JINNAH SINDH MEDICAL UNIVERSITY

STUDY GUIDE	
PROGRAM	**MBBS**
MODULE TITLE	**GIT & Hepatobiliary-II**
ACADEMIC YEAR	**3rd Year-2024**
INTRODUCTION	This module is connected with and builds on the GIT Module-I. It provides in depth knowledge of gastrointestinal tract related disorders, their management and prevention where possible. The students will be introduced to the principles underlying diagnoses and therapy.
RATIONALE	In order to understand the basis of GIT & Hepatobiliary –related disorders which the students of 3rd year MBBS will come across in their clinical postings, it is imperative that they have a firm grasp on the underlying mechanisms of the diseases and their treatment and prevention aspects.
OUTCOMES	By the end of the module, students should be able to: • Justify initial plans for the management and prevention of common GIT & Hepatobiliary disorders based on knowledge of Pathology, Pharmacology, and Community Medicine. • Discuss legal aspects related to GIT & Hepatobiliary
DEPARTMENTS INVOLVED	1. Community Medicine, 2. Forensic Medicine & Toxicology, 3. Pathology & Microbiology, 4. Pharmacology
MODULE OBJECTIVES	**By the end of the module, students will be able to:**

LECTURES **COMMUNITY MEDICINE**	**1. Introduction to nutrition** • Define Nutrition • Classify micro and macronutrients • List the diseases caused by micronutrient deficiencies • Explain prevention of micronutrient deficiencies **2. Balanced diet and bioavailability of nutrients** • Describe the composition of macronutrient in balanced diet • Describe standard nutrient intake and recommendation • Calculate energy value from macronutrient **3. Food hygiene and food poisoning** • Define food borne illness • Discuss physical, biological and chemical hazards of food • Describe the preservation of food • Define fortification • Explain food adulteration **4. Assessment of nutritional status- Growth Chart** • Describe nutritional assessment • Explain Nutritional Care Process (NCP) • List the tools for nutritional status • Explain the importance of Growth Charts **5. Malnutrition and prevention** • Define malnutrition • Classify malnutrition • Explain the process of assessment of malnutrition • Discuss control and prevention of malnutrition **6. Hepatitis, its types and prevention** • Classify Hepatitis • Discuss the clinical features of Hepatitis

	• Explain the epidemiological triangle of Hepatitis • Explain the control and prevention of Hepatitis • Discuss the Hepatitis control programmer in Pakistan **7. Enteric Fever and its prevention** • Describe enteric fever • Discuss the epidemiology of enteric fever • Describe the measures of control and prevention of enteric fever **8. Diarrheal diseases and its prevention** • Describe diarrheal disease • Classify diarrheal disease • Describe the epidemiology of diarrheal diseases • Explain the clinical features, assessment and diagnostic criteria of diarrheal diseases • Discuss the measure of control and prevention of diarrheal diseases **9. Cholera and its prevention** • Describe cholera disease • Describe the epidemiology of cholera. • List risk factors of cholera • Discuss the measures of control and prevention of Cholera **10. Worm infestations and their prevention** • Describe worm infestation • Classify medically important worms • Describe the epidemiology of worm infestations • List the risk factors of worm infestation • Discuss measures of control and prevention of worm infestations

	11. Amoebiasis and its prevention • Describe Amoebiasis • Describe epidemiology of Amoebiasis • Discuss risk factors of Amoebiasis • Discuss measures of control and prevention of Amoebiasis **12. Zoonotic Diseases and their prevention** • Describe Zoonosis • Classify medically important zoonotic diseases • Describe epidemiology of zoonotic diseases • Describe Scabies • Discuss measures of control and prevention of zoonotic diseases **13. Leishmaniosis and its prevention** • Describe Leishmaniasis • Discuss epidemiology of Leishmaniasis • List risk factors of Leishmaniasis • Discuss measures of control and prevention of Leishmaniasis **14. Water Pollution and Water Related Diseases** • Describe water pollution • List the sources of water pollution • Classify water related diseases • Discuss control and prevention of water related diseases **15. Water Purification** • Describe Water purification • Enumerate the methods of water purification • Explain WHO standards for water safety
FORENSIC MEDICINE	**1. Regional Injuries-I (Head, injuries to scalp & Fractures of Skull)** • Describe injuries of the scalp including forensic aspects of

	anatomy of the scalp and their medico legal aspects
	• Enumerate the types of fractures of the skull and their forensic aspects
	• Explain the mechanism of production of fracture of skull and their medico legal significance
	2. Regional Injuries-II (Intracranial hemorrhages)
	• Describe the types of intracranial hemorrhages along with forensic anatomy of blood vessels commonly involved
	• List the signs and symptoms and diagnostic features of intracranial hemorrhages
	• Explain the medico legal aspects of intracranial hemorrhages
	3. Regional Injuries-III (Brain Injuries, Spinal Injuries)
	• Enumerate the different types of injuries to the brain and spine
	• Explain the mechanisms of brain injuries such as Concussion /Contusion/Irritation, Coup and contre coup injuries
	• Describe the mechanism and sign and symptoms of brain injuries to boxers
	• Discuss Spinal injuries with special emphasis on Railway spine
	• Describe the medico legal aspects of brain and spinal injuries
	4. Regional Injuries-IV (Injuries of Face, Neck, Chest, Abdomen, Pelvis)
	• Describe the common injuries of medico legal significance to the face and neck including
	  • Cervical fractures
	  • Whiplash injuries

	• Homicidal and suicidal cut throat • Chest injuries including traumatic asphyxia, injuries to ribs, lungs, heart with special emphasis on penetrating injuries and Commotion Cordis • Describe the abdominal injuries with medico legal aspects of rupture of liver, spleen, injuries to abdominal aorta and intestines • Discuss Pelvic injuries of medico legal significance **5. Special Trauma-Road Traffic Accidents** • Explain the various causes of road traffic accidents • Briefly discuss the fitness certificate for driving license • Describe the various types of injuries to pedestrians, driver and passengers • Discuss the use of air bags and seat belt syndrome • Explain the injuries to motor cyclists with special stress on tail gating • List the complications of run over injuries with their medico legal significance **6. Special trauma (Blast Injuries)** • Define common terms related to blast injuries • Classify explosives • Discuss the physics of bomb blast • Describe the various types of blast injuries • Discuss the management of blast injuries **7. Causes of death due to trauma** • Describe the immediate and delayed (remote) causes of death due to wounds **8. Forensic Psychiatry-I**

	• State the salient features of Mental Health Ordinance 2001 • Define insane person as per law • Differentiate between legal and medical Insanity • Describe subjective disorders as delusions, hallucinations, illusion, obsession, impulse and their medico legal significance **9. Forensic Psychiatry-II** • Define the various terms of medico legal significance such as affect, fugue, confabulation, I.Q, psychopath, twilight state • Discuss legal tests of insanity i.e. McNaughton's Rule • List motives of feigned insanity • Differentiate between true and feigned insanity • Explain the procedure of admission in a mental hospital • Discuss the civil and criminal responsibilities of insane **10. Metallic Poisons-Arsenic and Mercury** • Explain the sign and symptoms, diagnosis, treatment, postmortem findings and medico legal importance of acute and chronic poisoning by Arsenic and Mercury **11. Metallic Poisons-Lead and Copper** • Explain the sign and symptoms, diagnosis, treatment, postmortem findings and medico legal importance of acute and chronic poisoning by Lead and Copper **12. Food poisoning** • Enumerate the types of food poisoning • Differentiate between Toxin type and Infection type of food poisoning • Explain the sign and symptoms, diagnosis, and postmortem findings of food poisoning

	• Discuss role of forensic expert in cases of food poisoning **13. Opium & its derivative poisons** • Enumerate the derivatives of Opium • Explain the sign and symptoms, diagnosis, treatment, postmortem findings and medico legal importance of Opium poisoning
INTERNAL MEDICINE	**1. Approach to patient with epigastric pain** • Explain the etiology, differential diagnosis, clinical features and investigations for patients with epigastric pain • Discuss the outline of management plan for such conditions **2. Approach to patient with jaundice** • Explain the etiology, differential diagnosis, clinical features and investigations for patients with Jaundice • Discuss the outline of management plan for such conditions **3. Approach to patient with acute diarrhoea** • Explain the etiology, differential diagnosis, clinical features and investigations for patients with acute diarrhoea • Discuss the outline of management plan for such conditions **4. Approach to patient with chronic diarrhoea** • Explain the etiology, differential diagnosis, clinical features and investigations for patients with chronic diarrhoea • Discuss the outline of management plan for such conditions
GENERAL SURGERY	**1. Surgical Infections** • Discuss surgical approach to patients with viral infections (e.g. HIV, AIDS, Hepatitis B and C) **2. Tropical Infections** • Discuss surgical approach to patients with common tropical infections related to the gut (e.g. (Amebiasis, Ascariasis,

	Typhoid, Tuberculosis, Hydatid Disease) • Describe the role of antimicrobials in prevention and treatment of infection **3. Nutrition** • Explain the etiology and consequences of malnutrition in the surgical patient • Describe nutritional status assessment techniques, Nutritional requirements of surgical patients and • Explain the nutritional consequences of intestinal resection, • Discuss the different methods of providing nutritional support and their complications
PATHOLOGY	**1. Lesions of oral cavity (Inflammatory/reactive, precancerous and cancerous)** • Discuss Aphthous Ulcers & Fibroproliferative lesions and infections of oral cavity • Discuss the characteristic features of precancerous oral cavity lesions • List the risk factors for oral cancer especially squamous cell carcinoma • Discuss the pathogenesis, molecular biology and morphology of Squamous Cell Carcinoma **2. Inflammation & neoplasms of salivary glands** • Discuss Xerostomia, Sialadenitis and Mucocele • Classify common benign and malignant tumors of salivary glands • Describe the characteristic features, pathogenesis and morphology of the most common salivary gland tumors **3. Congenital abnormalities of GIT** • Describe the congenital abnormalities of GIT including

	Atresia, fistulae, duplications, Diaphragmatic Hernia, Omphalocele, Gastroschisis. Ectopia, Meckel diverticulum, Congenital hypertrophic pyloric stenosis, Hirsch sprung disease **4. Esophageal obstruction, achalasia, esophagitis & Barrett esophagus** • Explain esophageal obstruction, varices and achalasia • Classify esophagitis • Discuss the risk factors, pathogenesis, morphology and clinical features of Barrett esophagus **5. Esophageal tumors** • Classify tumors of esophagus • Explain the etiology and pathogenesis of esophageal tumors • Identify the morphology and common clinical features of esophageal tumors **6. Gastritis, Stress related mucosal disease, Chronic Gastritis** • Define Gastritis and gastropathy • Describe pathogenesis, morphology & clinical features acute gastritis and gastropathy • Define stress related mucosal disease • Discuss its pathogenesis, morphology & clinical features • Explain the pathogenesis, morphology & clinical features of chronic gastritis (with special emphasis on H. Pylori gastritis and autoimmune eosinophilic, lymphocytic & granulomatous gastritis) **7. Complications of chronic gastritis** • Discuss risk factors, pathogenesis, morphology, clinical features & complications of peptic ulcer disease

	• Define mucosal atrophy, intestinal metaplasia, dysplasia & gastritis cystica in relation to gastritis • Discuss hypertrophic gastropathies **8. Infections of the upper Gastrointestinal tract** • List the microorganisms which causes infections of oral cavity & upper GI tract • Discuss the important properties of Helicobacter pylori and Candida • Describe the pathogenesis, epidemiology clinical findings and laboratory diagnosis of H. Pylori & Candida **9. Gastric polyps & tumors of stomach** • Discuss the types, sites, risk factors & morphology of gastric polyps. • Classify gastric tumors based on macroscopic and microscopic grounds • Discuss epidemiology, risk factors, pathogenesis, molecular biology, morphology and clinical features of gastric adenoma & adenocarcinoma • Explain gastric lymphoma, carcinoid tumor and gastrointestinal stromal tumors **10. Intestinal obstruction/ Ischemic bowel diseases/ Angiodysplasia** • Describe types of intestinal obstructions • Discuss the risk factors and morphology of intestinal obstructions • Describe the pathogenesis, morphology, clinical features of Ischemic bowel disease • Define Angiodysplasia

	• Discuss the pathogenesis and morphology of Angiodysplasia **11. Malabsorption & Diarrhea** • Define malabsorption & diarrhea • Classify diarrhea • Enumerate different malabsorption diseases including Cystic fibrosis, Celiac disease, environmental enteropathy, Autoimmune enteropathy, Lactase deficiency & Abetalipoproteinemia • Discuss the pathogenesis, risk factors, morphology and clinical features of Celiac disease • Discuss etiopathogenesis of Whipple disease **12. Food Poisoning** • Define food poisoning • List the causative microorganisms of food poisoning • Discuss the following microorganisms in relation to food poisoning: Staphylococcus Aureus & Listeria monocytogenes, Bacillus cereus, Clostridium botulinum and Clostridium per fringes **13. Infectious enter colitis I** • List the infectious causative agents of diarrhea • Discuss the characteristics of inflammatory and non-inflammatory diarrhea. • Discuss important properties, pathogenesis and clinical findings and laboratory diagnosis of diarrhea caused by Escherichia coli, M. tuberculosis, Vibrio, Campylobacter and Yersinia. **14. Infectious enter colitis II** • Discuss the pathogenesis, clinical findings, laboratory

	diagnosis prevention of non-typhoid Salmonella and Shigella • List the different species of Salmonella • Differentiate between enter colitis caused by Salmonella and shigella **15. Typhoid fever and its diagnosis** • Discuss the causative agent in typhoid fever • Discuss the important properties, transmission, clinical features, laboratory diagnosis, treatment and prevention of agents of typhoid fever • Discuss the importance of blood culture in the diagnosis of typhoid fever **16. Role of viruses in infecting gastrointestinal tract** • List the important viruses that cause gastrointestinal tract infections • Discuss the important properties, replicative cycle, transmission, epidemiology, pathogenesis, clinical findings, laboratory diagnosis and prevention of Polio and Rota viruses **17 Intestinal protozoa** • List the intestinal protozoa • Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis and prevention of Ent amoeba histolytic, Giardia lambda, and Cryptosporidium. • Briefly discuss the minor intestinal protozoa **18. Cestodes** • Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis and

	prevention of: I. Taenia II. Diphyllobothrium latum III. Echinococcus granulosis IV. Hymenolepis nana **19. Trematodes** • Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis and prevention of: I. Schistosoma II. Clornorchis III. Paragonimus IV. Faschiola Fasciolopsis V. Heterophyes **20. Intestinal Nematodes-I** • Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis and prevention of: I. Enterobius vermicularis II. Ascaris lumbricoides III. Trichuris trichura **21. Intestinal Nematodes-II** • Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis and prevention of: I. Ancylostoma and Necator II. Strongyloides III. Trichinella

	22. Irritable bowel syndrome (IBS), Inflammatory bowel disease (IBD), Indeterminate colitis & Colitis associated neoplasia • Define irritable bowel syndrome and inflammatory bowel disease • Explain its pathogenesis & clinical features • Describe its types (Crohn & ulcerative colitis) and their pathogenesis • Explain the morphology and clinical features of both types of IBD • Differentiate between Crohn & ulcerative colitis • Define intermediate colitis • Describe long term complications of ulcerative colitis & Crohn disease • Define diversion colitis, microscopic colitis, sigmoid diverticulosis & graft versus host disease **23. Polyps of small & large intestine (Familial adenomatous polyposis FAP)** • Classify non-neoplastic & neoplastic polyps of intestine • Describe its morphology & clinical features • Briefly discuss adenomatous polyposis & hereditary non-polyposis colorectal cancer **24. Tumors of small & large intestines, Hemorrhoids, appendicitis, Peritonitis, tumors of anal canal & peritoneum** • Classify tumors of intestines • Discuss the risk factors, pathogenesis and morphology of adenoma-adenocarcinoma sequence • Discuss the clinical features, grading and staging of intestinal

	tumors • Briefly discuss tumors of anal canal, hemorrhoids, acute appendicitis, tumors of appendix, peritonitis & peritoneal mesothelioma **25. General features of liver diseases** • Define acute-on-chronic liver failure • Describe the mechanism of injury & repair • Elaborate the laboratory diagnosis of hepatic diseases • Describe acute & chronic liver failure • Explain morphology & clinical features of liver failure (portal HTN, portosystemic shunt and splenomegaly) **26. Hepatotropic Viruses-I** • Discuss the important properties, summary of replicative cycle, transmission, epidemiology pathogenesis, clinical finding, laboratory diagnosis and prevention of Hepatitis A, E and G **27. Hepatotropic Viruses - II** • Discuss the important properties, summary of replicative cycle, transmission, epidemiology pathogenesis, clinical finding, laboratory diagnosis and prevention of Hepatitis B, C and D **28. Hepatitis; Viral, Autoimmune & Drug Induced** • Discuss the morphological features of viral hepatitis • Define autoimmune & drug induced hepatitis • Describe clinicopathlogic features, morphology & diagnostic criteria of autoimmune hepatitis • Describe patterns of drug & toxin induced hepatic injury • Define clinicopathologic syndromes of viral hepatitis, chronic

	hepatitis & carrier state **29. Alcoholic & Non-Alcoholic Liver Disease (NAFLD)** • Explain the pathogenesis, morphology & clinical features of Alcoholic Liver Disease • Define non-alcoholic liver disease & World Health Organization criteria for the metabolic syndrome • Discuss the pathogenesis, morphology & clinical features of NAFLD **30. Storage and metabolic disorders of liver** • List the types of storage & metabolic disorders of liver • Discuss the genetic alterations, pathogenesis, morphology & clinical presentation of Hemochromatosis, Wilson disease and a1 anti-trypsin deficiency **31. Cholesteric Diseases, Autoimmune Cholangiopathies. & structural anomalies of the biliary tree** • Explain bilirubin & bile formation • Describe pathophysiology & causes of jaundice • Discuss pathogenesis & morphology of cholestasis, large bile duct obstruction, cholestasis of sepsis, primary hepatolithiasis, neonatal cholelithiasis & biliary atresia • Describe the pathogenesis, morphology & clinical features of primary biliary cirrhosis, primary sclerosing cholangitis • Define choledochal cyst & fibro polycystic disease **32. Circulatory Disorders, Hepatic complications of organ or Hematopoietic stem cell transplantation, Hepatic diseases associated with pregnancy** • Describe the clinical manifestation & morphology of various circulatory disorders of liver

	• Describe morphology of graft-versus host disease & liver graft rejection, preeclampsia & eclampsia, acute fatty liver of pregnancy & intrahepatic cholestasis of pregnancy **33. Tumors of liver** • Classify liver tumors • Discuss the molecular profile, pathogenesis and morphology of benign liver tumors • Discuss the risk factors, pathogenesis, morphology, clinical features and diagnosis of malignant tumors of liver **34. Pathological diseases, and tumors of gall bladder** • Discuss the etiology, pathogenesis, gross morphological & histological features of different types of cholecystitis, cholelithiasis • Discuss risk factors, pathogenesis, morphology and diagnosis of carcinoma of gall bladder **35. Non-neoplastic cysts, and neoplasms of pancreas** • Describe non-tumorous conditions of Pancreas including congenital anomalies, acute and chronic pancreatitis • Discuss Congenital cysts & Pseudo cysts • Discuss cystic neoplasm of Pancreas • Describe precursors to pancreatic cancers, and the pathogenesis, morphology & clinical features of pancreatic carcinoma • Define Acinar cell carcinoma & Pancreatoblastoma
PHARMACOLOGY	**1. Prokinetics and Anti-Emetics** • Classify prokinetic and anti-emetic agents • Discuss the basic & clinical pharmacology of those agents **2. Drugs used in Acid Peptic Disorder including H. Pylori-I & II**

	• Classify drugs used in the treatment of acid peptic disorder including H. Pylori • Discuss the basic & clinical pharmacology of drugs used in acid peptic disease **3. Drug Management of Viral Hepatitis (Anti-Viral Drugs-II)** • Explain different treatment strategies for viral hepatitis • Discuss the basic & clinical pharmacology of drug groups usedin viral hepatitis including role of Interferons **4. Laxatives (drugs used in constipation)** • Classify laxatives/purgatives • Explain the pharmacokinetics and dynamics of laxatives/ purgatives **5. Treatment of Amebiasis (Anti-Protozoal Drugs-II)** • Classify drugs used in the treatment of Amebiasis • Explain the basic & clinical Pharmacology of drugs used in thetreatment of Amebiasis **6. Anti-Diarrheal Drugs & Treatment of Irritable Bowel Syndrome (IBS)** • Classify anti-diarrheal drugs • Discuss drug treatment of infectious diarrhea • Explain the basic & clinical pharmacology of anti-diarrheal drugs • Discuss the drug treatment of IBS **7. Anti-Helminthic Drugs** • Classify drugs used in the treatment of helminthic infections • Describe basic and clinical pharmacology of anti-helminthic drugs
TUTORIALS **FORENSIC**	**1. Corrosives poisoning** • Discuss the sign and symptoms, treatment and medico

MEDICINE	legal significance of corrosive poisons; including HCl, H_2SO_4, Nitric acid, Vitriol age **2. Organic Acids and Alkalis** • Discuss the sign and symptoms, treatment and medico legalsignificance of: i. Oxalic acid ii. Carbolic acid iii. Salicylic acid iv. Hydrocyanic acid & cyanides, v. Alkalies Caustic Soda and Caustic Potash **3. Non Metallic Poison- Phosphorus** • Discuss the sign and symptoms, treatment and medico legal significance of Phosphorus **4. Common household poisons** • Enumerate common household poisons • Discuss the sign and symptoms, treatment and medico legalsignificance of common household poisons **5. Drug addiction and dependence** • Define drug addiction and dependence • List the drugs that cause addiction and dependence • Discuss their sign and symptoms, treatment and medico legal significance
PATHOLOGY	**1. Laboratory diagnosis of Typhoid and liver disease** • Discuss the important tests in diagnosing Typhoid • Discuss the liver function tests **2. Histopathology of gastric diseases and gastric tumors** • Describe the morphological features of gastritis, and pepticulcer disease

	• Discuss morphological features of gastric polyps, adenoma &adenocarcinoma **3. Histopathology of polyps & intestinal tumors** • Discuss intestinal polyps along with their classification • Explain the morphological features of intestinal tumors **4. Stool Detailed Report** • List the clinical indications of stool detailed report • Describe the methods of performing stool D/R
PHARMACOLOGY	**1. Drugs used in Acid Peptic Disorder** • Discuss drug regimens used in the treatment of acid peptic diseases including treatment of H. Pylori associated ulcers • Discuss the clinical uses, adverse effects, pharmacokinetics and pharmacodynamics of notable drugs **2. Drug treatment of Viral Hepatitis** • Discuss the basic and clinical pharmacology of various drugregimens used in viral hepatitis **3. Treatment of Amebiasis, Diarrhea & Irritable Bowel Syndrome (IBS)** • Discuss various drug regimens used in the treatment of amebiasis, diarrhea and IBS **4. Treatment of Typhoid Infection** • Discuss the drug regimens used in typhoid infection along with their basic and clinical pharmacology
PRACTICALS **PATHOLOGY**	**1. Biochemical tests to identify microorganisms especially of the GIT** • Identify lactose and non-lactose fermenting colonies on MacConkeys agar

	• Discuss the importance of: I. Triple sugar iron agar test II. Sulphur Indole Motility agar test III. Citrate utilization test IV. Urease test
PHARMACOLOGY	**1. Preparation of Tyrode solution & Evaluate the effects of given drug on the intestine of Rabbit** • Demonstrate the preparation of Tyrode solution for practical setup • State its contents and their quantities for solution preparation • List its experimental uses • Explain the method of calculation for preparation of various strength of solution used experimentally • Demonstrate the effect of different drugs on the isolated piece of Rabbit's intestine by using Power Lab System
SKILLS LAB	**1. Nasogastric Intubation** • Describe the types of Nasogastric tube. • Discuss the indication, contraindication and complications of Nasogastric tube • Perform nasogastric tube insertion and removal on a mannequin
INTERNAL ASSESSMENT	• Internal assessment will be according to JSMU policy. The details of internal assessment will be determined by the respective institutions. • Internal assessment carries 20% weightage in the final, end-of-year examination.
ANNUAL EXAMINATION	• MCQs and OSPE (Observed and Un-observed)
MODULE	• Course will be evaluated through a feedback form

EVALUATION	which will be posted on the JSMU website