides the simulators to learn the basic skills and procedures. This helps build the confidence to approach the patients.

- Videos

Video familiarize the student with the procedures and protocols to assist patients.

- Computer Lab/CDs/DVDs/Internet Resources:

To increase the knowledge students should utilize the available internet resources and CDs/DVDs. This will be an additional advantage to increase learning.

- Self-Learning:

Self-Learning is scheduled to search for information to solve cases, read through different resources and discuss among the peers and with the faculty to clarify the concepts.

LEARNING METHODOLOGIES

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

1. Integrated Didactic Lectures
2. Case based discussions- tutorials in small groups
3. Practical
4. Integrated clinical seminar
5. Clinical Skills sessions and log books in hospital/clinical visits
6. E-Learning on Learning management system
7. Self-Directed Study
8. Student presentations
9. Portfolio

Interactive lectures: In large group, the lecturer introduces a topic or common clinical conditions and explains the underlying phenomena through questions, pictures, videos of patients' interviews, exercises, etc. Students are actively involved in the learning process.

Hospital visits: In small groups, students observe patients with signs and symptoms in hospital or clinical settings. This helps students to relate knowledge of basic and clinical sciences of the relevant module.

Small group discussion (SGD): This format helps students to clarify concepts acquire skills or attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics. Students exchange opinions and apply knowledge gained from lectures, tutorials and self-study. The facilitator role is to ask probing questions, summarize, or re phrase to help clarify concepts.

Team-based learning: A small group discussion format where learning is focused around a series of questions based on a clinical scenario. Students' discuss and answer the questions applying relevant knowledge gained in clinical and basic health sciences during the module.

a) **Preparation before class:** Students must complete preparatory materials before a class or the start of the module. Materials may be text, visual or other, and set at a level that is appropriate to the students and the course.

b) **In-class Readiness Assurance Testing:** Students complete an individual readiness assurance test (IRAT), consisting of 5 to 20 multiple choice questions. After submitting

their individual answers, and they take the same test, the team RAT (TRAT), with their team. All members of each team share the same TRAT score, and both IRAT and TRAT scores count toward the students' grades.

c) **Reflective Writing:** Students will write reflective essays for the activities and tasks of the Professionalism, Ethics, Research and Leadership (PERLs) programme for each module and block.

d) The students will develop a Portfolio of the PERLs activities and tasks as assignments and reflective essay

e) **Instructor Feedback**: The instructor reviews material from the RAT that seems to be difficult for students.

f) **In-class application focused exercise:** The remainder of the session is taken up with exercises that help students learn how to apply and extend the knowledge that they have pre-learned and tested. Teams are given an appropriate problem or challenge, and must arrive at a consensus to choose a "best" solution out of options provided. Teams then display their answer choice, and the educator facilitates a classroom discussion between teams to explore the topic and the possible answers to the problem.

Practical: Basic science practicals related to anatomy, biochemistry, pathology, pharmacology and physiology are scheduled for student learning.

Clinical skills session: Clinical Skills relevant to respective module are observed and practiced where applicable in hospital settings, clinical skills laboratory or Department of Physiotherapy.

Self-directed study: Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Center, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.

E-learning: E-Learning is a strategy by which learning occurs through the utilization of electronic media, typically the Internet. The basic aspects of medical professionalism and ethics will be addressed through an e-learning course.

Seminar: A seminar in medical education is an educational activity that is designed to provide a platform for discussion, debate, and exchange of ideas among participants.

TIMETABLES

Week-1

Theme: Protein in urine + kidney stones

TIME TABLE M-22		2nd Year MBBS Week-9 Finalized	SESSION 2023-2024					BLOCK# 4 MODULE:7 THEME: Protein in urine +Kidney Stones	
DATE	DAY	8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00	12.00-12.30	12.30-1.30	1.30-2.30	2.30-3.30
29-Apr-24	MON	Days Off							
30-Apr-24	TUE								
01-May-24	WED	Labour Holiday							
02-May-24	THU	8.00-10.00		10.00-12.00		12.00-12.30	12.30-1.30	1.30-2.30	2.30-3.30
		GRAND TEST -3 PHYSIOLOGY GIT+Renal EXAMINATION HALL-3		OSPE+VIVA		B R E A K	LECTURE EMBRYOLOGY R-A-008 Development of urinary system Prof.Dr. Razia LECTURE HALL 2	KEY DISCUSSION LECTURE HALL 2	SDL ANATOMY
03-May-24	FRI	8.00-9.00	9.00-10.00	10.00-10.30	10.30-11.30	11.30-12.30	12.30-1.30	1.30-2.30	2.30-3.30
		LECTURE PHYSIOLOGY R-P-008 Reabsorption Dr. Shaheena LECTURE HALL 2	LECTURE BIOCHEMISTRY R-B-002 Protein degradation and turnover Prof Dr Haroon Habib LECTURE HALL 2	BREAK	LECTURE PATHOLOGY R-Pa-001&002 Renal stones Prof Dr Zulfiqar LECTURE HALL 2	LECTURE BIOCHEMISTRY R-B-004 Protein Metabolism/ Introduction to Reactions involved in catabolism Prof Dr Haroon Habib LECTURE HALL 2	SDL BIOCHEMISTRY	JUMMA BREAK	SDL PHYSIOLOGY
Prepared by DME			Principal Prof.Dr.Gulfreen Waheed			Date:30th April,2024			

Timetables

Week-2

Theme: Kidney

TIME TABLE M-22		2nd Year MBBS Week-10 Finalized		SESSION 2023-2024				BLOCK# 4 MODULE:7 THEME: Kidney	
DATE	DAY	8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00	12.00-12.30	12.30-1.30	1.30-2.30	2.30-3.30
06-May-24	MON	LECTURE ANATOMY R-A-001 Kidney Dr. Kalsoom LECTURE HALL 2	LECTURE BIOCHEMISTRY R-B-003 Protein Metabolism/ Amino acid pool and nitrogen balance Prof Dr Haroon Habib LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-008 Reabsorption Dr. Shaheena LECTURE HALL 2	LECTURE BEH.SCIENCES EnR-BhS-001 Sexual difficulties and Medical Practices Dr Farhat LECTURE HALL 2		LECTURE HISTOLOGY R-A-010 Juxtaglomerular apparatus Dr. Madiha LECTURE HALL 2	PRACTICAL BATCH A: ANATOMY LAB Dr. Madiha/Dr. Shazia BATCH B: PHYSIOLOGY LAB Dr. Navaira BATCH C: BIOCHEMISTRY LAB Dr. Saba	CSIM (IN 5 BATCHES) Topic:Acromegaly A:Gulfreen Nursing College Lecture Hall-1 B: Gulfreen Nursing College Lecture Hall-2 C:Gulfreen Nursing College Lecture Hall-3 D:Gulfreen Nursing College Lecture Hall-4 E:Gulfreen Nursing College Lecture Hall-5
		8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00		12.30-1.30	1.30-2.30	2.30-3.30
07-May-24	TUE	LECTURE BIOCHEMISTRY R-B-005+006 Protein Metabolism/ Trans deamination Prof DR haroon Habib LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-009,R-P-010 clearance method,Transport Maximum Dr. Nida LECTURE HALL 2	LECTURE ANATOMY R-A-008 Development of urinary system Prof.Dr. Razia LECTURE HALL 2	LECTURE COM.MEDICINE GIT-CM-002 & GIT-CM-003 Preventive Medicine in Peadiatrics. Nutrition & Health Dr Sana/ Dr Usman LECTURE HALL 2		LECTURE PHYSIOLOGY R-P-006 Urine formation Dr. Madiha LECTURE HALL 2	PRACTICAL BATCH B:ANATOMY LAB Dr. Madiha/Dr. Shazia BATCH C:PHYSIOLOGY LAB Dr. Navaira BATCH A: BIOCHEMISTRY LAB Dr. Misbah	CSIM (IN 5 BATCHES) Topic:Acromegaly A:Gulfreen Nursing College Lecture Hall-1 B: Gulfreen Nursing College Lecture Hall-2 C:Gulfreen Nursing College Lecture Hall-3 D:Gulfreen Nursing College Lecture Hall-4 E:Gulfreen Nursing College Lecture Hall-5
		8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00	B R E A K	12.30-1.30	1.30-2.30	2.30-3.30
08-May-24	WED	LECTURE ANATOMY Anatomy of ureter Dr. Kalsoom LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-010 Urine Concentration and dilution Dr. Afsheen LECTURE HALL 2	LECTURE ANATOMY R-A-008 Development of urinary system Prof.Dr. Razia LECTURE HALL 2	LECTURE BIOCHEMISTRY R-B-007 Protein Metabolism/ Deamidation Prof DR haroon Habib LECTURE HALL 2		LECTURE PHYSIOLOGY R-P-008 Reabsorption Dr. Nida LECTURE HALL 2	PRACTICAL BATCH C:ANATOMY LABDr. Madiha/Dr. Shazia BATCH A:PHYSIOLOGY LAB Dr. Navaira BATCH B: BIOCHEMISTRY LAB Dr. Asad	SDL INTEGRATED
		8.00-10.00		10.00-12.00			12.30-1.30	1.30-2.30	2.30-3.30
09-May-24	THU	GRAND TEST -4 integrated Syllabus EXAMINATION HALL-3		OSPE+VIVA			LECTURE PHYSIOLOGY R-P-007 Glomerular filteration Dr. Shaheena LECTURE HALL 2	KEY DISCUSSION LECTURE HALL 2	SDL ANATOMY
		8.00-9.00	9.00-10.00	10.00-10.30	10.30-11.30	11.30-12.30	12.30-1.30	1.30-2.30	2.30-3.30
10-May-24	FRI	LECTURE PHYSIOLOGY R-P-010 Transport Maximum Dr. Nida LECTURE HALL 2	LECTURE ANATOMY EnR-A-001 Diencephalon (Endocrinology) Dr. Kalsoom LECTURE HALL 2	BREAK	LECTURE PHYSIOLOGY R-P-007 Glomerular filteration Dr. Shaheena LECTURE HALL 2	LECTURE BIOCHEMISTRY R-B-008, 009 Protein Metabolism Prof Dr Haroon Habib LECTURE HALL 2	SDL BIOCHEMISTRY	JUMMA BREAK	SDL PHYSIOLOGY
Prepared by DME			Principal Prof.Dr.Gulfreen Waheed		Date:6th May,2024				

Timetable

Week-3

Theme : Ureter

TIME TABLE M-22		2nd Year MBBS Week-11 Finalized	SESSION 2023-2024					BLOCK# 4 MODULE:7 THEME: Ureter	
DATE	DAY	8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00	12.00-12.30	12.30-1.30	1.30-2.30	2.30-3.30
13-May-24	MON	LECTURE ANATOMY EnR-A-003/004/005 Testis, Accessory Male Organs, Prostate Dr. Kalsoom LECTURE HALL 2	LECTURE BIOCHEMISTRY R-B-010 Protein Metabolism/ sources of ammonia transport Prof Dr Haroon Habib LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-011 Urine Concentration and dilution Dr. Afsheen LECTURE HALL 2	PRACTICAL BATCH A: ANATOMY LAB Dr. Madiha/Dr. Shazia BATCH B: HISTOLOGY LAB Dr. Shaista BATCH C: PHYSIOLOGY LAB Dr. Navaira BATCH D: BIOCHEMISTRY LAB Dr. Saba		PRACTICAL BATCH B:ANATOMY LAB Dr. Madiha/Dr. Shazia BATCH C:HITOLOGY LAB Dr. Shaista BATCH D:PHYSIOLOGY LAB Dr. Navaira BATCH A: BIOCHEMISTRY LAB Dr. Misbah	TUTORIAL BATCH A: Dr. Shazia/Dr. Madiha BATCH B: PHYSIOLOGY Dr. Beenish BATCH C: BIOCHEMISTRY Dr. Saba	CSIM (IN 5 BATCHES) Topic:Measurement of blood glucose level A:Skill Lab Lecture Hall-1 B: Skill Lab Lecture Hall-2 C:Skill Lab Lecture Hall-3 D:Skill Lab Lecture Hall-4 E:Skill Lab Lecture Hall-5
		8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00		12.30-1.30	1.30-2.30	2.30-3.30
14-May-24	TUE	LECTURE BIOCHEMISTRY R-B-011 Protein Metabolism/ Biosynthesis of NEAA Prof Dr Haroon Habib LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-012,013 Obligatory Urine Vol.Disorders of urine concentration Dr. Afsheen LECTURE HALL 2	LECTURE ANATOMY EnR-A-001 Diencephalon (Endocrinology) Dr. Kalsoom LECTURE HALL 2	LECTURE PHARMACOLOGY R-Ph-001 Diuretics Prof.Dr. Asma LECTURE HALL 2		LECTURE MEDICINE NEPHROLOGY R-B-022 Acid Base balance imbalance/ Types of acid base disorders Dr Haris Nephrologist LECTURE HALL 2	TUTORIAL BATCH B: ANATOMY Dr. Shazia/Dr. Madiha BATCH C: PHYSIOLOGY Dr. Beenish BATCH A: BIOCHEMISTRY Dr. Misbah	CSIM (IN 5 BATCHES) Topic:Measurement of blood glucose level A:Skill Lab Lecture Hall-1 B: Skill Lab Lecture Hall-2 C:Skill Lab Lecture Hall-3 D:Skill Lab Lecture Hall-4 E:Skill Lab Lecture Hall-5
		8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00		12.30-1.30	1.30-2.30	2.30-3.30
15-May-24	WED	LECTURE PERLs Responsible & Accountable Dr. Salar LECTURE HALL 2	LECTURE EMBRYOLOGY R-A-008 Development of urinary system Prof.Dr. Razia LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-018+R-P-019 Control of ECF osmolarity+Control of ECF Dr. Shaheena LECTURE HALL 2	LECTURE BIOCHEMISTRY Protein Metabolism/ Degradation of carbon skeleton of amino acids Prof Dr Haroon Habib LECTURE HALL 2		TUTORIAL BATCH C: ANATOMY Dr. Shazia/Dr. Madiha BATCH A: PHYSIOLOGY Dr. Beenish BATCH B: BIOCHEMISTRY Dr. Asad	PRACTICAL BATCH C:ANATOMY LAB Dr. Madiha/Dr. Shazia BATCH D:HITOLOGY LAB Dr. Shaista BATCH A:PHYSIOLOGY LAB Dr. Navaira BATCH B: BIOCHEMISTRY LAB Dr. Asad	SDL INTEGRATED
		8.00-10.00		10.00-12.00			12.30-1.30	1.30-2.30	2.30-3.30
16-May-24	THU	GRAND TEST BIOCHEMISTRY CHO Metabolism, GIT, Minerals EXAMINATION HALL-3		OSPE+VIVA BIOCHEMISTRY			LECTURE HISTOLOGY R-A-010 Juxtaglomerular apparatus Dr. Madiha LECTURE HALL 2	KEY DISCUSSION BIOCHEMISTRY LECTURE HALL 2	SDL ANATOMY
		8.00-9.00	9.00-10.00	10.00-10.30	10.30-11.30	11.30-12.30	12.30-1.30	1.30-2.30	2.30-3.30
17-May-24	FRI	LECTURE PHYSIOLOGY R-P-017.018 Renal regulation Of K,Control of ECF osmolarity Dr. Shaheena LECTURE HALL 2	PRACTICAL BATCH D: ANATOMY LAB Dr. Madiha/Dr. Shazia BATCH A: HISTOLOGY Dr. Shaista BATCH B:PHYSIOLOGY LAB Dr. Rabiya BATCH C: BIOCHEMISTRY LAB Dr. Hamza	BREAK	LECTURE PATHOLOGY R-Pa003 UTI Prof Dr Saeed LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-015,016 Osmoreceptor (ADH) feedback mechanism Dr. Afsheen LECTURE HALL 2	SDL BIOCHEMISTRY	JUMMA BREAK	SDL PHYSIOLOGY

Timetable

Week-4

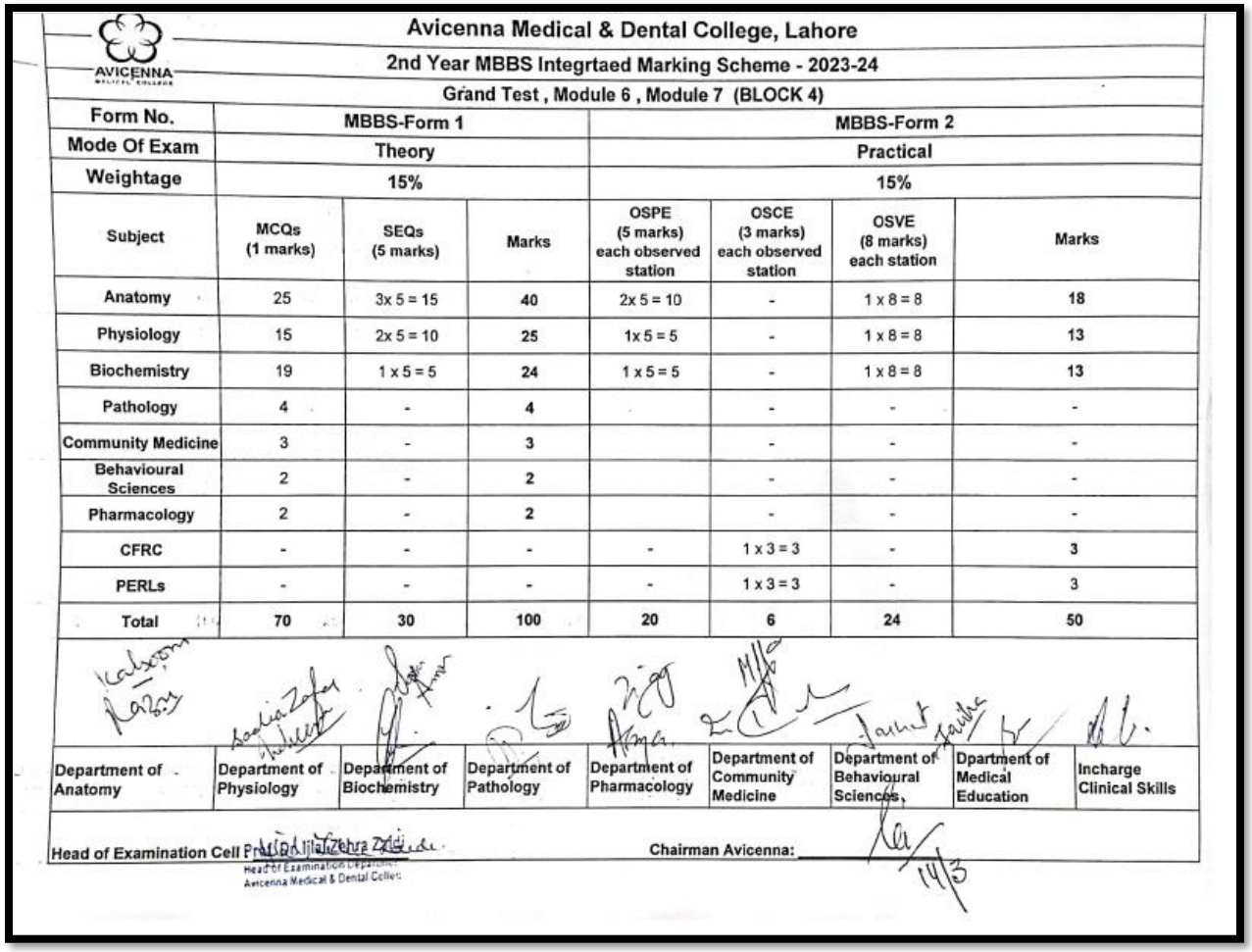
Theme: Urinary bladder

TIME TABLE M-22		2nd Year MBBS Week-12 Finalized	SESSION 2023-2024					BLOCK# 4 THEME: MODULE:7	
DATE	DAY	8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00	12.00-12.30	12.30-1.30	1.30-2.30	2.30-3.30
20-May-24	MON	LECTURE HISTOLOGY R-A-012 Structure of urinary bladder Dr. Madiha LECTURE HALL 2	LECTURE BIOCHEMISTRY R-B-013 Protein Metabolism/ Inborn errors of amino acid metabolism Prof Dr Haroon Habib LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-019,R-P-020 Renal Regulation of calcium Renal Regulation of phosphate Dr. Madiha LECTURE HALL 2	LECTURE COM.MEDICINE R-Ag-001 Disease prevention in urinary ssytem Dr Usman/ Dr Sana LECTURE HALL 2	B R E A K	TUTORIAL BATCH A:ANATOMY Dr. Shazia/Dr. Madiha BATCH B: PHYSIOLOGY Dr. Beenish BATCH C: BIOCHEMISTRY Dr. Saba	PRACTICAL BATCH A: ANATOMY LAB Dr. Madiha/Dr. Shazia BATCH B: HISTOLOGY LAB Dr. Shaista BATCH C: PHYSIOLOGY LAB Dr. Navaira BATCH D: BIOCHEMISTRY LAB Dr. Saba	CSIM (IN 5 BATCHES) Topic:Examination of the Nose A:Gulfreen Nursing College Lecture Hall-1 B: Gulfreen Nursing College Lecture Hall-2 C:Gulfreen Nursing College Lecture Hall-3 D:Gulfreen Nursing College Lecture Hall-4 E:Gulfreen Nursing College Lecture Hall-5
		8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00		12.30-1.30	1.30-2.30	2.30-3.30
21-May-24	TUE	LECTURE PHARMACOLOGY R-Ph-001 Diuretics Prof.Dr.Asma LECTURE HALL 2	PRACTICAL BATCH B:ANATOMY LAB Dr. Madiha/Dr. Shazia BATCH C:HITOLOGY LAB Dr. Shaista BATCH D:PHYSIOLOGY LAB Dr. Navaira BATCH A: BIOCHEMISTRY LAB Dr. Misbah	LECTURE EMBRYOLOGY R-A-008 Development of urinary system Prof.Dr. Razia LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-21,R-P-22 Renal body fluid feed back control Dr. Madiha LECTURE HALL 2		LECTURE BIOCHEMISTRY R-B-013 Protein Metabolism/ Inborn errors of amino acid metabolism Prof Dr Haroon Habib LECTURE HALL 2	LECTURE HOLY QURAN Heirship/Inheritence (Virasat) Lecture Notes Amna Syed LECTURE HALL 2	CSIM (IN 5 BATCHES) Topic:Examination of the Nose A:Gulfreen Nursing College Lecture Hall-1 B: Gulfreen Nursing College Lecture Hall-2 C:Gulfreen Nursing College Lecture Hall-3 D:Gulfreen Nursing College Lecture Hall-4 E:Gulfreen Nursing College Lecture Hall-5
		8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00		12.30-1.30	1.30-2.30	2.30-3.30
22-May-24	WED	LECTURE ANATOMY EnR-A-006 Testis clinical conditions Dr. Kalsoom LECTURE HALL 2	LECTURE BIOCHEMISTRY R-B-013 Protein Metabolism/ Inborn errors of amino acid metabolism Prof Dr Haroon Habib LECTURE HALL 2	LECTURE PHYSIOLOGY R-P-23,R-P-24 Acid base balance Dr. Nida LECTURE HALL 2	LECTURE EMBRYOLOGY R-A-008 Development of urinary system Prof.Dr. Razia LECTURE HALL 2		TUTORIAL BATCH B: ANATOMY Dr. Shazia/Dr. Madiha BATCH C: PHYSIOLOGY Dr. Beenish BATCH A: BIOCHEMISTRY Dr. Saba	PRACTICAL BATCH C:ANATOMY LABDr. Madiha/Dr. Shazia BATCH D:HITOLOGY LAB Dr. Shaista BATCH A:PHYSIOLOGY LAB Dr. Navaira BATCH B: BIOCHEMISTRY LAB Dr. Asad	SDL INTEGRATED
		8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00		12.30-1.30	1.30-2.30	2.30-3.30
23-May-24	THU	LECTURE BIOCHEMISTRY R-B-022 ,023 Acid Base balance imbalance/ Tetany in alkalosis Prof Dr Haroon Habib LECTURE HALL 2	LECTURE ANATOMY EnR-A-006 Testis clinical conditions Dr. Kalsoom LECTURE HALL 2	LECTURE PHYSIOLOGY EnR-P-001 Endocrinology Dr. Nida LECTURE HALL 2	LECTURE BIOCHEMISTRY R-B-022 ,023 Acid Base balance imbalance/ Tetany in alkalosis Prof Dr Haroon Habib LECTURE HALL 2		LECTURE PHYSIOLOGY EnR-P-001 Endocrinology Dr. Madiha LECTURE HALL 2	LECTURE HOLY QURAN Heirship/Inheritence (Virasat) Lecture Notes Amna Syed LECTURE HALL 2	SDL ANATOMY
		8.00-9.00	9.00-10.00	10.00-10.30	10.30-11.30	11.30-12.30	12.30-1.30	1.30-2.30	2.30-3.30
24-May-24	FRI	LECTURE PHYSIOLOGY R-P-24 Acid base balance Dr. Madiha LECTURE HALL 2	PRACTICAL BATCH D: ANATOMY LAB Dr. Madiha/Dr. Shazia BATCH A: HISTOLOGY Dr. Shaista BATCH B:PHYSIOLOGY LAB Dr. Rabiya BATCH C: BIOCHEMISTRY LAB Dr. Hamza	BREAK	TUTORIAL BATCH C: ANATOMY Dr. Shazia/Dr. Madiha BATCH A: PHYSIOLOGY Dr. Beenish BATCH B: BIOCHEMISTRY Dr. Saba	LECTURE MEDICINE NEPHROLOGY R-Pa-004 ,R-Pa-005 Glomerulonephritis & Acute Kidney Injury Dr Haris Nephrologist LECTURE HALL 2	SDL BIOCHEMISTRY	JUMMA BREAK	SDL PHYSIOLOGY
Prepared by DME			Principal Prof.Dr.Gulfreen Waheed		Date:22 May,2024				

ASSESSMENTS

Assessment policy

Marking scheme for Block-4



Avicenna Medical & Dental College, Lahore

2nd Year MBBS Integrtaed Marking Scheme - 2023-24

Grand Test , Module 6 , Module 7 (BLOCK 4)

Form No.	MBBS-Form 1			MBBS-Form 2			
Mode Of Exam	Theory			Practical			
Weightage	15%			15%			
Subject	MCQs (1 marks)	SEQs (5 marks)	Marks	OSPE (5 marks) each observed station	OSCE (3 marks) each observed station	OSVE (8 marks) each station	Marks
Anatomy	25	3x 5 = 15	40	2x 5 = 10	-	1 x 8 = 8	18
Physiology	15	2x 5 = 10	25	1x 5 = 5	-	1 x 8 = 8	13
Biochemistry	19	1 x 5 = 5	24	1 x 5 = 5	-	1 x 8 = 8	13
Pathology	4	-	4		-	-	-
Community Medicine	3	-	3		-	-	-
Behavioural Sciences	2	-	2		-	-	-
Pharmacology	2	-	2		-	-	-
CFRC	-	-	-	-	1 x 3 = 3	-	3
PERLs	-	-	-	-	1 x 3 = 3	-	3
Total	70	30	100	20	6	24	50

Department of Anatomy	Department of Physiology	Department of Biochemistry	Department of Pathology	Department of Pharmacology	Department of Community Medicine	Department of Behavioural Sciences	Dpartment of Medical Education	Incharge Clinical Skills

Head of Examination Cell Professor Nafeesa Zahra Zaidi — Head of Examination Department, Avicenna Medical & Dental College

Chairman Avicenna: 14/3

Assessment schedule

Grand test-3 : 2nd May, 2024

Grand test-4 : 9th May, 2024

Grand test Biochemistry : 16th May, 2024

Module-7 integrated exam: 31st May, 2024

Assessment tools

Assessment tools for Theory

• Multiple Choice Questions (MCQ)

• Structured Essay Questions (SEQ)

• PERLs Portfolio Reflective Assignments

Assessment tools for Practical, Clinical and Human (soft) skills

• Objective Structured Practical Examination

• Structured Viva

• Logbook & clinical skills OSCE

• Portfolio

• Feedback (simple and/or 360 degree)

MODULAR & GENERAL EXAMINATION RULES AND REGULATIONS:

- Student must report to examination hall/venue, 30 minutes before the exam.
- Exam will begin sharp at the given time.
- No student will be allowed to enter the examination hall after 15 minutes of scheduled examination time.
- Students must sit according to their roll numbers mentioned on the seats.
- Cell phones are strictly not allowed in examination hall.
- If any student is found with cell phone in any mode (silent, switched off or on) he/she will be not be allowed to continue their exam.
- No students will be allowed to sit in exam without College Identity Card, College ID Card and Lab Coat

- Student must bring the following stationary items for the exam: Pen, Pencil, Eraser, and Sharpener.
- Indiscipline in the exam hall/venue is not acceptable. Students must not possess any written material or communicate with their fellow students.