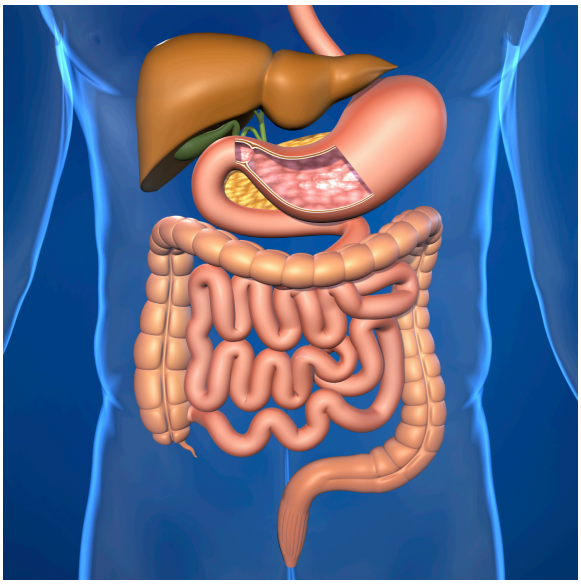
RIHS MEDICAL & DENTAL COLLEGE

INTEGRATED CURRICULUM



GASTROINTESTINAL AND NUTRITION MODULE 20101

SECOND YEAR MBBS

STUDY GUIDE

PLANNER: PROF. SABIHA M HAQ

GASTROINTESTINAL AND NUTRITION MODULE 20101

Class of 2023

Placement in curriculum: Module code: 20101 (Year 2, block 01, module 01)
Pre-requisite: First year modules

	Disciplines	Name of Faculty
	Principal	**Prof. Dr. Shakaib Anwar**
1.	**Anatomy**	**Prof. Dr. Sabiha M. Haq**
2.	**Physiology**	**Prof. Dr. Jan Alam**
3.	**Biochemistry**	**Prof. Dr. Rehan**
4.	**Pathology**	**Prof. Dr. Bushra**
5.	**Pharmacology**	**Prof. Dr. Azam Zia**
6.	**Community Medicine**	**Prof. Dr. Mirza Inamul Haq**
7.	**Forensic Medicine**	**Dr. Sabika**
8.	**Behavioral Sciences**	
9.	**Medical & Allied**	
10.	**Surgery & Allied**	**Prof. Dr. Aslam Shah**
Module duration		**06 Weeks**
Module planner		**Prof. Dr. Sabiha M Haq**

Module co-planner	**Prof. Dr. Mirza Inamul Haq**
Module Coordinator	
Integrated Curriculum	The Integrated Curriculum is becoming an increasingly popular concept internationally in the field of Medicine. The goal of integration is to break down barriers between the basic and clinical sciences, currently in practice as a result of traditional curricular models. Integration should promote retention of knowledge and acquisition of skills through repetitive and progressive development of concepts and their applications. There are three areas in need of improvement and clarification for successful integration: 1. Ensuring synchronous presentation of material 2. Avoiding the tendency to diminish the importance of the basic sciences, and 3. Using unified definitions (MEDICAL TEACHER) The model adapted in this institution is an **Integrated, modular, system based, spiral curriculum.** First spiral is of two years & second spiral is spread over three years**.**
Students as a curriculum Coordinator and class representative	Student involvement in an integrated curriculum is the key to the process of making him a self-directed, competent and ethical learner who can adjust and compete with the latest trends in medical education in today's, and tomorrow's world. In order to achieve this: 1. Students will help the Module coordinators in accomplishing all tasks assigned to him/her. 2. They will be a part of curriculum planning and implementing team. 3. They will inform/discuss the ongoing activities /problems in teaching and learning with module coordinators and curriculum chairperson.

Module Rationale	GIT module has been designed to unravel the basic structure and function of the alimentary system along with its embryological development and anomalies. The composition of the food is complex and little of it is water soluble, therefore it cannot enter body fluids; it needs to be broken down into its chemical components before it can be absorbed. Four activities of the GIT tract can be identified for this process to occur. These are: **Motility:** The term is used to describe the movements of the GIT tract. These movements are responsible for breaking down and pushing the food along the alimentary tract to its final destination in the rectum. **Secretion:** Different secretions of the GIT are concerned with breakdown of food into its digestive particles **Digestion**: Break down of food into small pieces. It is produced by the mechanical activity of the alimentary tract. The surface of the food is exposed to the enzymatic activity. **Absorption:** The transfer of nutrients or the digestive products from the lumen to the blood or lymph. Disruption of any of its activities can lead to disease states such as pain, peptic ulceration, vomiting, diarrhea & constipation. Coordination of all these functions is brought about by hormones of GIT and exocrine pancreas.
Module Outcomes	At the end of this module the student should be able to: **KNOWLEDGE:** Explain the structural & developmental organization of GIT. Explain the composition, functions, mechanism & control of the following gastrointestinal secretions: salivary, gastric, pancreatic, biliary, small & large intestines. Explain the swallowing and motility patterns in the GIT & its role in mixing, propulsion & evacuation of feces. Describe the mechanism of absorption of various nutrients and their role in health and malabsorption syndrome. Explain the physiological Anatomy, biochemical functions and dysfunctions of Liver. Explain the formation, function & control of secretion of bile. Explain the GIT hormones (structure, function) & their role in secretion and motility. Apply the knowledge of the basic sciences to understand pathophysiology of common GIT diseases. **SKILL:** Dissect various parts of GIT, and related structures including peritoneum, to demonstrate their gross Anatomy and relationship to each other.

	Demonstrate effective skills of history taking. Perform abdominal examination on subjects/ simulators. Perform lab procedures of common GIT disease in order to Interpret & understand the lab reports. **ATTITUTE:** Demonstrate effective communication skill strategies while history taking and examining the patients/simulators with GIT problems. NOTE: Dissection is a part of SGD where applicable
Teaching and Learning methodology	**Large Group Interactive Sessions (LGIS):** The goal of LGIS is to engage the students' attention, through ways to interact with the content, the instructor, and their classmates. Accordingly, LGISs include segments of knowledge transfer combined with segments where students interact. One of the things that makes the lecture interactive is the ability of the instructor to select the content of the lecture segments based on the students' needs. This demands a prior search for the baseline knowledge of the students at the start of the lecture. If students have difficulty answering a question, or an activity fails to develop the concept in most student groups, it's time to find a new and better way to deal with the material. LGIS clearly gives a better concept of the content and keeps students' attention captured throughout, as compared to yester years' didactic lectures. **Small Group Discussion (SGD):** 'The purpose and technique of small group teaching is to keep it learner-centered, with all students joining in free discussion on a particular topic. A typical 'small group' is around eight to 12 learners facilitated by a teacher. The steps of SGD are Forming, Storming, Norming & Performing. The teacher acts only as a facilitator. Students are allowed to use their books or other search material during the discussion. SGD is a good method to clear the concepts and develop communication and conflict solving skills in the students. **Departmental lab. Teaching:** This is a teaching & learning methodology where students learn handling of laboratory equipment, machines, their practical uses and safety rules. **Skill lab. Teaching:** This is performance-based teaching & learning methodology where students learn to physically examine the patients and get hands on training on various clinical skills. **Dissection and demonstration:** Teaching of gross

	Anatomy is aided by cadaver dissection and demonstration on plastic models. **Assignments and Presentations:** Both of these methodologies are meant to make the students self-directed learners and good communicators by seeking knowledge from multiple sources and presenting it in front of facilitators and peers.
Assessment methodology	**Multiple Choice Questions (MCQ):** **Structured Viva:** **Objective Structured Practical/Clinical Examination (OSPE/OSCE)**:

	Topics	Discipline	Learning objectives	Learning Strategy	Assessment Tool
1.	Overview of GIT & abdominal cavity	Anatomy	• Enumerate the components of GIT • Enumerate the components of pelvic cavity • Identify the components on diagrams • Describe the shape and boundaries of abdominal cavity and pelvis • Enumerate the component parts of peritoneum and give their location	1 SGD	OSPE/VIVA
2.	Oral cavity	Anatomy	• Identify structures forming the boundaries of oral cavity • Identify structures in the floor of oral cavity with the help of models • Identify the structures forming the boundaries of oral vestibule • Enumerate the vessels and nerves supplying the oral cavity	1 LGIS	OSPE/VIVA
3.	Tongue	Anatomy	• Describe the blood supply, nerve supply, lymphatic drainage of tongue • Describe the movements of tongue. • Describe development of tongue • Describe the anomalies associated with development • Describe the histological features of tongue with the help of microscopic images.	1 LGIS	MCQ
4.	Histology of tongue & lip	Anatomy	• Identify the histological structure of tongue and lip, with reference to the mucosa and different papillae • Give three identification points in favor of your identification	Skill lab	OSPE/VIVA
5.	Apparatus for mastication	Anatomy	• Identify the parts of mandible • Discuss anatomical landmarks for inferior alveolar nerve block • Describe the structure of TMJ • Describe important muscle attachments on the mandible • Relate the actions of muscles of mastication and temporomandibular joint.	1 SGD	MCQ
6.	Salivary glands	Anatomy	• Enumerate salivary glands • Describe the locations of major salivary glands	1 LGIS	MCQ

			• Enlist the nerve supply of major salivary glands. • Describe the structures involved in parotid infections		
7.	Histology of salivary glands	Anatomy	• Describe the histological structure of all three salivary glands • Tabulate the differences between salivary gland histology	1 LGIS	MCQ
8.	Saliva	Biochemistry	• Describe the characteristics of saliva. • Describe the functions of saliva. • Describe its role as an anti-bacterial	1 LGIS	MCQ
9.	Histology salivary glands	Anatomy	• Identify the following on given slides: o Parotid gland o Submandibular gland o Sublingual glands • List two points of identification for each slide. • Draw labeled diagrams of identified tissue.	SGD/Skill lab	OSPE/VIVA
10.	Smooth muscle contraction	Physiology	• Explain the chemical and physical basis of smooth muscle contraction.	1 LGIS	MCQ
11.	Smooth muscle contraction	Physiology	• Revise and recall the chemical and physical basis of smooth muscle contraction.	1 SGD	MCQ
12.	Nervous & hormonal control of smooth muscle contraction & activity of gastrointestinal smooth muscle	Physiology	• Describe the physiological Anatomy of enteric nervous system • Describe neurotransmitters secreted by enteric nervous system • Describe the various types of gastrointestinal reflexes • Describe the hormonal control of GIT motility	2 LGIS	MCQ
13.	Nervous & hormonal control of smooth muscle contraction & activity of gastrointestinal smooth muscle	Physiology	• Revise and recall the physiological anatomy of enteric nervous system, neurotransmitters various GIT reflexes and hormonal control of GIT motility	2 SGD	MCQ
14.	Mastication & swallowing	Physiology	• Describe the process of mastication • Describe the following stages of swallowing o Voluntary stage o Pharyngeal stage	2 LGIS	MCQ

			○ Esophageal stage • Describe the neural control of swallowing		
15.	Mastication & swallowing	Physiology	• Revise and recall the process of mastication and swallowing	2 SGD	MCQ
16.	Abdominal wall	Anatomy	• Identify the muscles forming anterior and lateral abdominal wall. • Perform dissection to identify formation of linea alba.	1Skill Lab/SGD	OSPE/VIVA
17.	Abdominal quadrants	Anatomy	• Identify the abdominal lines and planes showing division of abdomen into quadrants • Mark the subcostal, trans-pyloric and inter-crestal planes on the given subject • Mark the abdominal quadrants on the given subject	1Skill lab/SGD	OSPE/VIVA
18.	Abdominal wall	Anatomy	• Identify the nerve supply of anterior and lateral abdominal walls. • Describe the formation of rectus sheath and its contents with the help of dissection • Identify the vessels and nerves of abdominal wall	1 Skill lab/SGD	OSPE/VIVA
19.	Inguinal canal	Anatomy	• Describe the superficial and deep inguinal rings • Enumerate the contents passing through each. • Describe the boundaries of inguinal canal • Enumerate common types of hernia • Differentiate between direct and indirect inguinal hernias on anatomical basis • Describe parts of hernial sac	1 LGIS	MCQ
20.	Hernias	Surgery	• Define hernias • Classify hernias • Enumerate the causes for hernias • Comment on the types of hernias according to different age groups • Define common complications of hernias	1LGIS	MCQ

21.	Gross Anatomy of esophagus	Anatomy	• Describe the gross Anatomy of esophagus • Define common clinical conditions related to esophagus • Comment on the histology of different parts of esophagus	1 LGIS	MCQ
22.	Histology of esophagus	Anatomy	• Identify the histological structure of various parts of esophagus • State two points of identification	1 Skill lab	OSPE/VIVA
23.	Gross Anatomy of stomach	Anatomy	• Describe the parts of stomach on the given model • Describe the omental attachments to the stomach on a given model. • Enumerate the structures lying in stomach bed • Describe the blood supply, nerve supply and lymphatic drainage of stomach. • Discuss the role of blood supply in partial gastrectomy •	1 SGD	MCQ
24.	Histology of stomach	Anatomy	• Describe the histological layers of different parts of stomach • Identify the cells of various parts of stomach on diagrams • Define peptic ulcer • Enumerate the factors responsible for the occurrence of peptic ulcer	1 LGIS	MCQ
25.	Histology of stomach	Anatomy	• Identify the histological layers of esophagus & stomach • Identify the cells of various parts of stomach under microscope • Draw a labeled a diagram showing its section (fundus, body &antrum). • List two points of identification.	Skill Lab	MCQ
26.	Functions of the stomach	Physiology	• Describe the motor functions of stomach • Describe gastric factors that promote emptying of stomach • Describe duodenal factors that inhibit stomach emptying	1 LGIS	MCQ
27.	Functions of the stomach	Physiology	• Revise and recall the motor functions of stomach and factors involved in gastric emptying	1 SGD	MCQ
28.	Gastric secretion	Physiology	• Enumerate the gastric secretion from mucus neck cell, peptic cells and parietal cells.	2 LGIS	MCQ

			• Describe the mechanism of hydrochloric acid secretion. • Describe the secretion and activation of pepsinogen. • Discuss the secretion of intrinsic factor.		
29.	Gastric secretion	Physiology	• Revise and recall the gastric secretion from mucus neck cell, peptic cells and parietal cells and the mechanism of hydrochloric acid secretion, secretion and activation of pepsinogen, secretion of intrinsic factor.	2 SGD	MCQ
30.	Duodenum	Anatomy	• Identify the position of duodenum in abdominal cavity with the help of model • identify the parts of duodenum • Identify the structures forming their relations with the help of models • Enumerate the blood vessels supplying the • Duodenum	Skill Lab/SGD	OSPE/VIVA
31.	Jejunum and ileum	Anatomy	• Identify the position of jejunum and ileum in abdominal cavity with the help of model • Identify the structures forming their relations with the help of models • Enumerate the blood vessels supplying small intestine • Identify lymph node groups draining the small intestine	Skill Lab/SGD	OSPE/VIVA
32.	Histology of small intestine	Anatomy	• Describe the Histology of all three parts of small intestine • Mention the differences between their histology and relate this to their function	1 LGIS	OSPE/VIVA
33.	Histology of small intestine	Anatomy	• Identify the histological features of duodenum, jejunum ileum under microscope. • List two points of identification. • Draw a labeled diagram of these structures on a sketch book	Skill lab	OSPE/VIVA
34.	Blood supply of stomach and small intestine	Anatomy	• Describe the blood supply of stomach and small intestine	1 SGD	MCQ
35.	Nutrition-II	Community medicine	• Describe basic concepts of nutritional requirements • Explain reference body weights • Understand energy requirements	1 LGIS	MCQ

			• Discuss balanced diet		
36.	Obesity	Community medicine	• Define obesity • Classify obesity • Describe prevalence of obesity • Discuss epidemiological determinants of obesity • Understand hazards, prevention and control of obesity	1 LGIS	MCQ
37.	Inflammation	Pathology	• Define inflammation • Give causes of inflammation • Comment on the microscopic appearance of inflamed tissue • Name the four classical symptoms of inflammation	1 LGIS	MCQ
38.	Gastric juice	Biochemistry	• Describe the composition of gastric juice. • Describe the functions of gastric juice. • Enlist stimulants of gastric secretion. • Enlist depressants of gastric secretion. • Describe the effects (clinical significance) produced by gastric stimulants and depressants. • Describe the significance of Prostaglandins in stomach	1 LGIS	MCQ
39.	Intestinal juice	Biochemistry	• Describe the composition of intestinal juice. • Describe the functions of intestinal juice • Describe the importance of trypsin in digestion	1 LGIS	MCQ
40.	Digestion & absorption of carbohydrate	Biochemistry	• Describe the process of digestion and absorption of CHO. • Describe the biochemical basis of lactose intolerance	1 LGIS	MCQ
41.	Food poisoning	Community medicine	• Define food poisoning • Describe various types of food poisoning • Investigate different types of food poisoning • Understand control and prevention of food poisoning	1LGIS	MCQ
42.	Blood supply and venous drainage of GIT	Anatomy	• Identify the branches of abdominal aorta	Skill lab/SGD	OSPE/VIVA

			• Enumerate the branches and areas of supply with the help of diagrams. • Enumerate the tributaries of inferior vena cava.		
43.	Acute diarrheal diseases	Community Medicine	• Define diarrhea • Understand different types of diarrhea • Describe causes of diarrhea • Discuss prevention and control measure diarrhea	1LGIS	MCQ
44.	Movements of small intestine	Physiology	• Describe the mixing & propulsive movements of small intestine • describe the nervous and hormonal control of small intestine movements	1 LGIS	MCQ
45.	Diarrheas and dysentery	Medicine	• Define diarrheas and dysentery • Comment on the clinical types • Comment on the clinical manifestations and complications of diarrhea and dysentery	1LGIS	MCQ
PBL: LOOSE MOTION					
46.	Digestion and Absorption of Proteins	Biochemistry	• Describe the process of digestion and absorption of proteins. • Describe the consequences of trypsin deficiency	1 LGIS	MCQ
47.	Liver and gall bladder	Anatomy	• Describe the position, size, shape, coverings and ligaments of liver • Describe the concept of lobes and segments in liver on a given model • Describe the dual blood supply of liver • Describe the gross anatomy, relations and blood supply of gall bladder • Discuss the formation, course and termination of common bile duct on a given diagram • Discuss the concept of hepatic lobectomies and segmentation	1 SGD	MCQ
48.	Functions of liver	Physiology	• Describe the metabolic functions of liver. • Describe enterohepatic circulation.	2 LGIS	MCQ

49.	Functions of liver	Physiology	• Revise and recall the metabolic functions of liver and enterohepatic circulation.	2 SGD	MCQ
50.	Common dysfunctions of liver	Pathology	• Describe brief clinical significance of liver biopsy • Identify common histopathological disorders of liver biopsy	1 LGIS	MCQ/SAQ
51.	Portal vein	Anatomy	• Describe the formation of portal vein. • Describe the porta- systemic anastomosis. • Discuss the role of porta-systemic anastomosis in portal hypertension	1 SGD	MCQ
52.	Introduction to viruses	Pathology	• Outline basic differences between viruses and bacteria • Outline basic viral taxonomy Discuss how viruses infect cells and replicate • Explain the modes by which viruses are acquired	1 LGIS	MCQ/SAQ
53.	Hepatitis A&E	Community medicine	• Define hepatitis A&E • Understand the epidemiology of hepatitis • Describe burden of disease • Understand epidemiological determinants • Describe prevention and control measures	1LGIS	MCQ
54.	Histology of liver	Anatomy	• Describe the histological structure of liver stroma • Describe the formation of liver lobule • Enumerate contents of space of DISSE • Describe the histology of portal triad	1 LGIS	OSPE/VIVA
55.	Jaundice	Medicine	• Define clinical types of jaundice • Comment on the clinical manifestations and complications of each type	1LGIS	MCQ
56.	**PBL ON JAUNDICE**				

57.	Peritoneum-I	Anatomy	• Describe the layers of peritoneum • Describe the peritoneal vessels and nerves • Describe the role of visceral and parietal layers in peritoneal adhesions, ascites and paracentesis • Describe the formation of omentum, peritoneal ligament and mesentery.	1 LGIS	MCQ
58.	Peritoneum-II	Anatomy	• Describe the parts of greater omentum • Describe the attachment of lesser omentum • Describe peritoneal folds • Describe peritoneal recesses • Describe the position of greater sac • Describe recesses of omental bursa • Explain the role of greater omentum as abdominal policeman	1 LGIS	MCQ
59.	Pancreas	Anatomy	• Identify parts of pancreas on the model • Identify the blood supply of pancreas • Identify the formation pancreatic duct on the given model	Skill lab/SGD	MCQ
60.	Spleen	Anatomy	• Identify the gross relations of spleen in relation to other abdominal organs • Identify the blood vessels supplying the spleen on the given model	1 SGD	MCQ
61.	Histology of gall bladder and pancreas	Anatomy	• Identify the gall bladder and pancreas on the given slide under microscope • Draw labeled diagrams of the identified tissue on histology notebooks. • List two points of identification	Skill lab	MCQ
62.	Imaging of GIT	Anatomy	• Identify normal appearance of GIT on o Anteroposterior radiograph o Barium meal o Barium enema • Identify cross sectional Anatomy of GIT on o CT scan • MRI scan	Skill lab/SGD	OSPE/VIVA

63.	Cholecystitis	Surgery	• Define cholecystitis • Enumerate the clinical types of cholecystitis • Define gall stone disease • Comment on the causes and clinical manifestations of gallstone disease	1LGIS	MCQ
64.	Bile and bile salts	Physiology	• Describe the secretion, storage and emptying of bile • Describe the function of bile salts in fat digestion and absorption	2LGIS	MCQ
65.	Bile and bile salts	Physiology	• Revise and recall the secretion, storage and emptying of bile and the function of bile salts in fat digestion and absorption	2SGD	MCQ
66.	Digestion and absorption of lipids.	Biochemistry	• Describe the digestion and absorption of lipids. o Describe the biochemical basis of steatorrhoea	1 LGIS	MCQ
67.	Vitamins	Community medicine	• Describe the sources functions, deficiency and prevention of VIT A, D, and B group of vitamins. • Differentiate between major minerals, trace element and contaminants • Describe antioxidants	1 LGIS	MCQ
68.	Catabolism of hemoglobin	Biochemistry	• Describe the catabolism of hemoglobin and its regulation. • List the differences between conjugated and unconjugated bilirubin • Define jaundice • List the causes of conjugated hyperbilirubinemia • List the causes of conjugated hyperbilirubinemia • Describe the role of following in the diagnosis of jaundice: o Bilirubin o Biliverdin o AST o ALT • ALP	1 LGIS	MCQ
69.	Estimation of serum bilirubin	Biochemistry	• Describe the principle of serum bilirubin estimation. • Perform the procedure. • Describe the clinical significance of serum bilirubin in diagnosing different types of jaundice.	Skill lab	OSPE/VIVA

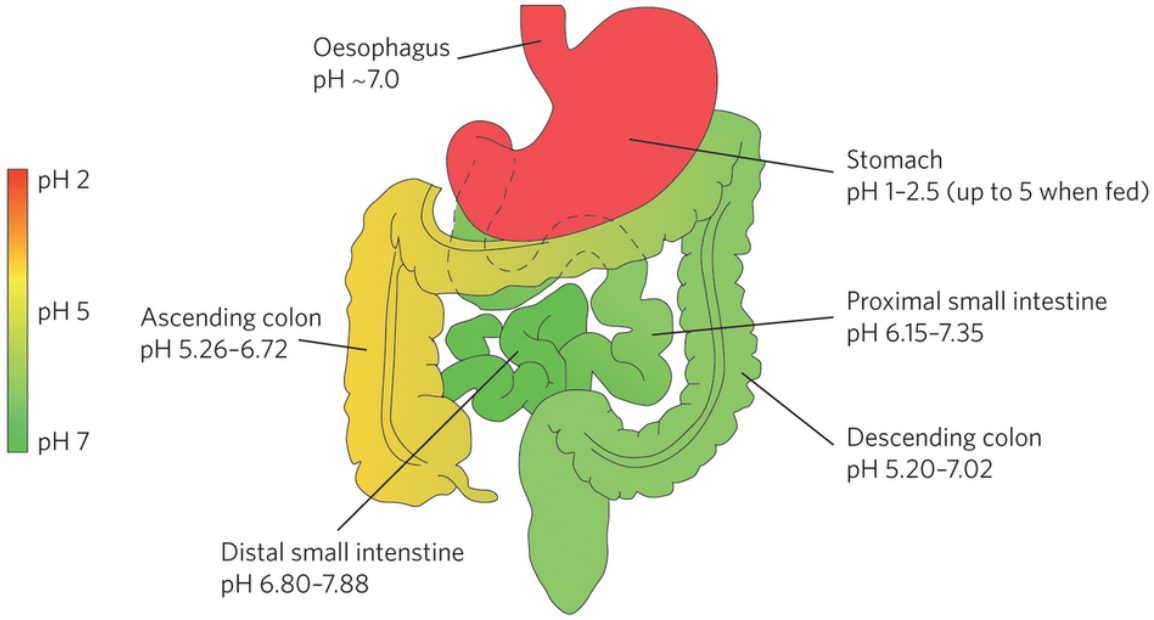
70.	Estimation of serum amylase	Biochemistry	• Describe the principle of serum amylase estimation • Perform the procedure • Describe the clinical significance of serum amylase in acute pancreatitis.	Skill lab	OSPE/VIVA
71.	Water related disease	Community Medicine	• Differentiate between temporary and permanent hardness of water. • Describe at least 3 methods of removal of hardness • Enlist diseases caused by water. • Enlist biological water borne diseases o Enlist the nonspecific water-borne diseases	1 LGIS	MCQ
72.	Purification of water	Community medicine	• Describes methods of purification of water on o Large scale • Small scale.	1 LGIS	MCQ
73.	Disinfection of water	Community Medicine	• Explain the different methods of disinfection of water on large and small scale • Differentiate between methods of chlorination	1 LGIS	MCQ
74.	Estimation of serum transaminases	Biochemistry	• Describe the principle of serum AST/ALT estimation. • Perform the procedure. • Describe the clinical significance of serum AST/ALT in liver diseases.	Skill lab	OSPE/VIVA
75.	Estimation of serum amylase	Biochemistry	• Describe the principle of serum amylase estimation • Perform the procedure o Describe the clinical significance of serum amylase in acute pancreatitis.	Skill lab	OSPE/VIVA
76.	Pancreatic secretion	Physiology	• Describe the factors effecting pancreatic secretion. • Describe phases of pancreatic secretion	2 LGIS	MCQ
77.	Pancreatic secretion	Physiology	• Revise and recall the factors effecting pancreatic secretion and phases of pancreatic secretion	1 SGD	MCQ
78.	Pancreatic juice & bile Bile salts	Biochemistry	• Describe the composition of pancreatic juice. • Enumerate functions of pancreatic juice.	2 LGIS	MCQ

			• Enumerate functions of bile. • Describe the structure & synthesis of bile acids. • Describe the structure &synthesis of bile salts • Describe the role of bile salt in lipid digestion.		
79.	Gross Anatomy of Large intestine & appendix	Anatomy	• Describe the gross Anatomy of large intestine & appendix • Identify their peritoneal attachments on the model/cadaver • identify ileocecal valve. • Identify different positions of appendix • Mark the Mcburney's point on the given model	1 SGD	MCQ
80.	Gross Anatomy of rectum and anal canal	Anatomy	• Describe the gross Anatomy of rectum and anal canal • Discuss the Peroneal covering of rectum • Comment on the venous drainage of rectum and anal canal as regards the formation of hemorrhoids	1 SGD	MCQ
81.	Histology of large intestine, rectum and anal canal	Anatomy	• Describe the Histology of rectum and anal canal • Note the differences between large intestine and rectum • Enumerate the differences between upper and lower parts of anal canal	1 LGIS	MCQ
82.	Histology of colon, rectum and anal canal	Anatomy	• Identify histological structure of colon, appendix, rectum and anal canal under microscope • Draw a labeled diagram showing their microscopic sections. • List two points of identification	1 Skill lab	OSPE/VIVA
83.	Common anal disorders	Surgery	• Enumerate common anal disorders (hemorrhoids, fissure in ano, fistula, perianal abscess) • Define each of the above disorders • Comment on the causes and clinical manifestations of the above disorders	1LGIS	MCQ
84.	Movements of large intestine	Physiology	• Describe mixing and propulsive movements of large intestine.	1 LGIS	MCQ
85.	Large intestinal Secretion	Biochemistry	• Describe the characteristics of feces. • Discuss the clinical significance of the color of the feces in: o Steatorrhoea	1 SGD	MCQ

			○ Jaundice ○ GI bleeding • Iron ingestion		
86.	Movements of large intestine	Physiology	• Revise and recall mixing and propulsive movements of large intestine.	1 SGD	MCQ
87.	Development of Foregut Physiological herniation	Anatomy	• Describe the development of foregut. • Describe physiological herniation. • Enumerate anomalies associated with: • Tracheoesophageal fistula • Tracheoesophageal septum • Atresia of the esophagus • Esophageal stenosis • Pyloric stenosis	1 LGIS	OSPE/VIVA
88.	Development of midgut and related viscera	Anatomy	• Describe the development of dorsal and ventral mesentery with reference to small intestine. • Describe the positional changes in midgut, on reentering the abdominal cavity • Describe the development of liver, spleen and pancreas • Enlist common anomalies ○ Accessory pancreatic tissue ○ Annular pancreas • Accessory hepatic ducts Meckel's diverticulum	1 LGIS	MCQ
89.	Development of hind gut	Anatomy	• Describe the development of cloaca. • Explain the formation of urogenital sinus and membrane in the development of hind gut • Describe the following anomalies: recto-anal malformations, fistulas imperforate anus	1 LGIS	MCQ
90.	GIT anomalies	Pediatric surgery	• Enumerate the developmental anomalies of GIT • Comment on the long-term manifestations of each of the developmental anomaly (foregut, midgut, hindgut anomalies)	1LGIS	MCQ
91.	Defecation reflex	Physiology	• Define defecation reflex • Describe the events & control of defecation reflex	1 LGIS	MCQ
92.	Defecation reflex	Physiology	• Revise and recall defecation reflex and the events & control of defecation reflex	1 SGD	MCQ

93.	Constipation	Pathology	• Enumerate the causes of constipation • Summarize the pathology of movement disorders of large intestine	1LGIS	MCQ
94.	Bioenergetics	Biochemistry	• Describe endergonic and exergonic reactions coupling through ATP • Recall the following: o Biologic oxidation and reduction reactions o Methods of electron transfer o Redox potential o Enzymes of biologic oxidation and reduction reactions	2LGIS	MCQ
95.	Nerve supply of GIT	Anatomy	• Identify abdominal nerves • Describe the autonomic nerve supply to GIT • Relate the nerve supply to the functions of GIT	1 SGD	MCQ
96.	Electron transport chain	Biochemistry	• Describe: • Respiratory chain and Oxidative phosphorylation, its components and carriers • ATP synthesis coupled with electron flow o Phosphorylation of ADP coupled with electron transfer	1 LGIS	MCQ
97.	Uncouplers and inhibitors	Biochemistry	• Discuss the role of ATP synthetase in relation to proton pump o Comment on the un-couplers and inhibitors of phosphorylation	1LGIS	MCQ
98.	Nutritional requirements	Community medicine	• Describe nutritional requirements of an adult person. • Describe measurement of energy, reference man and women, energy requirement, • Explain requirement of protein fat and carbohydrate. • Describe balanced diet.	1 LGIS	MCQ
99.	Assessment of nutritional status	Community medicine	• Describe nutritional assessment methods, • Describe food hygiene, milk hygiene, meat and fish. • Enlist food borne disease • Define adulteration of food	1 LGIS	MCQ

100.	Vomiting reflex	Physiology	• Define vomiting • Describe the mechanism of vomiting • Describe nervous control of vomiting reflex	1 LGIS	MCQ
101.	Vomiting reflex	Physiology	• Revise and recall the mechanism of vomiting and nervous control of vomiting reflex	1 SGD	MCQ
102.	Nutrition & vitamins	Medicine	• Define Nutrition • Comment the role of various nutrients and vitamins in the maintenance of health	1LGIS	MCQ
103.	Stress, Illness and Adaptation	Behavioral Sciences	• Define Stress. • Describe the stress response and its components. • Define General Adaptation Syndrome. • Discuss physiological and psychological reactions to stress. • Describe effects of stress on health. • Enlist common disorders resulting from chronic stress. • Describe moderators of the stress.	1 LGIS	MCQ



Learning Resources:

Anatomy

Text Books

1. Regional Anatomy by Snell
2. Embryology by Langman's
3. Snell's Neuro Anatomy
4. Histology by Janquira
5. General Anatomy by Laique Hussain
6. General Anatomy by Laique Hussain

Reference Books:

7. Clinical Anatomy by Keith L. Moore
8. Histology by Laique Hussain
9. Histology by Difiore
10. Student Gray's
11. Embryology by Keith L. Moore

Physiology

10. Text Book of Medical Physiology by Guyton & Hall
11. Physiology by Lippincott

Biochemistry

12. Lippincott Biochemistry.

113. Harper's Biochemistry

Pathology

14. Pathologic Basis of Disease by Robbins and Cotran

Pharmacology

15. Lippincott pharmacology

16. Katzung Pharmacology

Behavioral Sciences

17. Introduction to Psychology by Edward. E Smith.

18. Behavioral Science by Lippincott Williams.

Community Medicine

19. Text book of Preventive and Social Medicine by JE. Park

Medicine

20. Davidson's Text book of Medicine

Surgery

21. Text book of Surgery by Bailey & Love

22. Text book of Radiology by Christson

FOR ENQUIRIES CONTACT:

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