

1. Your patient is a 75-year-old man with an indwelling urinary catheter following prostatectomy for prostate cancer. He now has the sudden onset of fever to 40°C, blood pressure of 70/40 mm Hg, and a pulse of 140 bpm. You draw several blood cultures, and the laboratory reports that all are positive for a gram-negative rod that forms red pigmented colonies. Which one of the following bacteria is the most likely cause of this infection?

- (A) *Escherichia coli*
- (B) *Klebsiella pneumoniae*
- (C) *Proteus mirabilis*
- (D) *Pseudomonas aeruginosa*

(E) *Serratia marcescens*

2. You're a public health epidemiologist who is called to investigate an outbreak of bloody diarrhea in 16 people. You find that it is associated with eating rare hamburgers in a particular fast-food restaurant. A culture of the remaining uncooked hamburger grows a gram-negative rod that produces a dark purple colony on EMB agar, which is evidence that it ferments lactose. Which one of the following bacteria is the most likely cause of this outbreak?

(A) *Escherichia coli*

- (B) *Salmonella enterica*
- (C) *Salmonella typhi*
- (D) *Shigella dysenteriae*
- (E) *Vibrio cholerae*

3. Your patient has third-degree burns over most of his body. He was doing well until 2 days ago, when he spiked a fever, and his dressings revealed pus that had a blue-green color. Gram stain of the pus revealed a gram-negative rod that formed colorless colonies on EMB agar. Which one of the following bacteria is the most likely cause of this infection?

- (A) *Campylobacter jejuni*
- (B) *Escherichia coli*
- (C) *Haemophilus influenzae*

(D) *Pseudomonas aeruginosa*

(E) *Salmonella enterica*

4. Regarding the patient in Question 3, which one of the following is the best combination of antibiotics to treat the infection?

- (A) Azithromycin plus gentamicin
- (B) Doxycycline plus gentamicin
- (C) Metronidazole plus gentamicin

(D) Piperacillin/tazobactam plus gentamicin

(E) Vancomycin plus gentamicin

5. Regarding the members of the family Enterobacteriaceae, which

one of the following statements is the most accurate?

(A) All members of the family are anaerobic, which means they must be cultured in the absence of oxygen.

(B) All members of the family ferment lactose, which is an important diagnostic criterion in the clinical laboratory.

(C) All members of the family have endotoxin, an important pathogenetic factor.

(D) All members of the family produce an enterotoxin, which ADP-ribosylates a G protein in human enterocytes.

6. You're on a summer program working in a clinic in a small village in Ecuador. There is an outbreak of cholera, and your patient has massive diarrhea and a blood pressure of 70/40 mm Hg. Which one of the following would be the most appropriate action to take?

(A) Administer antimotility drugs to diminish the diarrhea.

(B) Administer intravenous saline to replenish volume.

(C) Administer tetracycline to kill the organism.

(D) Perform stool cultures and fecal leukocyte tests to make an accurate diagnosis.

7. Your patient is a 20-year-old woman with diarrhea. She has just returned to the United States from a 3-week trip to Peru, where she ate some raw shellfish at the farewell party. She now has severe watery diarrhea, perhaps 20 bowel movements a day, and is feeling quite weak and dizzy. Her stool is guaiac-negative, a test that determines whether there is blood in the stool. A Gram stain of the stool reveals curved gram-negative rods. Culture of the stool on MacConkey's agar shows colorless colonies. Which one of the following bacteria is the most likely cause of this infection?

(A) *Escherichia coli*

(B) *Helicobacter pylori*

(C) *Proteus mirabilis*

(D) *Pseudomonas aeruginosa*

(E) *Vibrio cholerae*

8. Your patient is a 6-year-old boy with bloody diarrhea for the past 2 days accompanied by fever to 40°C and vomiting. He has a pet corn snake. Blood culture and stool culture from the boy and stool culture from the snake (taken very carefully!) revealed the same organism. The cultures grew a gram-negative rod that formed colorless colonies on EMB agar. Which one of the following bacteria is the most likely cause of this infection?

(A) *Helicobacter pylori*

(B) *Proteus mirabilis*

(C) *Salmonella enterica*

(D) *Shigella dysenteriae*

(E) *Vibrio cholerae*

9. Your patient is a 25-year-old woman with pain on urination and cloudy urine but no fever or flank pain. She has not been hospitalized. You think she probably has cystitis, an infection of the urinary bladder. A Gram stain of the urine reveals gram-negative rods. Culture of the urine on EMB agar shows colorless colonies, and a urease test was positive. Swarming motility was noted on the blood agar plate. Which one of the following bacteria is the most likely cause of this infection?

(A) *Escherichia coli*

(B) *Helicobacter pylori*

(C) *Proteus mirabilis*

(D) *Pseudomonas aeruginosa*

(E) *Serratia marcescens*

10. Your patient has abdominal pain, and a mass is discovered in the left lower quadrant. Upon laparotomy (surgical opening of the abdomen), an abscess is found. Culture of the pus reveals *Bacteroides fragilis*. Regarding this organism, which one of the following is the most accurate?

(A) A stage in the life cycle of *Bacteroides fragilis* involves forming spores in the soil.

(B) *Bacteroides fragilis* is an anaerobic gram-negative rod whose natural habitat is the human colon.

(C) *Bacteroides fragilis* produces black colonies when grown on blood agar.

(D) Pathogenesis by *Bacteroides fragilis* involves an exotoxin that increases cyclic AMP by ADP-ribosylation of a G protein.

(E) The toxoid vaccine should be administered to prevent disease caused by *Bacteroides fragilis*.

11. Regarding the patient in Question 10, which one of the following is the best antibiotic to treat the infection?

(A) Doxycycline

(B) Gentamicin

(C) Metronidazole

(D) Penicillin G

(E) Rifampin

12. Your patient in the gastrointestinal clinic is a 50-year-old insurance salesman with what he describes as a "sour stomach" for several months. Antacids relieve the symptoms. After taking a complete history and doing a physical examination, you discuss the case with your resident, who suggests doing a urea breath test, which tests for the presence of urease. Which one of the following bacteria does the resident think is the most likely cause of the patient's disease?

(A) *Helicobacter pylori*

(B) *Proteus mirabilis*

(C) *Salmonella enterica*

(D) *Serratia marcescens*

(E) *Shigella dysenteriae*

13. Your patient is a 35-year-old woman with epilepsy who had a grand-mal seizure about 2 months ago. She comes to see you now because she has been coughing up foul-smelling sputum for the past week. Chest X-ray reveals a cavity with an air-fluid level. Gram stain of the sputum reveals gram-negative rods, and culture reveals black colonies that grow on blood agar only in the absence of air. Which one of the following bacteria is the most likely cause of this infection?

(A) *Bacteroides fragilis*

(B) *Campylobacter jejuni*

(C) *Klebsiella pneumoniae*

(D) *Prevotella melaninogenica*

(E) *Proteus mirabilis*

ANSWERS (1) (E) (2) (A) (3) (D) (4) (D) (5) (C) (6) (B) (7) (E) (8) (C) (9) (C) (10) (B) (11) (C) (12) (A) (13) (D)

1. Regarding poliovirus and the disease poliomyelitis, which one of the following is most accurate?

(A) Poliovirus is transmitted primarily by the fecal–oral route.

(B) New antigenic variants arise by coinfection with animal strains of poliovirus.

(C) Paralytic poliomyelitis is the most common manifestation of poliovirus infection.

(D) Poliovirus has single-stranded RNA as its genome and a polymerase in the virion that synthesizes its mRNA.

(E) The current vaccine recommendation is to give the live, attenuated vaccine for the first three immunizations to prevent the child from acting as a reservoir, followed by boosters using the killed vaccine.

2. A 70-year-old retired carpenter has signed up with a volunteer organization to build houses in a developing country where polio is still endemic. He plans to be there about 9 months. He thinks he has never been immunized against polio. Which one of the following is the most appropriate thing to do?

(A) Give immune serum globulins (ISG).

(B) Give the killed vaccine containing only type 3.

(C) Give the killed vaccine containing types 1, 2, and 3.

- (D) Give the live vaccine containing only type 3.
- (E) Give the live vaccine containing types 1, 2, and 3.
3. Regarding norovirus, which one of the following is most accurate?
- (A) The diarrhea is caused by an exotoxin that increases cyclic adenosine monophosphate (cAMP).
- (B) There are no neutrophils or red cells in the stool.**
- (C) Ritonavir, a protease inhibitor, is the drug of choice for chronic diarrhea caused by norovirus.
- (D) Ingestion of undercooked hamburger is a common mode of acquisition of norovirus as cattle are a major reservoir of the virus.
- (E) The diagnosis of norovirus-induced diarrhea is typically made by the detection of a fourfold or greater rise in antibody titer to the virus.
4. Regarding rotavirus, which one of the following is most accurate?
- (A) Rotavirus is a major cause of nosocomial diarrhea in intensive care units.
- (B) The vaccine against rotavirus contains live, attenuated virus as the immunogen.**
- (C) Rotavirus has a nonsegmented, single-stranded RNA genome, and there is no polymerase in the virion.
- (D) The diagnosis of rotavirus diarrhea is typically made by the detection of a fourfold or greater rise in antibody titer to the virus.
- (E) Diarrhea caused by rotavirus is due to a viral protein that increases the release of IgA from many submucosal B lymphocytes.

ANSWERS (1) (A) (2) (C) (3) (B) (4) (B)

SELF-ASSESSMENT QUESTIONS

1. An outbreak of jaundice occurs in several young children who attend the same day care center. If the outbreak was caused by a virus, which one of the following is the most likely cause?
- (A) Hepatitis A virus**
- (B) Hepatitis B virus
- (C) Hepatitis C virus
- (D) Hepatitis D virus
2. Regarding hepatitis A virus (HAV), which one of the following statements is most accurate?
- (A) The HAV vaccine contains live, attenuated virus as the immunogen.
- (B) The screening of blood for transfusion has greatly reduced the

spread of this virus.

(C) The diagnosis is typically made by serologic tests rather than by culturing the virus.

(D) Multiple episodes of hepatitis A are common because it has three serotypes.

(E) It has a segmented, negative-polarity, single-stranded RNA genome and an RNA polymerase in the virion.

3. A woman who is hepatitis B surface antigen (HBsAg) positive and hepatitis B surface antibody (HBsAb) negative has just given birth. Which one of the following is the most appropriate thing to do for the newborn?

(A) Nothing. The child is protected against hepatitis B.

(B) Immunize with the vaccine containing HBsAg (HBV vaccine).

(C) Give hepatitis B hyperimmune globulin (HBIG).

(D) Give both the HBV vaccine and HBIG.

4. Regarding hepatitis B virus (HBV) and the disease hepatitis B, which one of the following is most accurate?

(A) The most reliable indicator that a person can transmit HBV is the presence of HBsAg in the blood.

(B) HBV has a circular, partially double-stranded DNA as its genome and has a DNA polymerase in the virion.

(C) Healthcare personnel who sustain a needle-stick injury while taking blood from a person with hepatitis B should receive acyclovir.

(D) HBV infection induces antibody to HBcAg (core antigen), which protects the person from a second attack by the same strain of HBV.

(E) A person in the "window period" can be diagnosed as having been infected by HBV if antibody to the surface antigen (HBsAg) is present.

5. Regarding hepatitis C virus (HCV), which one of the following is most accurate?

(A) Chronic infection with HCV predisposes to hepatocellular carcinoma.

(B) HCV is a defective virus that requires concurrent hepatitis B virus (HBV) infection in order to replicate.

(C) Chronic infection with HCV occurs less frequently than chronic infection with HBV.

(D) The killed vaccine against HCV is poorly immunogenic, so booster doses must be given at least every 5 years.

(E) Proper sewage disposal has significantly decreased the incidence of hepatitis C.

6. Regarding hepatitis D virus (HDV), which one of the following is most accurate?

(A) Alpha interferon can eradicate the latent state established by HDV.

(B) Immunization against hepatitis B virus (HBV) will reduce the incidence of hepatitis caused by HDV.

(C) HDV has DNA as its genome and an RNA-dependent DNA polymerase in the virion.

(D) The laboratory diagnosis of HDV infection is made by growing HDV in cells coinfecting with HBV.

(E) Many HDV infections occur in young children in the diaper stage in day care centers because the virus is transmitted primarily by the fecal-oral route.

7. Your patient is a 35-year-old man who complains that the whites of his eyes have turned yellow. After taking a history and doing a physical, you order serologic tests to determine whether he has viral hepatitis. On the basis of the results, you tell him that he has a mild form of hepatitis that does not cause long-term damage to the liver. Your conclusion is based on a positive result on which one of the following tests?

(A) Antibody to hepatitis C virus

(B) Hepatitis B surface antigen

(C) Hepatitis delta antigen

(D) IgM antibody to hepatitis A virus

8. Your patient is a 20-year-old woman with chronic hepatitis B that was diagnosed by detecting hepatitis B antigen in her blood more than 6 months after her acute infection. Which one of the following is the best choice of drug to treat her chronic hepatitis B?

(A) Acyclovir

(B) Foscarnet

(C) Entecavir

(D) Ritonavir

(E) Zidovudine

9. Your patient is a 27-year-old man with a history of intravenous drug use who now is diagnosed with chronic hepatitis C. He is HIV antibody negative. Which one of the following is the best choice of drugs to treat his chronic hepatitis C?

(A) Acyclovir and foscarnet

(B) Ganciclovir and enfuvirtide

(C) Sofosbuvir and velpatasvir

(D) Zidovudine and lamivudine

(E) Tenofovir and simiprevir

ANSWERS (1) (A) (2) (C) (3) (D) (4) (B) (5) (A) (6) (B) (7) (D) (8) (C) (9) (C)

Pharmacology GIT

1. A 45-year-old woman with a history of intravenous drug abuse is seen in the clinic for an evaluation of chronic HBV infection. Although she received the HBV diagnosis & months ago, she has not yet been treated for it. Laboratory values reported today include HBsAg positive, HBeAg positive, AST 650 IU/mL, ALT 850 IU/mL, HBV DNA 107,000 IU/mL, SCr 0.9 mg/dL, INR 1.3, and albumin 3.9 g/dL. She has no evidence of ascites or encephalopathy. A liver biopsy has revealed severe necroinflammation and bridging fibrosis. Resistance testing reveals the presence of the YMDD mutation. Which is the best course of action?

- a) Withhold drug therapy and recheck HBV DNA in 6 months.
- b) Initiate PEG-IFNa-2a plus ribavirin.
- c) Initiate lamivudine 100 mg/day
- d) Initiate tenofovir 300 mg/day.

2. Which best describes the correct population and methodology recommended for serologic testing for immunity after administration of the HBV vaccine?

- a) Patients with chronic liver disease: Test for anti-hepatitis B surface antibody (anti-HBs); test 1-2 months after the last dose of the vaccine series.
- b) Patients with chronic liver disease: Test for anti-hepatitis B early antigen (anti-HBe); test 3-4 months after the last dose of the vaccine series.
- c) Health care workers: Test for anti-HBs; test 1-2 months after the last dose of the vaccine series.
- d) Health care workers: Test for anti-HBe; test 3-4 months after the last dose of the vaccine series

3. You are contacted by one of the new GI medical fellows regarding the use of infliximab for patient with a history of Crohn disease (CD) and no other medical conditions. He says that he believes he remembers that there are special precautions to consider when prescribing this medication but that he cannot remember exactly what they are and asks for your assistance. The GI fellow tells you that the patient is currently taking mesalamine (Pentasa) g by mouth four times daily, azathioprine 100 mg by mouth once daily, esomeprazole 40 mg by mouth once daily, lisinopril 20 mg by mouth once daily, entecavir mg by mouth once daily, and acetaminophen 325 mg by mouth twice daily. Which recommendation is best for you to provide the GI fellow regarding infliximab therapy for this patient?

- a) Premedicate with an antihistamine, acetaminophen, and corticosteroids before the fist dose.
- b) Obtain additional information regarding this patient's medical history before prescribing therapy.
- c) Assess cardiac function by obtaining an echocardiogram before administration.
- d) Order a TB test to rule out tuberculosis (TB) before administration

Pharmacology GIT

4. P. is a 47-year-old woman with sharp epigastric pain that is worse after meals. She says she feels bloated all the time and frequently belches. She finds some relief with antacids, but the pain returns about 3 hours after each dose. She states she has only begun experiencing these symptoms every other day for the past 2 months. An UBT is performed and is positive for H. pylori. Current medications include citalopram 20 mg/ day, loratadine 10 mg/day, and daily multivitamin. She has a penicillin allergy. Which treatment for H. pylori is best?

- a) Amoxicillin g twice daily plus clarithromycin 500 mg twice daily plus esomeprazole 40 mg once daily for 7 days.
- b) Amoxicillin g twice daily plus clarithromycin 500 mg twice daily plus esomeprazole 40 mg twice daily for 14 days.
- c) Bismuth subsalicylate 525 mg four times daily plus metronidazole 250 mg four times daily plus tetracycline 500 mg four times daily plus esomeprazole 40 mg once daily for 7 days.
- d) Bismuth subsalicylate 525 mg four times daily plus metronidazole 250 mg four times daily plus tetracycline 500 mg four times daily plus esomeprazole 40 mg once daily for 14 days.

5. Which option is best to perform to confirm H. pylori eradication upon completing H. pylori therapy?

- a) Tissue culture.
- b) UBT
- c) Serum antibody test
- d) RUT.

6. 57-year-old woman has child-pugh class b cirrhosis secondary to autoimmune hepatitis. her medical history includes hypothyroidism and chronic back pain, she has new-onset abdominal pain and shortness of breath. she is afebrile with abdominal tenderness, including fink bulging and shifting dullness as well as pulmonary congestion. all laboratory values are within the normal limits, she takes levothyroxine 75 mcg once daily and oxycodone 10 mg every 8 hours as needed for pain. She reports no drug allergies, which is the best recommendation to treat her new-onset ascites?

- a) Spironolactone 100 mg by mouth daily plus furosemide 40 mg by mouth daily.
- b) Spironolactone 100 mg by mouth daily.
- c) Spironolactone 40 mg by mouth daily plus furosemide 100 mg by mouth daily.
- d) Furosemide 40 mg by mouth daily

Pharmacology GIT

7. S.P. is a 53-year-old man with Child-Pugh class B cirrhosis secondary to alcohol abuse. Other past medical conditions include chronic renal insufficiency and gout. Vital signs include temperature 98.7°F, heart rate 91 beats/minute, respiratory rate 18 breaths/minute, and blood pressure 126/87 mm Hg. Today's laboratory values are within normal limits, except for AST 120 IU/mL, ALT 187 IU/mL, and SCr 1.6 mg/dL. Current medications include spironolactone 100 mg orally daily, furosemide 40 mg orally daily, and a daily multivitamin. He is allergic to sulfa and shell fish. During the visit, you notice the patient seems more confused than usual, with slurred speech and asterixis. S.P. is unable to give a good medical history, so you question his wife, who states the confusion and disorientation started last week. He has not received treatment for HE. Which therapeutic choice would be best at this time?

- a) Rifaximin 550 mg twice daily by mouth and lactulose by mouth as needed.
- b) Neomycin 1000 mg by mouth every 6 hours.
- c) Lactulose 45 ml. by mouth three times daily.
- d) Lactulose 45 mL/hour by mouth until evacuation occurs; then titrate dose as needed to achieve three bowel movements a day.

8. Which one of the following is the preferred gastro protective therapy for a 67 year old woman with rheumatoid arthritis receiving naproxen 500 mg by mouth daily, metoprolol 25 mg by mouth twice daily, aspirin 81 mg by mouth once daily, and alendronate 70 mcg by mouth weekly?

- a) Lansoprazole 30 mg daily.
- b) No concomitant therapy necessary.
- c) Misoprostol 200 mcg twice daily.
- d) Esomeprazole 40 mg twice daily

9. A gastric ulcer patient requires close follow up to document complete ulcer healing because:

- a) perforation into the intestine is common.
- b) spontaneous healing of the ulcer may occur in 30% to 50% of cases.
- c) there is the risk of the ulcer being cancerous.
- d) symptoms tend to be chronic and recur.
- e) weight loss may be severe in gastric ulcer patients

Pharmacology GIT

10. An emergency department physician asks for your recommendation regarding whether a patient should be initiated on therapy for hepatic encephalopathy. As you discuss the case, you learn that the patient, J.C., is a 52-year-old woman with liver cirrhosis of an unknown etiology. She presents to the emergency department today because of increased confusion, changes in sleep patterns, and decreased ability to function at work. She states that the symptoms come and go but that she feels like this much of the day. The physician was able to confirm her symptoms with her mother, with whom she lives. While in the emergency department, a head CT was performed, and laboratory values were obtained. Laboratory values and vital signs were normal except for her liver panel, which was consistent with cirrhosis. Her calculated MELD score was 14. Based on the information available, which one of the following would you recommend to treat her hepatic encephalopathy?

- a) Rifaximin.
- b) Lactulose.
- c) Flumazenil.
- d) Long term protein restriction.

11. A patient has severe gastroesophageal reflux disease (GERD). In addition to providing some immediate symptom relief, for which we will prescribe usually effective doses of an OTC combination antacid product, we want to suppress gastric acid as fully as possible. Which of the following drug is most likely to meet that criterion?

- a) Atropine
- b) Calcium carbonate
- c) Cimetidine
- d) Esomeprazole
- e) Misoprostol

12. A patient with chronic HBV infection has been taking lamivudine 100 mg by mouth daily for 24 months and has been doing well. Recent laboratory data indicated an AST 197 IU/mL, ALT 227 IU/mL, total bilirubin 2.7 mg/dL (indirect 1.9 mg/dL, direct 0.8 mg/dL), serum creatinine 1.1 mg/dL, and a detectable HBV DNA. The HBV DNA became undetectable 2 months after lamivudine was initiated and was undetectable when laboratory values were obtained 3 months ago. Which one of the following is the best course of action?

- a) Add emtricitabine 200 mg/tenofovir 200 mg 1 tablet by mouth daily.
- b) Add Tildivudine.
- c) Discontinue lamivudine and add tenofovir.
- d) lamivudine and add adefovir.

Pharmacology GIT

13. A 38-year-old white woman presents with an 8-week history of new-onset cramping abdominal pain together with 2–4 bloody stools per day. She has a medical history of urinary tract infection and reports an allergy to “sulfa”-containing medications (shortness of breath). Colonoscopy reveals diffuse superficial colonic inflammation consistent with ulcerative colitis (UC). The inflammation is continuous and extends to the hepatic flexure. Which drug therapy is best?

- a) Sulfasalazine 4 g/day.
- b) Hydrocortisone enema 100 mg every night.
- c) Mercaptopurine 75 mg/day.
- d) Mesalamine (Delzicol) 1.6 g orally three times daily.

14. A 35-year-old man presents with newly diagnosed mild-moderately active UC affecting his descending colon and rectum (left-sided disease). He takes loratadine 10 mg/day for seasonal allergies. He has no known drug allergies. Which drug regimen is best?

- a) Balsalazide 750 mg twice daily.
- b) Methotrexate 25 mg intramuscularly once weekly.
- c) Infliximab 5 mg/kg intravenously.
- d) Mesalamine enema 1000 mg rectally once daily.

15. A 35-year-old man with a history of Crohn disease (CD) is in the clinic today with a chief concern of mucopurulent drainage from an erythematous region on his abdomen. Examination reveals a moderate-size enterocutaneous fistula in the left upper abdominal area. He takes mesalamine (Pentasa) 250 mg 4 capsules three times daily and azathioprine 150 mg/day. His physician wants to prescribe infliximab. Which recommendation is best when initiating infliximab therapy?

- a) Rule out tuberculosis by purified protein derivative or QuantiFERON-TB test.
- b) Administer a test dose before the initial infusion.
- c) Admit to the hospital for the administration of all doses.
- d) Obtain an echocardiogram to assess cardiac function.

Physiology GIT

1. Mucus secreted by GIT glands has the following features except

- a) Glycoprotein in mucous can neutralize large quantities of acid or alkali
- b) It prevent the actual contact of most food particles with mucosa of GIT
- c) Mucus has adherent properties that make it adhere tightly to food particles
- d) It strongly resists to digestion by GIT enzymes
- e) Mucus has a low resistance for slippage

2. Regarding composition of gastrointestinal secretions

- a) Small bowel secretion contain the same amount of Na^+ as plasma
- b) Pancreatic secretions contain 20 Mmol K^+ /liter
- c) Stomach and biliary secretions contain no HCO_3^-
- d) Stomach Na^+ concentration depends on Type of food in it
- e) None of the above

3. Salivary secretions

- a) During rest the Na^+ concentration in saliva is one 5th its concentration in plasma
- b) HCO_3^- is actively reabsorbed from saliva
- c) Sympathetic stimulation has no effect on salivation
- d) Final saliva secretion in mouth is hypotonic
- e) Salivary ducts secrete most of ptyalin

4. Regarding HCL acid secretion

- a) Final pathway of Hcl secretion is blocked by drug Omeprazole
- b) H_2 receptor is blocked by atropine
- c) C. Acetylcholine receptors are blocked by drug cimetidine
- d) All of the above
- e) None of the above

5. Gastric glands

- a) Parietal cells secrete pepsinogen
- b) Intrinsic factor is secreted by pyloric glands
- c) Gastrin hormone is secreted in pyloric glands
- d) Oxyntic glands represent 20% of gastric cells
- e) Enterochromaffin cells secrete Somatostatin

6. Phases of gastric acid secretion

- a) Cephalic phase occur only after food enter the stomach
- b) Gastric phase is responsible for 50% of gastric secretion
- c) Intestinal phase inhibit only gastric secretions
- d) Enterogastric reflex stimulate gastric secretion
- e) Excessive acidity of stomach inhibit Hcl secretion

Physiology GIT

7. Gastrin hormone all are true except

- a) Greatly stimulates HCl secretion
- b) Slightly stimulates pepsinogen secretion
- c) Contracts lower esophageal sphincter
- d) Increases gastric motility
- e) contract pyloric sphincter

8. Pancreatic secretions

- a) Pancreatic enzymes for digesting proteins include only trypsin, chymotrypsin
- b) Pancreatic acini produce secretion rich in alkali
- c) Secretin hormone increase pancreatic bicarbonate secretion
- d) Pancreatic secretion are not fully sufficient for complete digestion of food
- e) None of the above

9. In acute pancreatitis

- a) Serum trypsin level is used in diagnosis
- b) Commonest cause is gall bladder disease
- c) Serum amylase has half life of one week
- d) Pancreatic trauma has no rule in its etiology
- e) Usually fatal disease

10. Factors which regulate pancreatic secretion include all except

- a) Acetylcholine
- b) Secretin
- c) Cholecystokinin
- d) Acidity of duodenum
- e) Gastrin

11. Functions of liver include all except

- a) Storage function of 10% of blood volume
- b) Synthesis of essential amino acids
- c) Conversion of ammonia to urea
- d) Synthesis of cholesterol, lipoproteins & phospholipids
- e) Synthesis of 25 hydroxy-cholecalciferol, plasma proteins

12. After a fatty meal, most of the fat would be:

- a) absorbed into the portal circulation and transport to the liver
- b) absorbed in the portal vein and transported in the hepatic artery
- c) absorbed into chylomicrons in the lymphatics
- d) absorbed as triglycerides into the portal vein and bypass the liver
- e) None of the above

Physiology GIT

13. bile salts

- a) Primary bile salts include cholic and deoxycholic acids
- b) are essential for absorption of cholesterol
- c) They are cholertics as they stimulate contraction of gall bladder
- d) Constipating action by abolishing intestinal peristalsis
- e) In absence of bile salts 80% of fat will be lost in feces

14. Causes of gall bladder stones include all except

- a) Too much absorption of water from bile
- b) Interruption of enterohepatic circulation
- c) Gall bladder Infection by gram-ve bacteria
- d) Decrease amount of bile salts in bile
- e) Decrease concentration of cholesterol in bile

15. Enterohepatic circulation of bile salts is impaired by all except

- a) Over growth of bacteria in terminal ileum
- b) Crohn's disease
- c) Resection of terminal ileum
- d) Enterocolic fistula
- e) Jejunal resection

16. The most important means for regulating small intestine secretion is:

- a) Vagal stimulation
- b) Local enteric reflexes
- c) Hormone secretin
- d) Vasoactive intestinal peptides
- e) Sympathetic stimulation

17. Regarding peptic ulcer disease

- a) Duodenal ulcer patient lose weight
- b) Gastric ulcer patient induce vomiting
- c) Duodenal ulcer patient is afraid to eat certain food types
- d) Gastric ulcer pain occur 2 hour after eating
- e) Seasonal variation is common in gastric ulcers

18. Concerning regulation of pancreatic secretion:

- a) Presence of food in the stomach directly increases pancreatic secretion.
- b) Sight or smell of food does not affect pancreatic secretion.
- c) The action of secretin in producing pancreatic secretion rich in HCO_3^- is augmented by cholecystokinin
- d) Pancreatic secretion is entirely under hormonal control.
- e) None of the above

Physiology GIT

19. Liver physiology

- a) Blood flow from central vein to liver sinusoids
- b) Liver receive about 20% of cardiac output
- c) Central vein drains to hepatic veins
- d) Vankupffer cells are present in the wall of biliary canaliculi
- e) Portal vein supply liver with about 500 ml per minute

20. Functions of gallbladder include all except

- a) Storage of bile
- b) Concentration of bile
- c) Secretion of mucus
- d) Secretion of bicarbonates
- e) Evacuation by contraction of wall and relaxation of sphincter

21. The following statements regarding the histological structures of the intestine are true EXCEPT:

- a) Brunner's glands are located in the submucosa of the duodenum
- b) The surface epithelial cells are rich in microvilli
- c) The mucosa of the colon has deep crypts but no villi
- d) Argentaffin cells secrete hormones & vasoactive amines
- e) Paneth cells secrete mucous

22. Cholecystokinin all are true except

- a) Stimulate pancreatic acinar cell to secrete juice rich in enzymes.
- b) Trophic to endocrine pancreas
- c) Augment action of secretin.
- d) Stimulate gall bladder contraction (act as cholagogue).
- e) Involved in regulation of food intake

23. Bile

- a) The initial bile secretion by liver cells is rich in bicarbonate
- b) Bile has PH of 7.4
- c) Volume of bile secretion daily is 600-1200cc
- d) Between meals bile flow is directed to gall bladder
- e) None of the above

24. Most abundant organic constituent of bile is

- a) Cholesterol
- b) Fatty acids
- c) Phospholipids
- d) Bile salts
- e) Bilirubin

Physiology GIT

25. Resection of the terminal ileum will most likely result in which of the following?

- a) Increased bile acid concentration in the enterohepatic circulation
- b) Decreased glucose absorption
- c) Increased water content of the feces
- d) Decreased fat absorption
- e) Increased fat absorption

26. Regarding gastritis and gastric ulcers

- a) The commonest cause of gastritis is NSAIDS abuse.
- b) Type III gastric ulcer is ulcer at pylorus and ulcer at D1
- c) In cases of gastric atrophy and chronic gastritis, B12 vitamin absorption is decreased five time.
- d) Helicobacter pylori infection can cause gastric lymphomas but not adenocarcinoma of stomach.
- e) Type I and type IV gastric ulcers has low HCL secretions

27. The gastric reservoir

- a) Receptive relaxation of gastric reservoir is triggered by enterogastric inhibitory reflexes.
- b) Adaptive relaxation of gastric reservoir is triggered by swallowing reflexes.
- c) Feedback relaxation of gastric reservoir is triggered by chyme in small intestine
- d) Vago-vagal reflex" increase the tone in the muscular wall of the body of the stomach.
- e) Retropulsion," weak mixing movement in the stomach.

28. Regarding the gall bladder all are true except

- a) Between meals the sphincter of oddi is closed and bile is redirected to GB
- b) White bile means cystic duct is obstructed
- c) Acidification of bile decrease possibility of GB disease
- d) Asymptomatic gall bladder stones is present in 50% of GBS.
- e) CCK hormone stimulates bile release after fatty meals,

29. Law of the gut all are true except

- a) Receptive relaxation occur proximal to the distended segment
- b) The peristaltic reflex plus the anal direction of movement of the peristalsis.
- c) Peristaltic reflex is blocked by atropine
- d) Peristalsis occurs only weakly or not at all in any portion of the GIT has that had congenital absence of the myenteric plexus
- e) Peristalsis normally begins proximal to the distended segment

30. Lack of bile salts in the in small bowel may lead to all except

- a) Bulky offensive greasy stool pale.
- b) Malabsorption of Vitamin K, A DE.
- c) Severe itch.
- d) A High Prothrombin level in blood.
- e) Formation of gall bladder stones.

بسم الله الرحمن الرحيم

Anatomy mcq of GIT

Dr. Elias Arten

1- Which statement best describes the planes of the abdomen?

A- The transpyloric plane lies halfway between the xiphoid and the symphysis pubis.

B- The transpyloric plane passes through the hilar of the kidneys.

C- The subcostal plane is at the level of the body of L2.

D- The iliac crests lie at the level of L5.

E- The umbilicus usually lies at the level of the L4/L5 disc.

Answer/ B

2- Which statement about the regions of the abdomen is correct?

A- The epigastrium lies medial to the mid-clavicular line and above the transpyloric plane.

B- The suprapubic region lies between the midclavicular lines, the transpyloric plane and the intertubercular line.

C- The iliac fossa lies lateral to the mid-clavicular line and above the intertubercular line.

D- The hypochondrium lies below the transpyloric plane and medial to the midclavicular line.

E- The mid-clavicular line crosses the midpoint of the inguinal ligament.

Answer/ A

3- Which of the following statements about the peritoneum is correct?

A- The median umbilical fold contains the obliterated remnant of the umbilical artery.

B- The greater omentum consists of four layers of peritoneum.

C- The gastrosplenic ligament contains the splenic vessels.

D- The lienorenal ligament contains the short gastric vessels.

E- The lesser omentum connects the liver to the transverse colon.

Answer/ B

4- Which statement about the lesser sac is not correct?

A- It is connected to the greater sac via the epiploic foramen.

B- The stomach is related anteriorly.

C- The pancreas is a posterior relation.

D- The greater omentum is an anterior relation.

E- The right border is formed by the lienorenal and gastrosplenic ligaments.

Answer/ E

5- Which statement about the borders of the epiploic foramen is correct?

A- The second part of the duodenum forms the inferior border.

B- The quadrate process of the liver forms the superior border.

C- The hepatic vein forms the posterior border.

D- The free edge of the greater omentum forms the anterior border.

E- The common bile duct is contained within the anterior border.

Answer/ E

6- Which of these statements about the coeliac trunk is not correct?

A- It supplies the foregut and its derivatives.

B- It leaves the aorta at the level of L1.

C- It gives a left gastric branch that supplies the oesophagus.

D- It gives a splenic branch.

E- It gives rise to the gastroduodenal artery via its hepatic branch.

Answer/ B

7- Which statement best describes the blood supply of the stomach?

A- It is derived entirely from the superior mesenteric artery.

B- The gastroepiploic arteries supply the lesser curvature.

C- The right gastric artery is a direct branch of the coeliac axis.

D- The left gastroepiploic artery arises directly from the coeliac trunk.

E- The short gastric arteries arise from the splenic artery.

Answer/ E

8- Which statement best describes the venous drainage of the alimentary tract?

A- All blood drains into the portal system.

B- The portal vein is formed from the union of the inferior mesenteric and splenic veins.

C- The superior mesenteric vein crosses the uncinate process of the pancreas.

D- The inferior mesenteric vein passes behind the left renal vein.

E- The prepyloric vein is variable in position.

Answer/ C

9- Which statement best completes this sentence? The superior mesenteric artery:

A- Supplies the gut from the pylorus to the terminal ileum.

B- Arises from the aorta at the level of L1.

C- Runs in front of the body of the pancreas.

D- Crosses the second part of the duodenum.

E- Supplies the appendix via its right colic branch.

Answer/ B

10- Which statement best describes the inferior mesenteric artery?

A- It arises from the aorta at the level of the transpyloric plane.

B- It supplies the mucus membrane of the gut as far as the mid-rectum.

C- It gives off a left colic branch.

D- It crosses the pelvic brim at the point of bifurcation of the right common iliac vessels.

E- It anastomoses with the superior mesenteric artery via its sigmoid branch.

Answer/ C

11- Which statement best describes the lymphatics of the gastrointestinal tract?

A- They generally follow routes which are distinct from those taken by the venous drainage of the bowel.

B- Peyer's patches are found on the mesenteric surface of the large bowel.

C- Lymphoid follicles become less numerous in the distal part of the gut.

D- Preaortic nodes lie at the origins of major blood vessels.

E- Lymph from the alimentary tract eventually passes into the portal system of veins.

Answer/ D

12- Which statement best describes the stomach?

A- Lymph from the superior 2/3 of the stomach drains into the suprapancreatic nodes.

B- All lymph from the stomach drains through the coeliac nodes.

C- The gastric branches of the vagi are given off in the greater curve.

D- The lower oesophageal sphincter is supplied by the nerves of Latarjet.

E- The antral part of the stomach secretes an acid solution.

Answer/ B

13- Which of the following statements about the duodenum is incorrect?

A- The second part overlies the right kidney.

B-The transverse mesocolon attaches over the second part.

C- The ampulla of Vater lies in the third part.

D-The inferior vena cava and aorta lie directly behind the third part.

E-The gall bladder overlies the first part.

Answer/ C

14- Which statement regarding the jejunum and ileum is incorrect?

A-The ileum has thicker walls than the jejunum.

B-The proximal small intestine is of greater diameter than the distal.

C-The mesentery of the small intestine is thicker distally.

D-The jejunum lies mainly in the umbilical region.

E-The mesenteric vessels form more numerous arcades in the ileum.

Answer/ A

15- Which of these statements regarding Meckel's diverticulum is correct?

A-It is found in about 4% of the population.

B-Is always found on the antimesenteric border of the ileum.

C-Is usually about 2 cm in length.

D-Is usually located about 20 cm from the ileocaecal junction.

E-Is usually attached to the umbilicus.

Answer/ B

16- Which statement about the appendix is incorrect?

A- The taenia coli converge on the base of the appendix.

B- The mesoappendix contains the appendicular vessels in its free edge.

C- The ileocaecal fold connects the appendix to the ileum.

D- The appendix always lies behind the ileum.

E- The appendix opens into the posteromedial part of the caecum.

Answer/ D

17- Which of the following statements best describes the colon?

A- The majority is derived from the primitive hindgut.

B- It is usually invested with peritoneum on all sides.

C- The hepatic flexure is related directly to the liver and right kidney.

D- The ascending and descending colon are always retroperitoneal.

E- The appendices epiploicae are composed of lymphoid tissue.

Answer/ C

18- Which statement most correctly describes the large bowel?

A- The taenia coli are longer than the colon.

B- The descending colon is the longest part.

C- The sigmoid colon has a mesentery.

D- The parasympathetic supply is entirely derived from the vagus nerve.

E- The marginal artery lies within the bowel wall.

Answer/ C

19- Which statement about the liver is correct?

A-The gall bladder lies directly anterior to the fissure for the ligamentum venosum.

B-The ligamentum teres contains the falciform ligament.

C-The caudate lobe lies anterior to the quadrate lobe.

D-The liver is closely related to the abdominal oesophagus.

E-The functional lobes of the liver are demarcated by a line drawn between the attachment of the falciform ligament and the fissure for the ligamentum venosum.

Answer/ D

20- Which statement best completes this sentence? The porta hepatis contains:

A-The hepatic artery on the left side.

B-The common hepatic duct anteriorly.

C-The portal vein anteriorly.

D-Parasympathetic fibres from the vagus.

E-Sympathetic fibres from the hypogastric plexus.

Answer/ D

21- When considering porto-systemic anastomosis, which of the following statements is correct?

A-The portal vein is formed by the union of the superior and inferior mesenteric veins.

B-There is an anastomosis between the middle and inferior rectal veins.

C-There is an anastomosis between the azygos system and right gastric veins.

D-There is a direct anastomosis between the paraumbilical and common iliac veins.

E-There is an anastomosis between the colic and retroperitoneal veins.

Answer/ E

22- Which statement concerning the peritoneal reflections on the liver is not correct?

A-The bare area lies between the left and right triangular ligaments.

B-The coronary ligament is continuous with the falciform ligament.

C-The inferior vena cava forms a border of the bare area.

D-The lesser omentum is reflected around the structures of the porta hepatis.

E-The bare area is in contact with the right suprarenal gland.

Answer/ A

23- Which of the following statements about the biliary system is correct?

A-The pancreatic duct drains into the hepatic duct.

B-The common hepatic duct is formed by the union of the common bile and cystic ducts.

C-Callot's triangle is formed by the hepatic duct, cystic duct and the cystic artery.

D-The common bile duct runs behind the first part of the duodenum.

E-The common bile duct runs between the head of the pancreas and the third part of the duodenum.

Answer/ D

24- Which of these statements about the pancreas is not correct?

A-The neck lies in the subcostal plane.

B-It is supplied by the splenic artery.

C-The uncinate process drains via the accessory pancreatic duct.

D-It is related to the second part of the duodenum.

E-Develops from two buds which arise from the primitive foregut.

Answer/ A

25- Which statement about the rectum and its relations is incorrect?

A-There are two rectal folds on the left.

B-The anorectal junction is related to the puborectalis muscle.

C-The upper 1/3 is entirely invested in peritoneum.

D-The pararectal lymph nodes lie in the mesorectum.

E-Denonvillier's fascia lies below the rectovesical pouch.

Answer/ C

26- Which statement best describes the anus and its sphincters?

A-The anus contains longitudinal and circular muscle.

B-The external sphincter is composed of involuntary muscle.

C-The external sphincter is continuous with the muscle of the rectum.

D-The anorectal ring is formed by puborectalis.

E-The anal cushions are found in the left lateral, right posterior and right anterior positions.

Answer/ D

27- Which of the following statements about the oesophagus is correct?

A-Is crossed anteriorly by the left main bronchus.

B-Passes through the diaphragm with the left phrenic nerve.

C-Has a blood supply from the superior thyroid artery.

D-Has a venous drainage into the right gastric vein.

E-Has smooth muscle in the lower 2/3 of its wall.

Answer/ A

28- The following structure are not lie at the transpyloric plane:

A- The pylorus .

B- The fundus of the gallbladder .

C- The transverse mesocolon .

D- The hilum of the spleen .

E- The 3rd part of the duodenum.

Answer/ E

29- The rectum:

A- Is covered anteriorly by peritoneum along its whole length .

B- Has no taeniae coli .

C- Has appendices epiploicae .

D- Has a blood supply from the terminal branches of the superior mesenteric artery.

E- Has no transverse mucosal folds.

Answer/ B

30- The descending (second) part of the duodenum (All correct except one)

A- Is posterior to the transverse colon.

B- Is anterior to the right kidney.

C- Is posterior to the right lobe of the liver .

D- Has a blood supply from tboth the celiac artery and the superior mesenteric artery.

E- Has the bile duct opening into its anterolateral wall.

Answer/ E

31- The superior mesenteric artery (All correct except one)

A- Supplies the whole of the jejunum and ileum.

B- Indirectly supplies the vermiform appendix.

C- Is posterior to the (first) part of the duodenum.

D- Lies to the left of the superior mesenteric vein.

E- Is posterior to the body of the pancreas.

Answer/ C

32- The abdominal aorta (All correct except one)

A- Enters the abdominal cavity at the level of the twelfth thoracic vertebra.

B- Divides at the level of the fifth lumbar vertebra.

C- Lies to the left of the inferior venacava.

D- Gives off four branches which are not bilateral.

E- Lies to the right of the left sympathetic trunk.

Answer/ B

33- The first part (superior) part of the duodenum (All are correct except one)

A- Begins to the left of the midline.

B- Forms the lower boundary of the epiploic foramen (aditus to the lesser sac) .

C- Is anterior to the bile duct.

D- Is posterior to the gall bladder.

E- Has a villi.

Answer/ A

34- The portal vein

A- Is usually formed by the union of the splenic and superior mesenteric veins.

B- Runs upwards behind the epiploic foramen (aditus to the lesser sac)

C- Lies anterior to the (common) hepatic artery.

D- Is anterior to the superior (first) part of the duodenum

E- Has no tributaries other than the branches forming it.

Answer/ A

35- The vermiform appendix

A- Is retrocaecal in about 20% of subjects.

B- Is pelvic in about 10% of subjects.

C- Has a continuous layer of longitudinal muscle.

D- Has a nerve supply from the ninth thoracic spinal segment.

E- Is supplied by an artery which lies in front of the terminal part of the ileum.

Answer/ C

36- The root of the mesentery

A- Begins at the pyloric end of stomach .

B- Crossed the horizontal part of the duodenum.

C- Contains a branch of the celiac arterial trunk.

D- Crosses the left ureter .

E- Ends at the ileocecal junction.

Answer/ E

37- The anal canal (all are correct except one)

A- Is lined entirely by mucous columnar epithelium

B- Is not developed entirely from the hind gut.

C- Has a blood supply from the internal pudendal artery.

D- Has a sphincter consisting of smooth muscle.

E- Has lymph vessels which drain to the superficial inguinal lymph nodes.

Answer/ A

38- The stomach

A- Receives all its blood supply from the celiac trunk (artery) .

B- Has all its veins draining directly into the portal vein.

C- Has an oblique muscle coat outside the longitudinal muscle coat.

D- Has the greater omentum attached to its lesser curvature.

E- Has only parasympathetic nerves innervating its muscle.

Answer/ A

39- The inferior (third) part of the duodenum

A- Is anterior to the superior mesenteric vessels .

B- Is anterior to the bile duct .

C- Is posterior to the right ureter.

D- Lies in front of the inferior vena cava and abdominal aorta.

E- Has no circular folds (valvulae conniventes).

Answer/ D

40- The epiploic foramen (All are correct except one)

A- Has the right gastro-epiploic artery as a boundary.

B- Communicates between omental bursa (lesser sac) and main peritoneal cavity.

C- May transmit abnormally a loop of bowel .

D- Is at the level of the first lumbar vertebral body.

E- Has inferior vena cava as a boundary.

Answer/ A

41- Appenices epiploicae (All are correct except one)

A- Are filled with fat.

B- Play an active part in peristalsis.

C- Are restricted to parts of the alimentary canal.

D- Are absent in the rectum

E- Are invariably covered with peritoneum.

Answer/ B

42- The right flexure of the colon (all are correct except one)

A- Is directly related to the second part of the duodenum.

B- Is developed from the midgut.

C- Is separated by peritoneum from the right lobe of the liver.

D- Receives a parasympathetic nerve supply from sacral nerves.

E- Is directly related to the right kidney.

Answer/ D

43- Teniae coli

A- Are condensed bands of peritoneum .

B- Play an active part in peristalsis.

C- Are restricted to parts of the alimentary canal with mesenteries.

D- Are absent in the rectum.

E- Present the descending colon to the posterior abdominal wall.

Answer / B

44- Compared with a loop of ileum, a loop of jejunum (All are correct except one)

A- Contains fewer arterial arcades in its mesentery.

B- Has fewer aggregated lymphatic follicles in its interior.

C- Has more circular folds in its interior.

D- May show the remains of a persistent vitello-intestinal duct.

E- Contains less fat in its mesentery.

Answer/ D

45- The transverse colon (All are correct except one)

A- Derives its blood supply from the midgut artery.

B- Has a mesentery which forms part of the stomach bed.

C- Is a posterior relation of the descending part of the duodenum

D- Has a peritoneal covering which is continuous with the posterior two layers of the greater omentum.

E- Has appendices epoploicae.

Answer/ C

46- The stomach bed does NOT include the:

A-Splenic artery

B-Celiac trunk

C-Transverse mesocolon

D-Left adrenal gland

E-Neck of the pancreas

Answer/ B

47- The inferior vena cava

A-Leaves to abdominal cavity at the level of the tenth thoracic vertebra.

B-Is formed at the level of the fifth lumbar vertebra.

C-Receives directly the blood from the gonadal veins of both sides.

D-Is posterior to the right adrenal gland.

E-Is anterior to the right common iliac artery.

Answer/ B

48- The epiploic foramen

A-Is the opening of the lesser sac on the left side of the abdomen.

B-Lies anterior to the superior vena cava.

C-Lies inferior to the quadrate lobe of the liver.

D-Is superior to the third part of the duodenum.

E-Contains the hepatic artery lying on the left of the common bile duct in the anterior border.

Answer/ E

49- The stomach:

A- Is separated from the liver by the lesser sac.

B- Forms gastric impression on the right lobe of the liver.

C- Forms gastric impression above the hilum of the spleen.

D- Has gastrophrenic ligament attached to the lesser curvature.

E- Is related to the front of the left kidney below the body of the pancreas.

Answer/ C #

50- The celiac trunk:

A- Arises from the abdominal aorta at the level of the 2nd lumbar vertebra.

B- Is accompanied by the celiac vein.

C- Gives off the right gastric artery as a direct branch.

D- Supplies all parts of the duodenum.

E- Gives indirect supply to the gall bladder.

Answer/ E

51- Regarding the lesser omentum, one is INCORRECT:

A- Lies between the liver and the stomach.

B- Extends into the fissure for the ligamentum teres.

C- Contains the portal vein.

D- Forms part of the anterior wall of the lesser sac.

E- Has a free margin in front of the epiploic foramen.

Answer/ B

52- Regarding the superior mesenteric artery, one is INCORRECT:

A- Arises from the abdominal aorta at the level of the transpyloric plane.

B- Lies to the left of the superior mesenteric vein.

C- Lies in the root of the mesentery.

D- Supplies the jejunum and ileum.

E- Supplies the left colic flexure.

Answer/ E

53- When compared with the ileum, the upper part of the jejunum:

A- Has a thinner wall.

B- Has complicated arterial arcades.

C- Has numerous mucous folds called plicae circulares.

D- Has more aggregated lymphoid follicles.

E- Is less vascular.

Answer/ C

54- Regarding the first part of the duodenum, one is INCORRECT:

A- Is developed from the foregut.

B- Is anterior to the bile duct.

C- Has lesser omentum attached to it.

D- Forms the lower boundary of the epiploic foramen.

E- Lies in the subcostal plane.

Answer/ E

55- Regarding the first part of the duodenum, one is INCORRECT:

A- Is supplied by the celiac artery.

B- Is anterior to the portal vein.

C- Is posterior to the gastroduodenal artery.

D- Has greater omentum attached to it.

E- Lies in the transpyloric plane.

Answer/ C

56- The second part of the duodenum:

A- Is developed entirely from the midgut.

B- Has an opening for the accessory pancreatic duct.

C- Is supplied only by branches of the celiac artery.

D- Lies anterior to the left renal vessels.

E- Completely covered with peritoneum.

Answer/ B

57- Regarding the second part of the duodenum, one is INCORRECT:

A- Is posterior to the transverse colon.

B- Is related anteriorly to the right lobe of the liver.

C- Is anterior to the hilum of the right kidney.

D- Has the bile duct opening in its anterior wall.

E- Is supplied by both the celiac artery and the superior mesenteric artery.

Answer/ D

58- The third part of the duodenum:

A- Lies at the level of the 2nd lumbar vertebra.

B- Has arterial supply from the inferior mesenteric artery.

C- Is anterior to the bile duct.

D- Is anterior to the superior mesenteric vessels.

E- Is anterior to the inferior vena cava and aorta.

Answer/ E

59- The fourth part of the duodenum:

A- Is the terminal part of the foregut.

B- Is anterior to the left gonadal vessels.

C- Is crossed anteriorly by the inferior mesenteric artery.

D- Is completely covered with peritoneum.

E- Is supplied by the superior pancreatico-duodenal artery.

Answer/ B

60- Regarding the common bile duct, one is INCORRECT:

A- Opens in the second part of the duodenum.

B- Lies anterior to the portal vein.

C- Lies to the right of the hepatic artery.

D- Descends in front of the first part of the duodenum.

E- Descends in the free margin of the lesser omentum.

Answer/ D

**61- Regarding the pancreas, one is
INCORRECT:**

A- Is part of the stomach bed.

**B- Has a neck anterior to the origin of the
portal vein.**

**C- Has a tail that lies in the gastrosplenic
ligament.**

**D- Has an uncinate process that lies
behind the superior mesenteric vessels.**

**E- Supplied by branches of the celiac and
superior mesenteric arteries.**

Answer/ C

62- The pancreas:

A- Has a head that lies anterior to the portal vein.

B- Has a neck related to the terminal part of the superior mesenteric vein.

C- Has a body that lies posterior to the splenic vein.

D- Has a tail that forms an impression above the lateral end of the hilum of the spleen.

E- Has a main duct that opens in the 2nd part of the duodenum above the accessory duct.

Answer/ B

63- Regarding the gall bladder, one is INCORRECT:

A- Has capacity of 30 50 ml of bile.

B- Has fundus located opposite the tip of the right 9th costal cartilage.

C- Has body that is adherent to the inferior surface of the liver.

D- Has neck that is continuous with the bile duct.

E- Receives its arterial supply from the hepatic artery.

Answer/ D

**64- Regarding the cecum, one is
INCORRECT:**

A- Lies in the right iliac fossa.

B- Is mobile (surrounded by peritoneum).

**c. Has blood supply from the superior
mesenteric artery.**

**d. Has a retrocecal recess that usually
contains the vermiform appendix.**

e. Has no taenia coli.

Answer/ E

65- Regarding the vermiform appendix, one is INCORRECT:

A- The commonest site is retrocecal.

B- The base is located opposite the McBurneys point.

C- Has a nerve supply from the tenth thoracic spinal cord segment.

D- Has taenia coli.

E- The appendicular artery usually lies behind the terminal part of the ileum.

Answer/ D

66- Regarding the portal vein, one is INCORRECT:

A- Formed by the union of the splenic and superior mesenteric veins.

B- Runs upward behind the epiploic foramen.

C- Lies posterior to the hepatic artery.

D- Lies posterior to the bile duct.

E- Lies posterior to the first part of the duodenum.

Answer/ B

67- Regarding the stomach, all are correct EXCEPT:

A- The lesser curvature is supplied by the right and left gastroepiploic arteries

B- The lesser sac lies behind the stomach.

C- The lymph is drained to the celiac lymph nodes.

D- The duodenum anchor the pyloric end to the posterior abdominal wall.

E- The body of the pancreas is a part of the stomach bed.

Answer/ A

68- Regarding the liver, all are correct EXCEPT:

A- The lesser omentum connects the stomach to the porta hepatis.

B- The ligamentum venosum is attached to the left branch of the portal vein.

C- It is mainly supported by the attachment of the hepatic veins to the IVC.

D- The right hepatic duct drains the quadrate and caudate lobes.

E- The ligamentum teres is the remains of the left umbilical vein.

Answer/ D

69- Regarding the pancreas, all are correct EXCEPT:

A- It receives part of its arterial supply from the splenic artery.

B- The common bile duct passes behind the head of the pancreas.

C- The main pancreatic duct opens into the 3rd part of the duodenum.

D- The transverse mesocolon is attached to the anterior border of the body.

E- The tail passes in the lienorenal ligament.

Answer/ C

70- Regarding the ileum, all are correct EXCEPT:

A- Has more arterial arcades than the jejunum.

B- Has large amount of fat in its mesentery than that of the jejunum.

C- Its lower part has Peyer's patches in the mucous membrane.

D- The plicae circulares are more prominent than in the jejunum.

E- Has parasympathetic innervation from the vagus.

Answer/ D

71- Regarding the abdominal aorta, all are correct EXCEPT:

A- It enters the abdomen opposite the 12th thoracic vertebra.

B- It bifurcates into 2 common iliac arteries opposite the 5th lumbar vertebra.

C- It lies on the left side of the inferior vena cava.

D- The branches that supply the gut arise from its anterior surface.

E- The thoracic duct passes through the aortic opening of the diaphragm.

Answer/ B

72- The portal vein:

A- Is formed behind the neck of the pancreas .

B- Is formed by the union of splenic and inferior mesenteric veins .

C- Ascends in the greater omentum .

D- Lies anterior to the bile duct .

E- Divides into two hepatic veins .

Answer/ A

73- The superior mesenteric artery:

A- Is a branch of the celiac artery .

B- Continues as the superior rectal artery.

C- Supplies the stomach and the duodenum .

D- Passes in the root of the mesentery .

E- Its largest branch is the splenic artery .

Answer/ D

74- One of the following veins doesn't end in the inferior vena cava:

A- Left renal vein

B- Right renal vein

C- Left suprarenal vein

D- Right suprarenal vein

E- Left hepatic vein

Answer/ C

75- The duodenum, select the true answer/s:

A- The first inch is mobile

B- The second part extends from the level of L1 to L3

C- The third part is crossed anteriorly by the superior mesenteric artery

D- The forth part is supplied by the inferior mesenteric artery

E- The biliary orifice marks the anastomosis between celiac and superior mesenteric arteries

Answer/ A,B,C

76- The bare areas of the liver include all of the following EXCEPT:

A- Duodenal impression

B- Fossa for the gall bladder.

C- Groove for the inferior vena cava

D- Porta hepatis

E- The area bounded by the anterior and posterior coronary ligaments.

Answer/ A

77- The gall bladder receives sensory nerve supply from:

A- Left phrenic nerve

B- Right phrenic nerve

C- Anterior gastric nerve

D- Posterior gastric nerve

E- Superior mesenteric plexus

Answer/ B

78- The liver, all are correct EXCEPT:

A- It lies mainly in the right hypochondrium.

B- The lesser omentum is attached to the fissure for ligamentum venosum

C- Is divided functionally into 8 segments.

D- The left hepatic duct drains the left lobe.

E- The right hepatic duct drains the quadrate lobe .

Answer/ E

79- The commonest site of the vermiform appendix is:

A- Retrocecal

B- Paracecal

C- Pelvic

D- Subhepatic

E- Left sided in the left iliac fossa

Answer/ A

80- The ascending colon:

A- Is mobile.

B- Receives arterial supply from the colic branches of the inferior mesenteric artery .

C- Is shorter than the descending colon .

D- Has a lymphatic drainage to the inferior mesenteric lymph nodes .

E- Has parasympathetic innervation from the pelvic splanchnic nerves (S2, 3, 4).

Answer/ C

81- The " porta hepatis" of the liver transmits all of the following Except the:

A- hepatic arteries

B- hepatic ducts

C- autonomic nerves from celiac plexus

D- portal vein

E- hepatic veins

Answer/ E

82- Most of small intestine receives its blood supply from branches of single artery, the artery that supply most of the small bowel :-

A- middle colic

B- celiac

C- gastroduodenal

D- inferior mesenteric

E- superior mesenteric

Answer/ E

83- The posterior boundary of epiploic foramen (of Monro) is the:

A- caudate lobe of liver.

B- first part of duodenum.

C- portal vein.

D- common bile duct.

E- inferior Vena Cava.

Answer/ E

84- The common bile duct, hepatic artery and portal vein are found grouped together in the:

A- gastrosplenic ligament.

B- gastrophrenic ligament.

C- hepatoduodenal ligament .

D- gastrocolic ligament.

E- falciform ligament.

Answer/ C

85- The epiploic foramen is bounded anteriorly by:-

A- hepatoduodenal ligament.

B- peritoneum over the inferior Vena Cava.

C- peritoneum on the caudate lobe of liver.

D- free border of greater omentum.

E- peritoneum at the beginning of the duodenum.

Answer/ A

86- The common bile duct and major pancreatic duct join to form the :

A- hepatic duct

B- common hepatic duct

C- cystic duct

D- cisterna chyli

E- ampulla of vater

Answer/ E

87- Each of the following forms a boundary of the lesser peritoneal sac EXCEPT the :

A- gastrosplenic ligament.

B- left triangular ligament of liver.

C- greater omentum.

D- lesser omentum.

E- splenorenal ligament.

Answer/ C

88- Which of the following is located at the opening between the small and large intestines ?

A- ligament of Treitz.

B- cardiac sphincter.

C- ileocecal valve.

D- pyloric sphincter.

E- tricuspid valve.

Answer/ C

89- When removing the spleen , a surgeon must be careful not to cut one of its branches , the :

A- superior mesenteric

B- left gastric

C- left gastroepiploic

D- superior pancreaticoduodenal

E- left renal

Answer / C

90- Lymphatic vessels from the anal canal , below the pectinate line, drain into which lymph nodes:-

A- para- aortic

B- superior mesenteric

C- internal iliac

D- superficial inguinale

E- inferior mesenteric

Answer/ D

91- All the following statements concerning the esophagus are correct except:

A- Receives an arterial blood supply from both descending thoracic aorta and the left gastric artery.

B- Its constricted by the left main bronchus .

C- Its crosses from right to left posterior to descending thoracic aorta.

D- It passes through esophageal hiatus with left & right vagus nerves to reach the stomach.

E- It join the stomach about (41cm) from the incisor teeth.

Answer/ C