

References for the Surgery field of the Postgraduate Medical Education (PGME) entrance examination

- The References for Postgraduate Medical Education (PGME) Entrance examination consist of two sections (Paraclinic and clinic).
- Out of the total questions, 70% are derived from the paraclinical section, while 30% are taken from the clinical section. The reference materials for these sections are selected by the Postgraduate Medical Education (PGME) Examination Board and has been approved by his Excellency Ministry of Public Health (MoPH) leadership.

Table 1: Textbooks for reference

Sr.No	Paraclinical section (Surgery)
1	Guyton And Hall Textbook of Medical Physiology (15 th edition)
2	Clinical Anatomy by Regions-Richard Snell (12 th edition)
3	Robbins and Kumar Basic Pathology (11th edition)
4	Junqueira's Basic Histology Text and Atlas (17 th edition)
5	Lippincott Illustrated Reviews Biochemistry (8 th edition)
6	Jawetz, Melnick and Adelberg's Medical Microbiology (28 edition)
7	Lippincott Illustrated Reviews Pharmacology (8 th edition)
Clinical section (Surgery)	
1	Essentials of General Surgery and Surgical Specialties Peter F.Lawrence 6 th edition

Table 2: Selected chapters and Topics of Paraclinic section

Sr.No.	Subject	Chapter	Topics
1	Physiology	CHAPTER 1	Functional Organization of the Human Body
		CHAPTER 2	The Cell and Its Functions
		CHAPTER 4	Transport of Substances Through Cell Membranes
		CHAPTER 5	Membrane Potentials and Action Potentials
		CHAPTER 6	Contraction of Skeletal Muscle
		CHAPTER 7	Excitation of Skeletal Muscle: Neuromuscular Transmission and Excitation-Contraction Coupling
		CHAPTER 8	Excitation and Contraction of Smooth Muscle
		CHAPTER 9	Cardiac Muscle; The Heart as a Pump and Function of the Heart Valves
		CHAPTER 11	The Normal Electrocardiogram
		CHAPTER 14	Overview of the Circulation; Biophysics of Pressure, Flow, and Resistance
		CHAPTER 15	Vascular Distensibility and Functions of the Arterial and Venous Systems
		CHAPTER 16	The Microcirculation and Lymphatic System: Capillary Fluid Exchange, Interstitial Fluid, and Lymph Flow
		CHAPTER 20	Cardiac Output, Venous Return, and Their Regulation
		CHAPTER 23	Heart Valves and Heart Sounds; Valvular and Congenital Heart Defects
		CHAPTER 24	Circulatory Shock
		CHAPTER 25	The Body Fluid Compartments: Extracellular and Intracellular Fluids; Edema
		CHAPTER 26	The Urinary System: Urine Formation by the Kidneys
		CHAPTER 27	Glomerular Filtration, Renal Blood Flow, and Their Control



		CHAPTER 28	Renal Tubular Reabsorption and Secretion
		CHAPTER 30	Renal Regulation of Potassium, Calcium, Phosphate, and Magnesium; Integration of Renal Mechanisms for Control of Blood Volume and Extracellular Fluid Volume
		CHAPTER 33	Red Blood Cells, Anemia, and Polycythemia
		CHAPTER 34	Resistance of the Body to Infection: I. Leukocytes, Granulocytes, the Monocyte-Macrophage System, and Inflammation
		CHAPTER 35	Resistance of the Body to Infection: II. Immunity and Allergy
		CHAPTER 36	Blood Types; Transfusion; Tissue and Organ Transplantation
		CHAPTER 37	Hemostasis and Blood Coagulation
		CHAPTER 38	Pulmonary Ventilation
		CHAPTER 42	Regulation of Respiration
		CHAPTER 46	Organization of the Nervous System, Basic Functions of Synapses, and Neurotransmitters
		CHAPTER 47	Sensory Receptors, Neuronal Circuits for Processing Information
		CHAPTER 50	The Eye: I. Optics of Vision
		CHAPTER 51	The Eye: II. Receptor and Neural Function of the Retina
		CHAPTER 53	The Sense of Hearing
		CHAPTER 54	The Chemical Senses—Taste and Smell
		CHAPTER 55	Motor Functions of the Spinal Cord; the Cord Reflexes
		CHAPTER 58	Cerebral Cortex, Intellectual Functions of the Brain, Learning, and Memory
		CHAPTER 62	Cerebral Blood Flow, Cerebrospinal Fluid, and Brain Metabolism
		CHAPTER 63	General Principles of Gastrointestinal Function—Motility, Nervous Control, and Blood Circulation
		CHAPTER 65	Secretory Functions of the Alimentary Tract
		CHAPTER 66	Digestion and Absorption in the Gastrointestinal Tract
		CHAPTER 68	Metabolism of Carbohydrates and Formation of Adenosine Triphosphate
		CHAPTER 69	Lipid Metabolism
		CHAPTER 70	Protein Metabolism
		CHAPTER 71	The Liver as an Organ
		CHAPTER 74	Body Temperature Regulation and Fever
		CHAPTER 76	Pituitary Hormones and Their Control by the Hypothalamus
		CHAPTER 77	Thyroid Metabolic Hormones
		CHAPTER 81	Reproductive and Hormonal Functions of the Male (and Function of the Pineal Gland)
		CHAPTER 82	Female Physiology Before Pregnancy and Female Hormones
		CHAPTER 83	Pregnancy and Lactation
		CHAPTER 84	Fetal and Neonatal Physiology
2	Anatomy	CHAPTER 2	- The Back ➤ Vertebral Column, Back Muscles, Deep Fascia, Back Blood Supply, Lymph Drainage, Spinal Cord, , Surface Anatomy
		CHAPTER 3	- Upper Limb ➤ Osteology, Upper Limb Regions, Muscles, Nerves, Vasculature, Lymph, Joints, , Surface Anatomy
		CHAPTER 4	- Thoracic Wall ➤ Osteology, Joints, Thoracic Openings, Muscles, Nerves, Vasculature, , Surface Anatomy
		CHAPTER 5	- Thoracic Cavity ➤ Mediastinum, Pleura, Lower Respiratory Tract, Lungs, Pericardium, Heart, Large Thoracic Arteries, Large Thoracic Veins, Thoracic Lymphatics, Thoracic Nerves, Esophagus, Thymus
		CHAPTER 6	- Abdominal Wall ➤ Anterolateral Abdominal Wall, Posterior Abdominal Wall, Surface Anatomy
		CHAPTER 7	- Abdominal Cavity ➤ Peritoneum, Gastrointestinal Tract, Gastrointestinal Tract Accessory Organs, Retroperitoneal Space, Urinary Tract, Suprarenal Glands, Posterior Abdominal Wall, Surface Anatomy
		CHAPTER 8	- Pelvic Walls ➤ Pelvis, Pelvic Fascia, Pelvic Peritoneum, Pelvic Nerves, Pelvic Arteries, Pelvic Veins, Pelvic Lymphatics, Surface Anatomy
		CHAPTER 9	- Pelvic Cavity ➤ Gastrointestinal Tract, Urinary Tract, Male Internal Genital Organs, Female Internal Genital Organs
		CHAPTER 10	Perineum



			➤ Anal Triangle, Urogenital Triangle, Male Urogenital Triangle, Female Urogenital Triangle, Surface Anatomy
		CHAPTER 11	• Lower Limb ➤ Osteology, Gluteal Region, Thigh, Popliteal Fossa, Leg, Ankle, Foot, Joints, Foot as Functional Unit, Surface Anatomy
		CHAPTER 12	• Head and Neck ➤ Osteology, Scalp, Face, Interior of the Skull, Orbit and Eye, Temporal Infratemporal and Pterygopalatine Fossa, Neck, Head and Neck Arteries, Head and Neck Veins, Head and Neck Lymph Drainage, Cranial Nerves, Cervical Plexus, Brachial Plexus, Autonomic Nerves System, Ear, Digestive System, Respiratory System, Endocrine System, Surface Anatomy
3	Pathology	CHAPTER 1	The Cell as a Unit of Health and Disease
		CHAPTER 2	Cell Injury, Cell Death, and Adaptations
		CHAPTER 3	Inflammation and Repair
		CHAPTER 4	Hemodynamic Disorders, Thromboembolism, and Shock
		CHAPTER 5	Diseases of the Immune System
		CHAPTER 6	Neoplasia
		CHAPTER 8	Environmental and Nutritional Diseases
		CHAPTER 9	General Pathology of Infectious Diseases
		CHAPTER 10	Blood Vessels
		CHAPTER 11	
		CHAPTER 12	Hematopoietic and Lymphoid Systems
		CHAPTER 14	Kidney and Its Collecting System
		CHAPTER 16	Liver and Gallbladder
		CHAPTER 18	Male Genital System and Lower Urinary Tract
		CHAPTER 19	Female Genital System and Breast
		CHAPTER 22	Peripheral Nerves and Muscles
		CHAPTER 23	Central Nervous System
4	Histology	CHAPTER 1	Histology & Its Methods of Study
		CHAPTER 2	The Cytoplasm
		CHAPTER 3	The Nucleus
		CHAPTER 4	Epithelial Tissue
		CHAPTER 5	Connective Tissue
		CHAPTER 6	Adipose Tissue
		CHAPTER 7	Cartilage
		CHAPTER 8	Bone
		CHAPTER 9	Nerve Tissue & the Nervous System
		CHAPTER 10	Muscle Tissue
		CHAPTER 11	The Circulatory System
		CHAPTER 12	Blood
		CHAPTER 13	Hemopoiesis
		CHAPTER 14	The Immune System & Lymphoid Organs
		CHAPTER 19	The Urinary System
		CHAPTER 21	The Male Reproductive System
		CHAPTER 22	The Female Reproductive System
		CHAPTER 23	The Eye & Ear: Special Sense Organs
5	Biochemist	CHAPTER 1	Amino acid
		CHAPTER 2	Protein Structure
		CHAPTER 3	Globular Proteins
		CHAPTER 4	Fibrous Proteins
		CHAPTER 5	Enzymes
		CHAPTER 7	Introduction to Carbohydrates
		CHAPTER 11	Glycogen Metabolism



		CHAPTER 16	Fatty Acid, Triacylglycerol, and Ketone Body Metabolism
		CHAPTER 18	Cholesterol, Lipoprotein, and Steroid Metabolism
		CHAPTER 21	Amino Acids: Conversion to Specialized Products
		CHAPTER 23	Metabolic Effects of Insulin and Glucagon
		CHAPTER 26	Obesity
		CHAPTER 27	Nutrition: Overview and Macronutrients
		CHAPTER 28	Micronutrients: Vitamins
		CHAPTER 29	Micronutrients: Minerals
6	Microbiology	CHAPTER 32	Protein Synthesis
		CHAPTER 1	The Science of Microbiology
		CHAPTER 3	Classification of Bacteria
		CHAPTER 9	Pathogenesis of Bacterial Infection
		CHAPTER 11	Spore-Forming Gram-Positive Bacilli: Bacillus and Clostridium Species
		CHAPTER 12	Aerobic Non-Spore-Forming Gram-Positive Bacilli: Corynebacterium, Listeria, Nocardia, and Related Pathogens
		CHAPTER 13	The Staphylococci
		CHAPTER 14	The Streptococci, Enterococci, and Related Genera
		CHAPTER 16	Pseudomonads
		CHAPTER 21	Infections Caused by Anaerobic Bacteria
		CHAPTER 23	Mycobacteria
		CHAPTER 27	Chlamydia spp.
		CHAPTER 29	General Properties of Viruses
		CHAPTER 30	Pathogenesis and Control of Viral Diseases
		CHAPTER 33	Herpes viruses
		CHAPTER 35	Hepatitis Viruses
		CHAPTER 43	Human Cancer Viruses
		CHAPTER 45	Medical Mycology
		CHAPTER 46	Medical Parasitology
		CHAPTER 47	Principles of Diagnostic Medical Microbiology
		CHAPTER 48	Cases and Clinical Correlations
7	Pharmacology	The whole book	



Table 3: Selected Subjects, Topics and Subtopics of clinic section(Surgery)

Subject(s)	Topic	Subtopics
Chapter 1 Perioperative Evaluation and Management of Surgical Patients	PREOPERATIVE EVALUATION	• Preoperative Screening Tests and Consultations ➢ Cardiac Evaluation ➢ Pulmonary Evaluation • THE PATIENT WITH RENAL DYSFUNCTION • PATIENT WITH HEPATIC DYSFUNCTION • THE DIABETIC PATIENT • THE ADRENALLY INSUFFICIENT PATIENT • THE PREGNANT PATIENT • THE GERIATRIC PATIENT
	OPERATIVE MANAGEMENT	• Wound Care • Pain Management • Deep Vein Thrombosis Prophylaxis
	POSTOPERATIVE COMPLICATIONS	• Atelectasis • Surgical Wound Failure • Surgical-Site Infection • Fever
Chapter 2 Fluids, Electrolytes, and Acid-Base Balance	FLUID AND ELECTROLYTE DISORDERS IN THE SURGICAL PATIENT	• Disorders of Sodium Balance ➢ Hyponatremia ➢ Hypernatremia • Disorders of Potassium Balance ➢ Hypokalemia ➢ Hyperkalemia • Disorders of Calcium Balance ➢ Hypocalcemia ➢ Hypercalcemia • Disorders of Magnesium Balance ➢ Hypomagnesemia ➢ Hypermagnesemia • Disorders of Phosphate Balance ➢ Hypophosphatemia ➢ Hyperphosphatemia • Disorders of Acid-Base Balance ➢ Respiratory Acidosis ➢ Metabolic Acidosis ➢ Respiratory Alkalosis ➢ Metabolic Alkalosis
Chapter 3 Surgical Nutrition	OVERVIEW OF METABOLISM	• Impact of Starvation and Stress • Determining Energy Requirements
	Macronutrient Requirements	• Carbohydrate • Protein • Lipids
	Other Requirements	• Fluid and Electrolytes • Vitamins and Minerals



Chapter 9 Trauma	INITIAL ASSESSMENT	• Primary Survey ➤ Airway ➤ Breathing ➤ Circulation ➤ Disability ➤ Exposure • Secondary Survey
	HEAD INJURY	• Clinical Evaluation • Management of Head Injuries
	INJURIES OF THE SPINE AND SPINAL CORD THORACIC INJURY	➤ Life-Threatening Injuries Detected during Primary Survey ➤ Potentially Severe Injuries Detected during Secondary Survey ➤ ED Thoracotomy
	ABDOMINAL INJURY	• Anatomic Considerations • Initial Evaluation • Adjunctive Diagnostic Tools • Operative Care • INJURY TO SPECIFIC ORGANS ➤ Liver ➤ Spleen ➤ Pancreas ➤ Diaphragm ➤ Kidneys ➤ Small Intestine and Mesentery ➤ Colon ➤ Damage Control ➤ Abdominal Compartment Syndrome • PELVIC FRACTURES • PENETRATING NECK TRAUMA ➤ Aerodigestive Tract Injury ➤ Vascular Injury ➤ Spinal Cord Injury • EXTREMITY TRAUMA • TRAUMA IN PREGNANCY • PEDIATRIC TRAUMA • TRAUMA IN THE ELDERLY
Chapter 10 Burns	INITIAL CARE OF THE BURN PATIENT	• Stop the Burning Process • Primary Survey • Resuscitation • Secondary Survey • Burn Center Referral
Chapter 18 Breast	Diagnostic evaluation	• Mammography • Ultrasound • MRI • Tissue sampling technique • Mass evaluation



Chapter 23 Surgical Diseases of Children	Benign condition of breast	• Fibro adenoma • Breast cysts • Nipple discharge • Erythematous breast
	PERIOPERATIVE MANAGEMENT OF THE PEDIATRIC SURGICAL PATIENT	• Fluids and Electrolytes ➤ Maintenance requirements ➤ Replacement of preexisting deficits ➤ Replacement of ongoing abnormal losses • Nutrition ➤ Enteral Nutrition ➤ Parenteral Nutrition • Respiratory Management • Preoperative Evaluation and Preparation • Operative Care and Monitoring • Postoperative Care and Pain Management • Emotional Support
	Acute Abdomen	• Appendicitis ➤ Clinical Presentation and Evaluation ➤ Treatment ➤ Common Complications • Intussusception ➤ Clinical Presentation and Evaluation ➤ Treatment • Meckel's Diverticulum ➤ Clinical Presentation and Evaluation ➤ Treatment • Gastrointestinal Bleeding • Gastroesophageal Reflux ➤ Clinical Presentation and Evaluation ➤ Treatment ➤ Common Complications • Chest Wall Deformities ➤ Clinical Presentation and Evaluation ➤ Treatment ➤ Common Complications • Neck Masses ➤ Midline Neck Masses ➤ Lateral Neck Masses
	TRAUMA	• Differences in Trauma Care between Adults and Children ➤ Evaluation of the Injured Child • Head Injuries • Chest Injuries • Abdominal Injuries • Urinary Tract Injuries • Burns ➤ Clinical Findings ➤ Treatment • Child Abuse



		• Foreign Body Aspiration and Ingestion ➤ Aspiration ➤ Clinical Manifestations ➤ Treatment ➤ Ingestion • Regulatory Consideration and Resource Allocation
Chapter 24 Diseases of the Skin and Soft Tissue, Face, and Hand	WOUND HEALING	• Types of Wounds and Their Treatment ➤ Lacerations ➤ Abrasions ➤ Contusions ➤ Avulsions ➤ Bites • Contaminated Wounds ➤ Contaminated Chronic Wounds • Wound Management
Chapter 25 Diseases of the Heart, Great Vessels, and Thoracic Cavity	DISEASES OF THE THORACIC CAVITY: CHEST WALL, MEDIASTINUM, AND LUNGS	• CLINICAL PRESENTATION AND EVALUATION ➤ Hemoptysis ➤ Pleural Effusion ➤ Lung Abscess ➤ Pneumothorax ➤ Empyema ➤ Trauma ✓ Open Pneumothorax ✓ Tension Pneumothorax ✓ Massive Hemothorax ✓ Flail Chest
Chapter 26 Diseases of the Vascular System	VASCULAR TRAUMA	• Causes • Clinical presentations and diagnosis • Treatment
	The Surgical Airway	• Cricothyrotomy ➤ Definition and Indications ➤ Procedure to perform ➤ Complication • Tracheotomy ➤ Definition and Indications ➤ Procedure ➤ Complications
Chapter 28 Diseases of the Musculoskeletal System	Fractures	➤ Types ➤ Site ➤ Pattern ➤ Displacement
	The Salter-Harris Classification of Growth Plate Fractures	➤ Causes ➤ Diagnosis ➤ Treatment ➤ Consequences ➤ Prognosis
	Evaluation of Patients with Musculoskeletal Trauma	➤ Clinical manifestation ➤ Diagnostic approach



	Principles of Fracture Management	➤ Advantages of splinting ➤ Condition taken in consideration during splinting ➤ Medical and preventive measures ➤ Stages of fracture healing ➤ Reduction ➤ Maintenance of reduction ➤ Different method for immobilization of fracture after reduction ➤ Skeletal traction ➤ Complications of traction and casting
	Rehabilitation of function after fracture	➤ Advantages ➤ Phases of rehabilitation ➤ Side effect of inappropriate rehabilitation usage ➤ Appropriate time for rehabilitation
	Complications of Fracture Healing	➤ Local complications types ➤ Systemic complications varieties
	Spinal fracture	➤ Causes ➤ Clinical features ➤ Diagnosis ➤ Treatment
	TRAUMATIC AMPUTATIONS AND REPLANTATION	• COMPARTMENT SYNDROME ➤ Causes and risk factors ➤ Clinical features ➤ Diagnosis ➤ Treatment ➤ Complications
	SEPTIC ARTHRITIS	➤ Causes ➤ Progress of disease ➤ Evaluations ➤ Treatment
	NECROTIZING FASCIITIS	➤ Causes and risk factors ➤ Types of fasciitis ➤ Clinical features ➤ Diagnosis ➤ Treatment
Chapter 29 Diseases of the Genitourinary System	METABOLIC ENDOCRINE DISORDERS	• OSTEOPOROSIS ➤ Causes ➤ Mechanism of occurring ➤ Clinical diagnosis and features ➤ Treatment and prevention • OSTEOMALACIA ➤ Causes ➤ Mechanism of occurring ➤ Clinical diagnosis and features ➤ Treatment and prevention
	KIDNEYS	• Trauma ➤ Mechanisms of trauma ➤ Evaluation ➤ Grades of renal trauma



		➤ Treatment • Pyelonephritis ➤ Cause ➤ Clinical feature ➤ Examination ➤ Treatment • Urinary Stone Disease ➤ Types of stone ➤ Risk factors for formation of stones ➤ Mechanism of stone formation ➤ Clinical features ➤ Diagnosis ➤ Treatment
	THE URETERS	• Iatrogenic Injuries to the Ureters ➤ Mechanism of injury ➤ Treatment
	THE BLADDER	• Evaluation ➤ Cystourethroscopy ➤ Urodynamic evaluation • Trauma ➤ Causes ➤ Clinical feature ➤ Evaluation ➤ Treatment • Bacterial cystitis (UTI) ➤ Infectious causes • Clinical feature ➤ Evaluation ➤ Treatment
	THE URETHRA	• Trauma ➤ Causes and mechanism of trauma ➤ Clinical feature ➤ Evaluation ➤ Treatment
	THE TESTES, MALE INFERTILITY, AND IMPOTENCY	• Trauma of testis ➤ Mechanism of injury ➤ Treatment • Scrotal infection ➤ Cause ➤ Clinic ➤ Evaluation ➤ Treatment
Chapter 30 Diseases of the Nervous System	CRANIAL AND CEREBROVASCULAR DISEASE	• Neurological evaluation ➤ Glasgow coma scale ➤ Cerebral function testing ➤ Motor assessment ➤ Sensor examination • Brain Death ➤ Definition



- Determination of brain death
- Laboratory tests
- Lumbar puncture
 - Main site for safe puncture
 - Diagnostic importance
 - Indications
- CT Scan
 - Indications
 - disadvantages
- MRI
 - Indication
 - Limitations
- Head injury
 - Causes and mechanism of trauma
 - Types
 - Clinic
 - Evaluation of acute injury
 - Treatment
- Closed Head Injury
 - Concussion
 - Closed Skull Fractures
 - Subdural Hematomas
 - Epidural Hematomas
 - Contusions and Intraparenchymal Hematomas
- Penetrating Head Injury
 - Open Skull Fractures
 - Cerebral Gunshot Wounds and Other Projectile Injuries
- Traumatic Cerebrospinal Fluid Leak
 - Cause
 - treatment
- Brain Attack and Cerebrovascular Disease
 - Stroke
 - Transient Ischemic Attacks
 - Ischemic Infarction
- Intraparenchymal Hemorrhage
 - Causes
 - Clinical feature
 - Prognosis
- Hypertensive Hemorrhage
 - Cause
 - Clinical feature
 - evaluation
 - Treatment
- Cerebral Infection
 - Meningitis,
 - Tuberculosis
 - Subdural Empyema
- Cerebral Abscess
 - Causes



		➤ Clinical feature ➤ Evaluation ➤ Treatment
	SPINE AND SPINAL CORD DISEASE	• Neuroimaging ➤ CT scan ➤ MRI ➤ Angiography • Spinal trauma ➤ Types ➤ Evaluation ➤ Complications ➤ Spinal stabilization • spinal fractures ➤ C1 Jefferson fracture ➤ C2 Odontoid fracture ➤ C2 Hangman's fracture ➤ Thoracolumbar compression and burst fracture ➤ Lumbosacral fracture and dislocation • Spinal Cord Injury Sequelae ➤ Name the sequelae ➤ Preventive measure not occur sequelae

