



# JINNAH SINDH MEDICAL UNIVERSITY

## STUDYGUIDE

<b>PROGRAM</b>	<b>MBBS</b>
<b>MODULETITLE</b>	<b>GIT &amp; Hepatobiliary-II</b>
<b>ACADEMICYEAR</b>	<b>3<sup>rd</sup>. Year-2026</b>
<b>INTRODUCTION</b>	<p>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.</p>
<b>RATIONALE</b>	<p>In order to understand the basis of GIT &amp; Hepatobiliary -related disorders, which the students of 3rdyearMBBS 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.</p>
<b>OUTCOMES</b>	<p>By the end of the module, students should be able to:</p> <ul style="list-style-type: none"><li>• Justify initial plans for the management and prevention of common GIT &amp;Hepatobiliary disorders based on knowledge of Pathology, Pharmacology, and Community Medicine.</li><li>• Discuss legal aspects related to GIT&amp; Hepatobiliary</li></ul>
<b>DEPARTMENTS INVOLVED</b>	<ol style="list-style-type: none"><li>1. Community Medicine,</li><li>2. Forensic Medicine &amp;Toxicology,</li><li>3. Pathology Microbiology,</li><li>4. Pharmacology</li><li>5. INTERNAL MEDICINE</li><li>6. GENERAL SURGERY</li></ol>
<b>MODULE OBJECTIVES</b>	<p><b>By the end of, students will be able to:</b></p>

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<p><b>LECTURES</b></p> <p><b>COMMUNITY</b></p> <p><b>MEDICINE</b></p>	<ol style="list-style-type: none"><li><b>1. Introduction to nutrition</b><ul style="list-style-type: none"><li>• Define Nutrition</li><li>• Classify micro and macronutrients</li><li>• List the diseases caused by micronutrient deficiencies</li><li>• Explain prevention of micronutrient deficiencies</li></ul></li><li><b>2. Balanced diet and bioavailability of nutrients</b><ul style="list-style-type: none"><li>• Describe the composition of macro nutrient in balanced diet</li><li>• Describe standard nutrient intake and recommendation</li><li>• Calculate energy value from macronutrient</li></ul></li><li><b>3. Food hygiene and food poisoning</b><ul style="list-style-type: none"><li>• Define food borne illness</li><li>• Discuss physical, biological and chemical hazards of food</li><li>• Describe the preservation of food</li><li>• Define fortification</li><li>• Explain food adulteration</li></ul></li><li><b>4. Assessment of nutritional Status-Growth Chart</b><ul style="list-style-type: none"><li>• Describe nutritional assessment</li><li>• Explain Nutritional Care Process (NCP)</li><li>• List the tools for nutritional status</li><li>• Explain the importance of Growth Charts</li></ul></li><li><b>5. Malnutrition and prevention</b><ul style="list-style-type: none"><li>• Define malnutrition</li><li>• Classify malnutrition</li><li>• Explain the process of assessment of malnutrition</li><li>• Discuss control and prevention of malnutrition</li></ul></li><li><b>6. Hepatitis, its types and prevention</b><ul style="list-style-type: none"><li>• Classify Hepatitis</li><li>• Discuss the clinical features of Hepatitis</li></ul></li></ol>
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- Explain the epidemiological triangle of Hepatitis
- Explain the control and prevention of Hepatitis
- Discuss the Hepatitis control programme 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

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	<p><b>11. Amoebiasis and its prevention</b></p> <ul style="list-style-type: none"><li>• Describe Amoebiasis</li><li>• Describe epidemiology of Amoebiasis</li><li>• Discuss risk factors of Amoebiasis</li><li>• Discuss measures of control and prevention of Amoebiasis</li></ul> <p><b>12. Leishmaniosis and its prevention</b></p> <ul style="list-style-type: none"><li>• Describe Leishmaniasis</li><li>• Discuss epidemiology of Leishmaniasis</li><li>• List risk factors of Leishmaniasis</li><li>• Discuss measures of control and prevention of Leishmaniasis</li></ul> <p><b>13. Water Pollution and Water Related Diseases</b></p> <ul style="list-style-type: none"><li>• Describe water pollution</li><li>• List the sources of water pollution</li><li>• Classify water related diseases</li><li>• Discuss control and prevention of water related diseases</li></ul> <p><b>14. Water Purification</b></p> <ul style="list-style-type: none"><li>• Describe Water purification</li><li>• Enumerate the methods of water purification</li><li>• Explain WHO standards for water safety</li><li>• 6. School Health Services</li></ul> <p><b>15. School Health Services</b></p> <ul style="list-style-type: none"><li>• Define School Health</li><li>• List the components of School Health</li><li>• Define the responsibilities of the School Health team members</li><li>• Define the functions of School Health Program</li><li>• Highlight the importance of research in School Health Program</li><li>• Discuss health promotion in the context of schools</li></ul>
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	<p><b>16. Travel Medicine</b></p> <ul style="list-style-type: none"><li>• Describe travel medicine</li><li>• Describe epidemiology in travel medicine</li><li>• Explain the risk for travelers</li><li>• List the pathogens causing common travelers diseases</li><li>• Discuss the control measures for disease prevention among travelers</li><li>• Discuss the role of international health regulation for travelers</li></ul> <p><b>17. Anorexia Nervosa</b></p> <ul style="list-style-type: none"><li>• Define anorexia nervosa using current diagnostic criteria (DSM-5)</li><li>• Evaluate the public health impact of anorexia nervosa</li><li>• Identify risk factors contributing to anorexia nervosa</li><li>• Understand the stepped-care model in treating anorexia nervosa</li></ul> <p><b>18. Bulimia Nervosa</b></p> <ul style="list-style-type: none"><li>• Define bulimia nervosa using current diagnostic criteria (DSM-5)</li><li>• Evaluate the public health impact of bulimia nervosa</li><li>• Identify risk factors contributing to bulimia nervosa</li><li>• Understand the stepped-care model in treating a bulimia nervosa</li></ul>
<b>FORENSIC MEDICINE</b>	<p><b>1. Regional Injuries-I(Head, Injuries to scalp &amp; Fractures of Skull)</b></p> <ul style="list-style-type: none"><li>• Describe injuries to the scalp including forensic aspects of</li></ul>

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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 hemorrhage

## **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 contrecoup 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

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- 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 motorcyclists 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**

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- 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 medicolegal significance such as affect, fugue, confabulation, I.Q., psychopath, twilight state.
- Discuss-legal test 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 & 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 & Copper**

- Explain the Sing symptoms, diagnosis treatment postmortem findings and medico legal importance of acute and chronic poisoning by Lead and copper
- Food poisoning
- Enumerate the types of food poisoning.
- Differentiate between toxin-type and infection-type food poisoning.
- Explain the sign and Symptoms diagnosis, and postmortem findings of food poisoning.
- Discuss role of the forensic expert in cases of food poisoning.

### **• Opium & its derivative poisons**

- Enumerate the derivatives of opium.
- Explain the sign and symptoms, diagnosis, treatment,

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	postmortem findings and medicolegal importance of Opium poisoning
<b>INTERNAL MEDICINE</b>	<b>1. Approach to patient with epigastric pain</b> <ul style="list-style-type: none"><li>• Explain the etiology, differential diagnosis, clinical features, and investigations for patients with epigastric pain</li><li>• Discuss the outline of management plan for such conditions</li></ul> <b>2. Approach to patient with jaundice</b> <ul style="list-style-type: none"><li>• Explain the etiology, differential diagnosis, clinical features and investigations for patients with jaundice.</li><li>• Discuss the outline of management plan for such conditions</li></ul> <b>3. Approach to patient with acute diarrhea</b> <ul style="list-style-type: none"><li>• Explain the etiology, differential diagnosis, clinical features, and investigations for patients with acute diarrhea</li><li>• Discuss the outline of management plan for such conditions</li></ul> <b>4. Approach to patient with chronic diarrhea</b> <ul style="list-style-type: none"><li>• Explain the etiology, differential diagnosis, clinical features and investigations for patients with chronic diarrhea</li><li>• Discuss the outline of management plan for such conditions</li></ul>
<b>GENERAL SURGERY</b>	<b>1. Surgical Infections</b> <ul style="list-style-type: none"><li>• Discuss surgical approach to patients with viral infections (e.g. HIV, AIDS, Hepatitis B and C)</li></ul> <b>2. Tropical Infections</b> <ul style="list-style-type: none"><li>• Discuss surgical approach to patients with common tropical infections related to the gut (e.g., amebiasis, Ascariasis,</li></ul>

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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

<b>PATHOLOGY</b>	<ul style="list-style-type: none"><li><b>1. Lesions of oral cavity (Inflammatory/reactive, precancerous and cancerous)</b><ul style="list-style-type: none"><li>• Discuss Aphthous Ulcers &amp; Fibro proliferative lesions and infections of oral cavity</li><li>• Discuss the characteristic features of precancerous oral cavity lesions</li><li>• List the risk factors for oral cancer especially squamous cell carcinoma</li><li>• Discuss the pathogenesis, molecular biology and morphology of Squamous Cell Carcinoma</li></ul></li><li><b>2. Inflammation &amp; neoplasms of salivary glands</b><ul style="list-style-type: none"><li>• Discuss Xerostomia, Sialadenitis and Mucocele</li><li>• Classify common benign and malignant tumors of salivary glands</li><li>• Describe the characteristic features, pathogenesis and morphology of the most common salivary gland tumors</li></ul></li><li><b>3. Congenital abnormalities of GIT</b><p>Describe the congenital abnormalities of GIT including atresia, fistulae, duplications, Diaphragmatic Hernia, Omphalocele, Gastroschisis. Ectopia, Meckel diverticulum, Congenital hypertrophic pyloric stenosis, Hirschsprung's disease.</p></li><li><b>4. Esophageal obstruction, achalasia, esophagitis &amp; Barrett esophagus</b><ul style="list-style-type: none"><li>• Explain esophageal obstruction, varices and achalasia</li><li>• Classify esophagitis</li><li>• Discuss the risk factors, pathogenesis, morphology and clinical features of Barrett esophagus.</li></ul></li></ul>
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## **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
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## **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 hyper trophic gastropathies

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## **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

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## **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 perfringens*

## **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

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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

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Prevention of:

- Taenia
- Di phyllo bothrium latum
- E chino coccus granulosis
- Hymenolepisnana

## **19. Trematodes**

Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis and prevention of:

- Schistosoma
- Clonorchis
- Paragon Imus
- Fasciola Fasciolosis
- Heterophytes

## **20. Intestinal Nematodes- I**

- Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis and prevention of:
  - Enterobius vermicularis
  - Ascaris lumbricoides
  - Trichuristrichura

## **21. Intestinal Nematodes-II**

Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis and prevention of:

- Ancylostoma and Nicator
- Strongyloides
- Trichinella

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## **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 feature

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

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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 hunt 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, Auto immune & Drug Induced**

- Discuss the morphological features of viral hepatitis
- Define auto immune & drug induced hepatitis
- Describe clinic pathologic features, morphology & diagnostic criteria of auto immune hepatitis
- Describe patterns of drug & toxin induced hepatic injury
- Define clinic pathologic syndromes of viral hepatitis, chronic

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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 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 poly cystic 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

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- 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 gallbladder**

- 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 & Pseudocysts
- Discuss cystic neoplasm of Pancreas
- Describe precursors to pancreatic cancers, and the pathogenesis, morphology & clinical features of pancreatic carcinoma
- Define Acinar cell carcinoma & Pancreas to blastoma

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<b>PHARMACOLOGY</b>	<ul style="list-style-type: none"><li><b>1. Prokinetics and Anti-Emetics</b><ul style="list-style-type: none"><li>• Classify prokinetic and anti-emetic agents</li><li>• Discuss the basic &amp; clinical pharmacology of those agents</li></ul></li> <li><b>1. Drugs used in Acid Peptic Disorder including H. Pylori-I&amp;II</b><ul style="list-style-type: none"><li>• Classify drugs used in the treatment of acid peptic disorder including H. Pylori</li><li>• Discuss the basic &amp; clinical pharmacology of drugs used in acid peptic disease</li></ul></li> <li><b>3. Drug Management of Viral Hepatitis (Anti-Viral Drugs-II)</b><ul style="list-style-type: none"><li>• Explain different treatment strategies for viral hepatitis</li><li>• Discuss the basic &amp; clinical pharmacology of drug groups used in viral hepatitis including role of Interferons.</li></ul></li></ul>
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## **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 the treatment 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

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<b>TUTORIALS</b>  <b>COMMUNITY MEDICINE</b>	<b>1. Nutritional assessment</b> <ul style="list-style-type: none"><li>• Define nutritional assessment and importance of nutritional assessment</li><li>• Explain the four key methods of nutritional assessment</li><li>• Demonstrate the ability to measure and interpret indicators for evaluating nutritional status.</li><li>• Analyze Nutritional assessment to develop evidence-based recommendation.</li></ul>
<b>TUTORIALS</b>  <b>FORENSIC</b>	<b>1. Corrosives poisoning</b> <ul style="list-style-type: none"><li>• Discuss the sign and symptoms, treatment and medico</li></ul>

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<b>MEDICINE</b>	<p>Legal significance of corrosive poisons; Including HCl, H<sub>2</sub>SO<sub>4</sub>, Nitric acid, Vitriol age</p> <p><b>2. Organic Acids and Alkalies</b></p> <ul style="list-style-type: none"><li>• Discuss the sign and symptoms, treatment and medico legal significance of:<ol style="list-style-type: none"><li>i. Oxalic acid</li><li>ii. Carbolic acid</li><li>iii. Salicylic acid</li><li>iv. Hydrocyanic acid&amp; cyanides,</li><li>v. Alkalies Caustic Soda and Caustic Potash</li></ol></li></ul> <p><b>3. Non -Metallic Poison-Phosphorus</b></p> <ul style="list-style-type: none"><li>• Discuss the sign and symptoms, treatment and medico legal significance of Phosphorus</li></ul> <p><b>4. Common household poisons</b></p> <ul style="list-style-type: none"><li>• Enumerate common household poisons</li><li>• Discuss the sign and symptoms, treatment and medico legal significance of common house hold poisons</li></ul> <p><b>5. Drug addiction and dependence</b></p> <ul style="list-style-type: none"><li>• Define drug addiction and dependence</li><li>• List the drugs that cause addiction and dependence</li><li>• Discuss their sign and symptoms, treatment and medico legal significance</li></ul>
<b>PATHOLOGY</b>	<p><b>1. Laboratory diagnosis of Typhoid and liver disease</b></p> <ul style="list-style-type: none"><li>• Discuss the important tests in diagnosing Typhoid</li><li>• Discuss the liver function tests</li></ul> <p><b>2. Histopathology of gastric diseases and gastric tumors</b></p> <ul style="list-style-type: none"><li>• Describe the morphological features of gastritis, and peptic ulcer disease</li></ul>

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	<ul style="list-style-type: none"><li>Discuss morphological features of gastric polyps, adenoma &amp; adenocarcinoma</li></ul> <p><b>3. Histopathology of polyps &amp; Intestinal tumors</b></p> <ul style="list-style-type: none"><li>Discuss intestinal polyps along with their classification</li><li>Explain the morphological features of intestinal tumors</li></ul> <p><b>4. Stool Detailed Report</b></p> <ul style="list-style-type: none"><li>List the clinical indications of stool detailed report</li><li>Describe the methods of performing stool D/R</li></ul>
<b>PHARMACOLOGY</b>	<p><b>1. Drugs used in Acid Peptic Disorder</b></p> <ul style="list-style-type: none"><li>Discuss drug regimens used in the treatment of acid peptic diseases, including treatment of H. Pylori associated ulcers</li><li>Discuss the clinical uses, adverse effects, pharmacokinetics and pharmacodynamics of notable drugs</li></ul> <p><b>2. Drug treatment of Viral Hepatitis</b></p> <ul style="list-style-type: none"><li>Discuss the basic and clinical pharmacology of various drug regimens used in viral hepatitis</li></ul> <p><b>3. Treatment of Amebiasis, Diarrhea &amp; Irritable Bowel Syndrome(IBS)</b></p> <ul style="list-style-type: none"><li>Discuss various drug regimens used in the treatment of amebiasis, diarrhea and IBS</li></ul> <p><b>4. Treatment of Typhoid Infection</b></p> <ul style="list-style-type: none"><li>Discuss the drug regimens used in typhoid infection along with their basic and clinical pharmacology</li></ul>
<b>PRACTICALS</b> <b>PATHOLOGY</b>	<p><b>1. Biochemical tests to identify microorganisms especially of the GIT</b></p> <ul style="list-style-type: none"><li>Identify lactose and non-lactose fermenting colonies on Mac Con keys agar</li></ul>

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	<p>Discuss the importance of:</p> <ul style="list-style-type: none"> <li>• Triple sugar iron agar test</li> <li>• Sulphur Indole Motility agar test</li> <li>• Citrate utilization test</li> <li>• Urease test</li> </ul>
<b>PHARMACOLOGY</b>	<p><b>1. Preparation of Tyrode solution &amp; evaluate the effects of given drug on the intestine of Rabbit</b></p> <ul style="list-style-type: none"> <li>• Demonstrate the preparation of Tyrode solution for practical setup</li> <li>• State its contents and their quantities for solution preparation</li> <li>• List its experimental uses</li> <li>• Explain the method of calculation or preparation of various strength of solution used experimentally</li> <li>• Demonstrate the effect of different drugs on the isolated Piece of Rabbit's intestine by using Power Lab System</li> </ul>
<b>SKILLSLAB</b>	<p><b>1. Naso -gastric Intubation</b></p> <ul style="list-style-type: none"> <li>• Describe the types of Nasogastric tube.</li> <li>• Discuss the indication, contraindication and complications of Nasogastric tube</li> <li>• Perform nasogastric tube insertion and removal on a mannequin</li> </ul>
<b>INTERNAL ASSESSMENT</b>	<ul style="list-style-type: none"> <li>• The details of internal assessment will be determined by the respective institutions.</li> <li>• Internal assessment carries 20% weightage in the final, end-of-year examination.</li> </ul>
<b>ANNUAL EXAMINATION</b>	<ul style="list-style-type: none"> <li>• MCQs and OSPE (Observed and Un-observed)</li> </ul>
<b>MODULE</b>	<ul style="list-style-type: none"> <li>• Course will be evaluated through a feedback form</li> </ul>

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<b>EVALUATION</b>	Which will be posted on the JSMU website
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