

Islamic Republic of Iran
Ministry of Health and Medical Education
Deputy of Education
Secretariat of the General Medical Education Council
The country's 10th planning zone
Medical Education Evaluation Center

Comprehensive Pre-internship Exam

September 2026

Number of Questions: 200
Number of Pages: 38
Exam Time: 200 Minutes

Candidate Details
Name:
Family Name:
Candidate ID Number:

Important notes:

- Choose only the best option for each question.
- This exam does not have negative mark.
- Before answering the questions, check the exam booklet carefully to make sure of the correct number of the pages and questions. In case of any problem, inform the exam proctors; otherwise, no objection will be accepted after the exam.

Internal Medicine

- 1- A 65-year-old female has been suffering from persistent vomiting since two days ago. She appears to be lethargic, weak and has myalgia. She is noted to have dry mucus membranes. She is diagnosed as having gastroenteritis. Measurement of arterial blood gas shows: pH: 7.5, PaO₂: 85 mm Hg, PaCO₂: 42 mm Hg, and HCO₃: 34 mmol/L
Which of the following is correct?
- a) Respiratory alkalosis, uncompensated
 - b) Metabolic alkalosis and respiratory alkalosis
 - c) Metabolic alkalosis, compensated
 - d) Respiratory acidosis, compensated
- 2- A 32-year-old man admitted to hospital with Cr: 2 has been recently taking Diclofenac due to toothache. Urinalysis demonstrates WBC: 25-35, and eosinophiluria. Urine culture is negative. He has eosinophilia. Longitudinal diameter of right and left kidney in sonography are 117 mm and 115 mm respectively. There is a 3-mm stone in upper pole of right kidney. Which of the following is the etiology of rise of creatinine in this patient?
- a) Urinary tract infection
 - b) Renal stone
 - c) Analgesic use
 - d) Diabetic nephropathy
- 3- In the emergency management of hyperkalemia for a patient presenting with a potassium level of 6.5 mEq/dL and ECG changes. What is the first step?
- a) Regular insulin plus glucose
 - b) Intravenous calcium gluconate
 - c) Potassium binding resin
 - d) Salbutamol spary
- 4- A 70-year-old man, a known case of hypertension and diabetes mellitus, presents with a history of chest pain, nausea, vomiting and cold sweats and undergoes a coronary angiography with the possible diagnosis of acute myocardial infarction. 48 hours after the procedure, his serum creatinine level is 2.8 mg/dl (at the time of admission, before the angiography, it was 0.8 mg/dl). Which is the most likely diagnosis?
- a) Bilateral renal arteries stenosis
 - b) Ischemic acute tubular necrosis
 - c) Cholesterol thromboembolism
 - d) Contrast induced nephropathy
- 5- A 45-year-old man admitted with lower extremity edema. He has 7-gram protein in 24-hour urine. He does not have hematuria. Anti PLA₂R Ab is positive. Which of the following is the best diagnosis?
- a) Membrano Proliferative GN (MPGN)
 - b) Membranous Nephropathy (MGN)
 - c) Minimal Change Disease (MCD)
 - d) Focal Segmental Glomerulosclerosis (FSGS)

- 6- A 40-year-old woman with lithium therapy presents with polyuria and Na+ 155 mEq/L. Urine volume remains high after desmopressin administration. What is the most likely diagnosis?

a) Primary polydipsiab) Central diabetes insipidusc) Syndrome of inappropriate ADH secretion (SIADH)d) Nephrogenic diabetes insipidus
- 7- A 48-year-old woman presents with sudden onset of dyspnea, pleuritic chest pain, and mild hemoptysis. She has recently had knee surgery. What is the next best diagnostic test?

a) Chest X-rayb) Sputum cytologyc) Pulmonary CT Angiographyd) Bronchoscopy
- 8- A 23-year-old man presents with hemoptysis, hematuria, and anemia. CXR shows bilateral diffuse infiltrates. What is the most likely diagnosis?

a) Bronchiectasisb) Goodpasture syndromec) Lung cancerd) Tuberculosis
- 9- A 64-year-old male smoker is referred for formal pulmonary function testing as he reports several months of dyspnea and sounds wheezy on examination. According to spirometry findings, what do the findings suggest?

	Result	Predicted	% Predicted
FEV ₁	2.65 L	3.58 L	74%
FVC	4.01 L	4.79 L	84%
FEV ₁ :FVC Ratio	0.66	0.75	88%
Total Lung Capacity	7.42 L	5.82 L	127%
DLCO	19.18 mL/min/mmHg	25.92 mL/min/mmHg	74%

- a) Emphysema
b) Idiopathic pulmonary fibrosis
c) Bronchiectasis
d) Pulmonary embolism
- 10- A 58-year-old retired shipyard worker presents with progressive dyspnea. Chest imaging shows interstitial fibrosis predominantly in lower lobes with pleural plaques. What is the most likely diagnosis?

a) Sarcoidosisb) Hypersensitivity pneumonitisc) Asbestosisd) Pulmonary edema
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- 11- A 25-year-old tall, thin male presents with sudden unilateral pleuritic chest pain and dyspnea. Breath sounds are decreased on one side. What is the most likely diagnosis?
- Pneumonia
 - Pulmonary embolism
 - Spontaneous pneumothorax
 - Pericarditis
- 12- A 30-year-old woman with known asthma uses low-dose inhaled corticosteroid (ICS) daily. She reports daytime symptoms 4 times per week and nighttime awakening once a week, and using SABA several times a week. What is the most appropriate next step in management?
- Continue the same treatment
 - Add a long-acting beta-agonist (LABA) to ICS
 - Switch to SABA only
 - Start long-term oral corticosteroids
- 13- A 48-year-old woman undergoing an abdominal CT scan for evaluation of kidney stones is found to have a 23-mm left adrenal mass. She has no specific clinical symptoms and denies any history of hypertension or diabetes mellitus. On examination, her BMI is 32 kg/m², and her blood pressure is 125/84 mmHg. Which of the following laboratory tests is essential in the initial evaluation of this adrenal mass?
- Overnight dexamethasone suppression test
 - Plasma aldosterone level
 - Adrenal androgens
 - Serum potassium
- 14- A 60-year-old man with a history of coronary artery bypass graft surgery (CABG) and heart failure with a left ventricular ejection fraction (LVEF) of 40% has recently been diagnosed with type 2 diabetes mellitus. One of the following antidiabetic medications has been initiated for him. A few weeks later, the patient presents with progressive leg swelling and worsening shortness of breath. Which of the following antidiabetic medications is most likely to have worsened his heart failure symptoms?
- Liraglutide
 - Linagliptin
 - Empagliflozin
 - Pioglitazone
- 15- A 58-year-old man with a 10-year history of type 2 diabetes mellitus presents for follow-up of glycemic control. His current medications include metformin 500 mg twice daily, aspirin, and atorvastatin. On examination, blood pressure is 130/80 mmHg and BMI is 30 kg/m². Laboratory findings are as follows:
- Fasting blood sugar (FBS) = 125 mg/dL
- HbA1c = 7.8%
- eGFR = 50 mL/min/1.73 m² (stable over the past 3 months)
- Urine albumin-to-creatinine ratio (UACR) = 45 mg/g
- Fundoscopic examination: no evidence of diabetic retinopathy
- What is the most appropriate next step in glycemic management for this patient?
- Reduce metformin dose and add glimepiride
 - Discontinue metformin and initiate basal-bolus insulin therapy
 - Continue current metformin dose and add pioglitazone
 - Continue current metformin dose and add an empagliflozin

- 16- A 32-year-old man presents to the emergency department with shortness of breath, nausea, vomiting, and abdominal pain. On physical examination, he appears dehydrated. Initial evaluation reveals the following:**
BP: 90/60 mmHg
PR: 120/min
RR: 30/min
Blood glucose: 480 mg/dL
VBG: pH= 7.12, HCO₃= 12 mEq/L
Na= 143 mEq/L, K= 4.1 mEq/L
BUN= 30 mg/dL, Cr= 1.2 mg/dL
Urine ketones= 3+
Which of the following is the most appropriate initial management?
- a) Start intravenous normal saline, intravenous insulin, and bicarbonate.
 - b) Start intravenous half-normal saline, intravenous insulin, and bicarbonate.
 - c) Start intravenous normal saline, intravenous insulin, and potassium.
 - d) Start intravenous normal saline, intravenous insulin, potassium and bicarbonate.
- 17- A 24-year-old man with a history of recurrent episodes of weakness, palpitations, sweating, and two episodes of loss of consciousness, each of which improved after intravenous glucose administration, has been admitted for evaluation of the cause of hypoglycemia. During one of the episodes, his blood glucose was documented to be 55 mg/dL. Currently, the patient is asymptomatic, and his blood glucose level is 88 mg/dL. What is the most appropriate next diagnostic step for evaluating the cause of hypoglycemia?**
- a) Simultaneous measurement of insulin and C-peptide with the current blood glucose level
 - b) Performing a 72-hour fasting test
 - c) Performing endoscopic ultrasound of the pancreas
 - d) Performing contrast-enhanced CT scan of the abdomen and pelvis
- 18- A 30-year-old woman is evaluated for palpitations and approximately 8 kg weight loss. On physical examination, a 3-cm mass is palpated in the right thyroid lobe, which is confirmed on ultrasound. Laboratory results show: TSH = 0.05 (0.5-5), T4 = 14 (4-13)**
What is the most appropriate next step?
- a) Radioactive iodine uptake
 - b) Thyroid radionuclide scan
 - c) Treatment with methimazole
 - d) Fine-needle aspiration of the thyroid nodule
- 19- A 30-year-old man presents with generalized bruising. His vital signs are stable. Laboratory findings are as follows:**
WBC: 1200, Hb: 8 gr/dL, Plt: 40,000, PT: Increased
PTT: Increased, Fibrinogen: 80, BUN: NL, Cr: NL
Bone marrow aspiration demonstrates 70% promyelocyte. Which chromosomal translocation is most likely?
- a) t (9:22)
 - b) t (15:17)
 - c) t (14:18)
 - d) t (11:14)

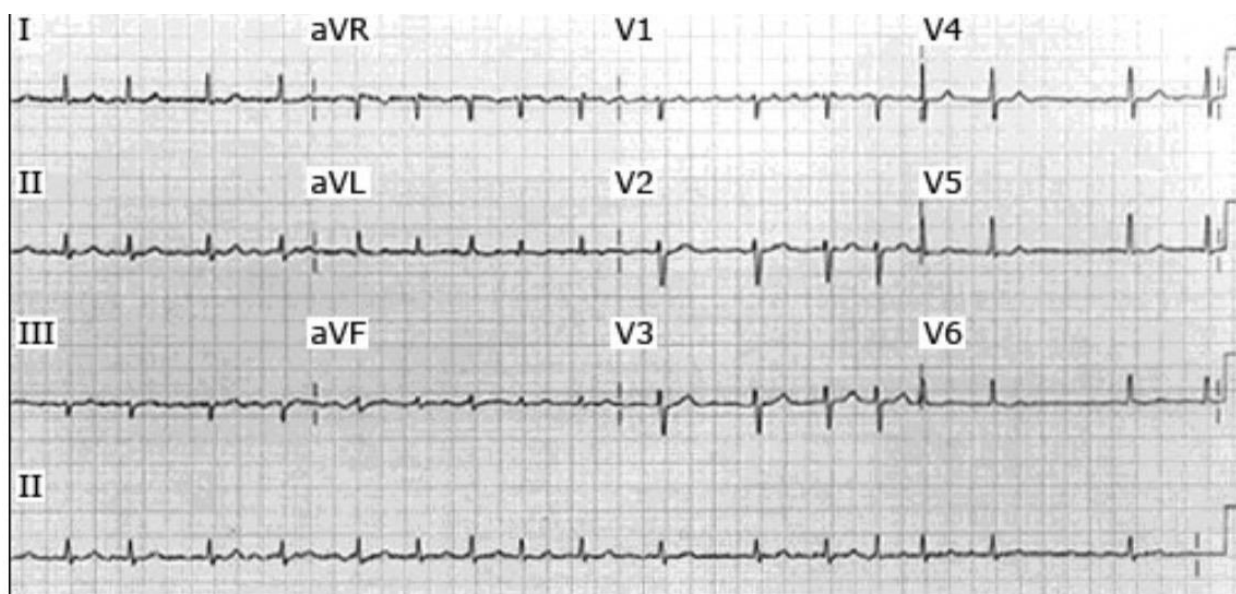
- 20- A 60-year-old man with history of heart failure develops dyspnea 30 minutes after receiving packed RBC. Examination reveals bilateral pulmonary crackles, blood pressure: 170/110 mmhg. In lab tests, brain natriuretic peptide is elevated. What is the most likely diagnosis?
- TRALI (transfusion related acute lung injury)
 - TACO (transfusion associated cardiac overload)
 - Hemolytic reaction
 - Anaphylaxis
- 21- A 25-year-old man that is a known case of sickle cell trait, is asking about exercising in summer. What is your recommendation?
- WBC: 6000/mm³, Neut: 80%, lymph: 15%, mix: 5%, Hb: 13 gr/dl, MCV: 90 fl
Plt: 300,000/mm³, BUN: Normal, Cr: Normal, AST: Normal, ALT: Normal
- Hydroxyurea before exercise
 - L-Glutamine before exercise
 - Oral iron 2 days before exercise
 - Adequate Hydration before exercise
- 22- A 30-year-old lady, a known case of Rheumatoid Arthritis, is under treatment due to disease activeness. According to LAB data, which interleukin is the direct cause of her Anemia?
- WBC: 8000/mm³, Neut: 70%, lymph: 30%, Hb: 10 gr/dl, MCV: 90 fl
Plt: 400,000/mm³, Ferritin: 110 µg/dl, TIBC: 250 µg /dl, Serum Iron: 40 µg /dl
- IL 8
 - IL5
 - IL 1
 - IL12
- 23- A 65- year-old man presents with fatigue, weakness and parestesia of the lower extremities. Initial laboratory findings reveal:
- WBC: 4000/mm³, Neut: 60%, lymph: 30%, mix: 10%, Hb: 9gr/dl
MCV: 120 fl, Plt: 200,000/mm³, Ferritin: 100 µg/dl
Serum B12 and folat testing is not available. Peripheral blood smear shows hyper segmented neutrophil. Folic acid 5 mg daily is started and 6 weeks later, hemoglobin level is 12, but patient claims about worsening parestesia and new gait imbalance.
What is the most appropriate next treatment?
- Increase folic acid dose
 - Starting folinic acid
 - Starting vitamin B12
 - Glucocorticoid
- 24- A 20-year-old lady presents with weakness. According to lab data, what diagnosis is most likely?
- Hg: 10g/dl, Ferritin: 10 µg/l, Iron: 25 µg/dl, PBS: microcytosis
- Anemia of chronic disease
 - Negative iron balance
 - Iron deficiency erythropoiesis
 - Iron deficiency anemia

- 25- Regarding the specificity of the autoantibodies Anti-CCP and RF in the diagnosis of Rheumatoid Arthritis (RA), which of the following is correct?**
- a) Anti-CCP and RF autoantibodies both have the same specificity for the diagnosis of RA, and their ultimate effect on the prognosis of the disease is identical.
 - b) Anti-CCP autoantibody has a significantly higher specificity compared to RF, can even be positive years before the diagnosis of the disease, and is associated with a worse prognosis.
 - c) RF autoantibody alone has a specificity above 95%, and its positivity is associated with a worse prognosis.
 - d) Anti-CCP autoantibody has a higher specificity compared to RF and becomes positive in the early stages, but has no effect on the final prognosis.
- 26- A 28-year-old woman presents with symptoms of malar rash and photosensitivity. Workup reveals proteinuria of 1g per 24 hours. Based on her medical history, clinical manifestations, which of the following autoantibodies are the best screening and specific test for diagnosis?**
- a) Screening test: Anti dsDNA, Specific tests: FANA, Anti Sm
 - b) Screening test: Anti dsDNA, Specific tests: Anti SS-A, Anti Sm
 - c) Screening test: FANA, Specific tests: Anti dsDNA, Anti Sm
 - d) Screening test: FANA, Specific tests: Anti SS-B, Anti Sm
- 27- A 48-year-old woman with a 4-year history of diffuse Systemic Sclerosis (SSc) presents with complaints of heartburn and occasional dysphagia to solid foods. She also complains of abdominal bloating and intermittent diarrhea. Given the above, what is the mechanism behind this patient's diarrhea?**
- a) Inflammatory bowel disease (IBD)
 - b) Colonic involvement
 - c) Small Intestinal Bacterial Overgrowth (SIBO)
 - d) Malabsorption and chronic pancreatitis
- 28- A 56-year-old man with a history of chronic sinusitis and otitis media presents with pain and numbness in his right hand. On examination, the right radial pulse is weaker and systolic blood pressure in the right arm is 20mmHg lower than the left arm. Lab results show ESR: 85 and CRP: 65. Further workup with CT angiography of the aorta and its branches reveals evidence of aneurysmal narrowing/stenosis. Based on the history, what is the most likely diagnosis for this patient?**
- a) Polyarteritis Nodosa (PAN)
 - b) Takayasu Arteritis
 - c) Temporal Arteritis (Giant Cell Arteritis)
 - d) Granulomatosis with Polyangiitis (GPA)
- 29- A 65-year-old man with a history of controlled chronic gout presents with swelling and deformity in the distal interphalangeal (DIP) joints of the hands, along with swelling and effusion of the right knee. Evidence of tophi is visible on the extensor surfaces of the elbows. Hand X-ray shows marginal erosions with overhanging edges. Lab results report a uric acid level of 5.8 mg/dL (within normal range). What is the reason for the normal serum uric acid level?**
- a) Use of uric acid-lowering medications prior to arthrocentesis
 - b) Concurrent deposition of CPPD crystals
 - c) Because of a history of controlled chronic gout
 - d) Deposition of uric acid during a gout flare in the sites of tophi

- 30- A 28-year-old man presents with chest pain for the past two days. The pain is worsened with deep inspiration and lying supine and is relieved by sitting up and leaning forward. One week earlier, he had symptoms of an upper respiratory tract viral infection. On physical examination, a friction rub is heard. The ECG demonstrates diffuse ST-segment elevation and PR-segment depression.

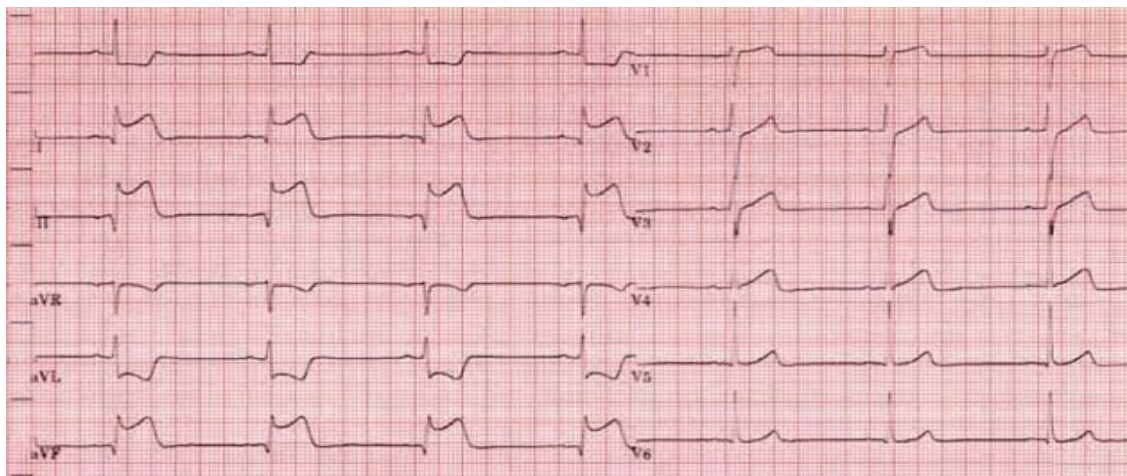
What is the most appropriate next step?

- a) Initiate Heparin and a Clopidogrel
- b) Treat with an NSAID plus Colchicine
- c) Perform pulmonary CT angiography
- d) Perform primary percutaneous coronary intervention (PCI)



- 31- A 72-year-old man with a history of hypertension presents with palpitation and fatigue. His blood pressure is 130/80 mmHg, and his pulse is irregular at 110 beats/min. Based on the patient's electrocardiogram (ECG), what is the most appropriate step in early management?
- a) Initiate a beta blocker
 - b) Initiate Amiodaron
 - c) Catheter ablation
 - d) Cardioversion with DC shock
- 32- A 22-year-old volleyball player comes to your clinic after a syncopal episode during a game. She has no other medical problems. Her brother died for unknown reasons at the age of 20. On examination, there is a $\frac{2}{6}$ systolic ejection murmur at the left sternal border that becomes louder during a Valsalva maneuver. Which of the following is the most appropriate next step in management?
- a) Electrophysiology study
 - b) Coronary angiography
 - c) Tilt table test
 - d) Echocardiography

- 33- A 68-year-old man presents with severe retrosternal, pressure-like chest pain that began 1 hour ago. His blood pressure is 80/50 mmHg. Lung auscultation is clear, and the jugular veins are distended. His electrocardiogram is shown below. What is the most appropriate next step in management?



- a) Administer intravenous Furosemide and Nitroglycerin
 - b) Initiate Dobutamine infusion
 - c) Obtain right-sided precordial ECG leads (V3R–V4R) and administer intravenous fluid
 - d) Initiate beta-blocker therapy and administer morphine
- 34- In acute ST elevation myocardial infarction, which of the following is the most common underlying pathology in coronary artery?
- a) Plaque rupture with thrombotic occlusion of a coronary artery
 - b) Coronary artery vasospasm
 - c) Progressive occlusion of a coronary artery by plaque
 - d) Superficial erosion of plaque with non-occlusive thrombosis
- 35- A 31-year-old female ICU nurse presents with an 8-month history of watery diarrhea (up to 2 L/day) that persists despite 24-hour fasting. She has a history of depression and syncope. Vital signs: BP 92/58 mmHg, HR 105/min. Labs: K: 2.7 mEq/L, normal CBC. Stool collection: volume: 1800 mL/day, Na: 15 mmol/L, K: 10 mmol/L, directly measured osmolality 95 mosmol/kg. Colonoscopy and mucosal biopsies are normal, with no mucosal pigmentation. What is the most likely etiology of her diarrhea?
- a) Covert dilution of the stool specimen with plain water
 - b) Surreptitious ingestion of Senna
 - c) Hypersecretion of vasoactive intestinal peptide
 - d) Surreptitious ingestion of a magnesium-containing osmotic laxative
- 36- A 68-year-old man with a history of MI on low-dose aspirin is hospitalized for hematemesis and melena. Upper endoscopy reveals a clean-based duodenal ulcer. His hemoglobin is stable at 8.2 g/dL, and he has no further bleeding or hemodynamic instability. What is the correct option regarding his management?
- a) Permanently discontinue Aspirin to prevent peptic ulcer rebleeding
 - b) Continue IV Pantoprazole for 3 days
 - c) Transfusion of 2 units of packed RBC to raise Hb levels above 10
 - d) Discharge and outpatient follow-up

- 37- A 34-year-old man with dyspepsia completed a 14-day Bismuth quadruple therapy course to eradicate *Helicobacter pylori* 6 weeks ago. He discontinued his Pantoprazole therapy 4 weeks ago and remained asymptomatic with no alarming features. Which of the following is the most appropriate test to confirm eradication?
- Urea breath test
 - Serologic antibody testing
 - H. pylori* culture
 - Repeat upper endoscopy with mucosal biopsy
- 38- A 28-year-old female presents with recurrent abdominal pain at least 1-2 times per week for the past 6 months. The pain improves with defecation. She denies weight loss, gastrointestinal bleeding, or fever. Physical examination is unremarkable. History of smoking, alcohol drinking, and drug usage is negative. Which of the following is required to fulfill the Rome diagnostic criteria?
- Pain associated with change in stool form.
 - Incomplete evacuation
 - History of recent GI infection
 - Intermittent diarrhea and constipation
- 39- A 58-year-old man presents with jaundice. Laboratory findings show:
HAV IgG: positive; HBsAg: positive, HBcIgM: positive, HBcIgG: negative, HBeAg: positive
Which of the following interpretations is correct?
- Acute hepatitis A and chronic hepatitis B
 - Acute hepatitis B
 - Chronic hepatitis B with precore mutation
 - Recovered hepatitis B
- 40- A 25-year-old female with no medical history presents with fever, jaundice and sore throat since 3 days ago. On physical examination, generalized lymphadenopathy was detected. According to following tests, what is the most appropriate diagnostic option?
- ALT: 360 (NL<20)
AST: 300 (NL<20)
ALKP: 1350 (NL<300)
Bill (Total): 4.2 (NL<1.5)
- HAV Ab (IgM), HBs Ag, HBcAb(IgM), HCV Ab
 - EBV IgM
 - Abdominal Sonography and AMA lab test
 - Liver Biopsy

Surgery

- 41- A 70-year-old male smoker presents with dysphagia and weight loss. Barium swallow shows a bird's beak appearance and esophageal dilation. What next step do you recommend?
- Chest CT scan
 - PET CT scan
 - Upper endoscopy
 - Referral for surgery

- 42- A 60-year-old woman presents with abdominal pain in the LLQ for the past two days that is now very severe. The patient has a mild fever and abdominal tenderness in the LLQ. The initial diagnosis is confirmed by CT scan. What is the most appropriate treatment recommendation?
- a) Treatment with oral antibiotics and discharge
 - b) Hospitalization and intravenous antibiotics and keeping the patient NPO
 - c) Transfer to the operating room for emergency laparotomy
 - d) Gastroenterology consultation for colonoscopic decompression
- 43- A 36-year-old man is evaluated for chronic diarrhea, severe weight loss, and hypokalemia requiring multiple hospitalizations. Abdominal CT scan reveals pancreatic lesions and multiple liver metastases. Which of the following medications is recommended for controlling diarrhea?
- a) Loperamide
 - b) Diphenoxylate
 - c) Octreotide
 - d) Pantoprazole
- 44- A 26-year-old woman comes to you with a palpable lump in her right breast. Family history is negative. On examination, the lump is well-circumscribed and mobile without skin adhesion. Breast ultrasound confirms a 3-cm fibroadenoma. What is the most appropriate recommendation?
- a) Follow up the patient in 6 months
 - b) Perform a core needle biopsy
 - c) Excisional biopsy
 - d) Incisional biopsy
- 45- A 70-year-old woman is admitted to the ICU with suspected sepsis following emergency surgery. On evaluation, she is confused, her systolic blood pressure is 92 mm Hg, and her respiratory rate is 26 /min. The team uses the rapid SOFA score for early identification of sepsis. Which of the following best explains the clinical purpose of using the rapid SOFA score in this patient?
- a) To determine the duration of antibiotic therapy
 - b) To identify patients who require immediate sepsis evaluation and management
 - c) To confirm the microbiologic source of infection
 - d) To guide selection of vasopressor therapy
- 46- A 25-year-old man with penetrating precordial trauma is diagnosed with cardiac tamponade. He is hypotensive but still has a palpable pulse. Surgical capability is immediately available. What is the most appropriate definitive management?
- a) Pericardiocentesis at the bedside
 - b) Rapid infusion of crystalloid alone
 - c) Immediate surgical decompression
 - d) Observation with serial ultrasound

- 47- A 45-year-old woman with a history of valvular heart disease presents with sudden onset pain in the right lower extremity for the past 4 hours. On examination, the distal right lower limb is cold. The right femoral pulse is palpable, but distal pulses are absent. The contralateral limb is warm, and distal pulses are palpable. All the following statements are correct **EXCEPT**:
- Intravenous Heparin is administered to prevent propagation of the thrombus.
 - Hydration is essential to reduce the complications of reperfusion syndrome.
 - If restoration of blood flow is delayed for more than 6 hours, fasciotomy is performed to prevent compartment syndrome.
 - Angiography (or CT angiography) is necessary to determine the site of vascular occlusion.
- 48- A 39-year-old woman presents 7 weeks after Roux-en-Y gastric bypass with progressive intolerance to solid foods. She reports frequent postprandial vomiting, but she is still able to tolerate liquids. She denies melena or epigastric burning pain. Her weight loss has accelerated because she is unable to tolerate solid and semi-solid food. What is the most appropriate next step in management?
- Initiation of high-dose proton pump inhibitor therapy
 - Upper endoscopy with possible balloon dilation
 - CT scan of the abdomen with contrast
 - Revision of the gastrojejunostomy
- 49- A 55-year-old patient with Type 1 diabetes is scheduled for an elective surgery at 8:00 AM tomorrow. His usual insulin regimen includes 30 units of NPH insulin (intermediate-acting) in the evening and 20 units in the morning. Considering that the patient will be NPO (nothing by mouth) from midnight, what is the correct instruction for his insulin doses?
- Administer 30 units of NPH the evening before surgery and completely omit the morning dose
 - Administer 20 units of NPH the evening before surgery and 10 units of NPH on the morning of surgery
 - Completely omit both evening and morning doses due to NPO status to prevent hypoglycemia
 - Administer 15 units of NPH the evening before surgery and 5 units of NPH on the morning of surgery
- 50- Which of the following correctly explains the mechanism of “artifactual hypocalcemia” in a surgical patient?
- Decreased serum albumin level leading to a reduction in total calcium, while ionized calcium remains normal
 - Binding of calcium ions to citrate present in transfused blood
 - Excess secretion of parathyroid hormone (PTH) causing calcium to shift into cells
 - Reduced renal phosphate excretion resulting in calcium deposition in soft tissues
- 51- A 45-year-old patient with a history of alcohol abuse and chronic intestinal obstruction, who has had inadequate nutrition for 2 weeks and developed severe muscle wasting, is a candidate for parenteral nutrition (PN). To prevent the fatal complications of refeeding syndrome, which initial measure is mandatory?
- Rapid initiation of dextrose at a dose of 400 g/day to meet the needs of the brain and CNS
 - Limiting the initial amount of dextrose to 100–150 g/day and carefully monitoring serum potassium, phosphorus, and magnesium levels
 - Administration of a high dose of sodium (more than 250 mEq) on the first day to correct volume deficit
 - Starting nutrition with the maximum calculated calories (30 kcal/kg) to quickly move the patient out of the catabolic phase

- 52- A 55-year-old patient, two hours after receiving the second unit of fresh frozen plasma (FFP), develops severe dyspnea, tachycardia, and hypoxia. On physical examination, there is no evidence of heart failure or elevated jugular venous pressure, but chest X-ray shows bilateral pulmonary edema. What are the most likely diagnosis and treatment strategy?**
- Acute hemolytic reaction; discontinue transfusion and start mannitol to maintain urine output
 - Non-hemolytic febrile reaction; give antipyretics and continue transfusion at a slower rate
 - Transfusion-Associated Circulatory Overload (TACO); administer immediate strong diuretics and vasopressors
 - Transfusion-Related Acute Lung Injury (TRALI); provide supportive treatment
- 53- A 40-year-old man has been brought to the emergency department following a motor vehicle accident. The patient is conscious and slightly agitated. There is active bleeding from the site of a femoral fracture. The distal pulse of the limb is palpable. Vital signs include BP: 120/65 PR:110 RR:30. Which of the following is correct?**
- The patient is classified as Class 1 in the hemorrhagic shock classification
 - Hb and Hct levels at admission are good indicators for assessing the amount of blood loss
 - The best initial fluid for this patient is 1 to 2 liters of isotonic crystalloid solution
 - If hypotension develops, the next step is administration of vasopressor drugs
- 54- A 25-year-old man presents with abdominal pain that started in the epigastric and periumbilical region and then shifted to the RLQ. On examination, he has tenderness and mild rebound tenderness in the RLQ. He has no fever and no leukocytosis. Workup reports acute appendicitis with a fecalith. What is the best management?**
- Prepare the patient for the operating room
 - Perform a CT scan
 - Antibiotics and observation
 - Observe the patient with serial examinations
- 55- All of the following are risk factors for surgical site infection EXCEPT:**
- Advanced age
 - Cigarette smoking
 - Alcoholism
 - Wound hematoma
- 56- A 2-year-old infant is brought in with a diagnosis of umbilical hernia. All of the following are correct EXCEPT:**
- If the fascial defect is less than 15 mm and does not close by age 4, surgery is required
 - If the fascial defect is greater than 15 mm, surgery is required
 - Severe itching of the umbilical skin is an indication for surgery
 - Umbilical hernia does not require surgery until the age of puberty
- 57- A 50-year-old male with no prior surgical history notices a painless bulge in his midline abdomen that reduces spontaneously when he lies supine. He asks if this represents a true abdominal wall defect. Which of the following conditions is characterized without a true fascial defect, carrying no risk of incarceration or strangulation?**
- Spigelian hernia
 - Rectus diastasis
 - Epigastric hernia
 - Femoral hernia

- 58- A 68-year-old male with Type 2 diabetes in the ICU receiving total parenteral nutrition (TPN) following major surgery develops fever, right upper quadrant pain, and leukocytosis. Ultrasound suggests cholecystitis with gallbladder wall thickening and fluid, but no gallstones. A hepatobiliary iminodiacetic acid (HIDA) scan is considered to confirm the diagnosis. What factor in this patient's clinical background places him at a high risk for a false-positive result on the HIDA scan?
- Impaired excretion of the radiotracer due to acute kidney injury
 - Prolonged fasting and administration of total parenteral nutrition (TPN)
 - Complete mechanical obstruction of the common bile duct
 - Pharmacological interference from oral hypoglycemic agents
- 59- A 42-year-old male is evaluated for resistant hypertension accompanied by paroxysmal episodes of severe headache, palpitations, and diaphoresis. Plasma-free metanephrines are markedly elevated, and an abdominal CT scan demonstrates a 4-cm right adrenal mass, confirming the diagnosis of a pheochromocytoma. He is scheduled for laparoscopic right adrenalectomy. Which of the following represents the correct and essential preoperative medical preparation protocol for this patient?
- Initiate beta-blocker therapy first to control tachycardia, followed by the addition of an alpha-blocker at least 10 days prior to surgery
 - Initiate alpha-blockade, ensure adequate fluid hydration, and add beta-blockade (10 days prior to surgery) only after effective alpha-blockade is achieved
 - Start simultaneous alpha and beta-blockade from day one combined with strict fluid restriction
 - Perform an image-guided needle biopsy of the adrenal mass to rule out malignancy before initiating beta-blockade alone
- 60- A 6-year-old child with hereditary spherocytosis is evaluated for splenectomy due to recurrent hemolytic crises and gallstone disease. The surgical team chose to delay the procedure until after the age of 5 and administered necessary vaccines prior to surgery. What is the primary clinical rationale for delaying splenectomy in young children?
- Prevention of life-threatening Overwhelming Postsplenectomy Infection (OPSI) caused by encapsulated bacteria
 - Prevention of acute post-operative thrombocytosis and associated cerebrovascular accidents
 - Prevention of disease recurrence caused by the hypertrophy of accessory spleens
 - Prevention of chronic lower-extremity leg ulcers and hepatic failure

Pediatrics

- 61- A 3-year-old child with unknown immunization history is referred because of macular rash following coryza and conjunctivitis. The rash started from the face and spread to the trunk and extremities. The core temperature was 40°C. A few white spots were detected on the buccal mucosa one day before skin rash appearance. What is the most probable diagnosis?
- Rubella
 - Measles
 - Roseola
 - Fifth disease

- 62- An otherwise healthy 8-year-old child is hospitalized following a 2-day fever, dyspnea and cough. Chest X-ray reveals right lower lobe local infiltration. The most common causative organism is:
- Staphylococcus aureus
 - Hemophilus influenzae
 - Streptococcus pneumoniae
 - Mycoplasma pneumoniae
- 63- Which vaccine does NOT contain live microorganisms?
- Pneumococcus
 - Varicella
 - Rota virus
 - BCG
- 64- Splenectomy is planned for a 10-year-old child with major thalassemia. What is the minimum interval (in terms of weeks) between meningococcal vaccination and surgery?
- 2
 - 4
 - 6
 - 8
- 65- A newborn has a heart rate of 55 beats per minute with a normal rhythm. Which condition is the newborn's mother more likely to have?
- Preeclampsia
 - Systemic lupus erythematosus
 - Gestational diabetes
 - Hypothyroidism
- 66- A 10-day-old newborn presents with jaundice. The general appearance and primitive reflexes are normal. Laboratory evaluations reveal no abnormal findings except indirect hyperbilirubinemia. The following choices are all correct EXCEPT:
- Crigler-Najjar syndrome
 - Gilbert disease
 - Breast milk jaundice
 - Biliary atresia
- 67- A 10-year-old boy has been referred due to proteinuria from 2 months ago. Proteinuria (+2), without any hematuria was detected. Random urine protein to creatinine ratio is 0.8. On physical examination, there is no edema and the blood pressure is normal. What is the next diagnostic step?
- Repeating urinalysis and random urine protein to creatinine ratio
 - Kidney biopsy under ultrasonography guide
 - Abdominopelvic CT Scan
 - Kidney Radionuclide Scan
- 68- All of the following choices are the causes of high anion gap metabolic acidosis, EXCEPT:
- Renal failure
 - Diabetic ketoacidosis
 - Ethylene glycol intoxication
 - Renal tubular acidosis

- 69- An infant presents to the pediatric neurology clinic for a routine neurodevelopmental assessment. On physical examination, the Moro reflex, palmar grasp reflex, and asymmetric tonic neck reflex are absent, whereas the parachute reflex is elicited. What is the minimum chronological age of this infant?
- a) 4 months
 - b) 6 months
 - c) 8 months
 - d) 12 months
- 70- Tongue fasciculations are seen in which of the following diseases?
- a) Guillain-Barre syndrome
 - b) Muscular dystrophy
 - c) Spinal muscular atrophy
 - d) Myasthenia gravis
- 71- A 12-year-old girl presents with abdominal pain that initially located around the umbilicus and then spread to the right lower quadrant. Right lower quadrant tenderness is detected on physical examination. An ultrasound scan shows an appendix diameter of 8 mm. What is the most appropriate action for the patient?
- a) Abdominal CT scan
 - b) Surgery and appendectomy
 - c) Repeat ultrasound 6 hours later
 - d) Pelvic CT scan
- 72- A 10-year-old child with a BMI >95th percentile has been referred to the pediatric clinic. Which of the following tests should be requested in the initial paraclinical evaluation?
- a) Serum cortisol
 - b) Amylase and lipase
 - c) Lipid profile
 - d) Serum albumin
- 73- A 6-year-old child has been hospitalized with hyperglycemia, ketonuria and metabolic acidosis. Which of the following discriminates between this disease and gastroenteritis?
- a) Acidosis
 - b) Polydipsia
 - c) Polyuria
 - d) Ketonuria
- 74- You are called for visiting a 4-year-old child with one episode of convulsion after several hours of the overnight fasting. The patient is obviously wasted (both weight and height are less than 3rd percentile). The history reveals recent flu, decreased appetite and fever. The blood sugar is 35mg/dL; while sodium and potassium are in normal range. Which diagnosis is most probable?
- a) Adrenal insufficiency
 - b) Ketotic hypoglycemia
 - c) Urea cycle defects
 - d) Galactosemia

- 75- A 2-year-old boy presents due to chronic cough and recurrent pneumonia over the past 6 months. In all previous chest X-rays, the involvement has been limited to the right lower lobe. On examination, decreased breath sounds are present in the same area. The onset of symptoms began when the child had been playing in a room with his 5-year-old sibling. What is the most appropriate management?**
- Lung CT scan
 - Bronchoscopy
 - Antibiotic therapy
 - Lobectomy
- 76- Which infant history is NOT consistent with the diagnosis of laryngomalacia?**
- A 3-month-old infant with severe expiratory stridor
 - An 11-month-old infant whose stridor is still present
 - A 5-month-old infant whose stridor decreases when calm
 - A 2-month-old infant whose stridor increases during flu
- 77- A 2-year-old boy with past history of BCG lymphadenitis and several skin abscesses is evaluated. The results of laboratory tests are normal except very low Dihydrorhodamine test (DHR). What immunodeficiency disorder is most probable?**
- Combined immunodeficiency
 - Humoral immunodeficiency
 - Phagocyte defect
 - Complement defect
- 78- A 3-year-old child was referred to the emergency department due to respiratory distress, urticaria, generalized pruritus and nausea and vomiting 30 minutes after eating peanuts. What is the first treatment option?**
- Intramuscular Epinephrine
 - Intramuscular Dexamethasone
 - Intravenous Antihistamine
 - Inhaled Salbutamol
- 79- A 5-year-old child presents with petechiae and ecchymoses. $Plt=12000/mm^3$, Hb and WBC are normal. On physical examination, the child has only mucocutaneous bleeding. What is the best treatment option?**
- Chemotherapy
 - Platelet transfusion
 - Intravenous immunoglobulin
 - Emergency splenectomy
- 80- A 2-year-old child has been referred with a midline crossing abdominal mass and bilateral periorbital ecchymosis. In laboratory study, increased levels of vanillylmandelic acid and homovanillic acid (VMA/HVA) are detected on 24-hour urine collection. What is the diagnosis?**
- Wilms tumor
 - Neuroblastoma
 - Hepatoblastoma
 - Rhabdomyosarcoma

Obstetrics and Gynecology

- 81- A 38-year-old patient presents to the Emergency Ward with severe pain in the LLQ. The patient's pain is episodic and has tenderness and nausea in the peak of pain. On ultrasound, the left ovary is clearly larger than the right ovary and blood flow is reduced. What is the appropriate next step?**
- a) Abdomino-pelvic MRI
 - b) Emergency surgery
 - c) Check for tumor markers
 - d) Electrolyte correction and antibiotic administration
- 82- Which of the following drugs causes endometrial hyperplasia?**
- a) Danazol
 - b) Progesterone
 - c) Tamoxifen
 - d) GnRH agonist
- 83- A 32-year-old G3P0 woman has been referred for a history of recurrent abortions. Further workup reveals uterine fibroids. Surgical removal of which fibroid type has been shown to improve fertility outcomes?**
- a) Submucosal
 - b) Intramural
 - c) Cervical
 - d) Subserosal
- 84- During an abdominal hysterectomy, the surgeon intends to ligate the uterine artery at the level of the internal os. Which structure is at greatest risk of injury?**
- a) Ovarian artery
 - b) Uterosacral ligament
 - c) Ureter
 - d) Pudendal nerve
- 85- A 30-year-old woman has got pregnant while having copper IUD. Ultrasound examination shows an intrauterine pregnancy with gestational age of eight weeks, and the IUD string is visible. What is the appropriate course of action?**
- a) Leave the IUD in place until the end of pregnancy
 - b) Remove the IUD by pulling the string
 - c) Provide progesterone support and leave the IUD in place
 - d) Terminate the pregnancy due to the risk of fetal abnormality
- 86- In a young couple trying to conceive, which of the following tests can help them determine the probable time of ovulation?**
- a) LH urine kit
 - b) Serum estradiol measurement
 - c) Serum progesterone measurement
 - d) Serum FSH level measurement

- 87- A 25-year-old single woman presents with a progressive dysmenorrhea for the past four years. Ultrasound reveals a 3-cm endometrioma cyst in the right ovary. What is the firstline treatment option?**
- Tamoxifen
 - Combined oral contraceptive pill
 - Danazol
 - GnRH agonist
- 88- Which of the following is a definitive indication for systemic hormone therapy in menopausal women?**
- Primary prevention of heart disease
 - Primary prevention of osteoporosis
 - Moderate to severe vasomotor symptoms
 - All women under 60 years of age
- 89- A 64-year-old multiparous woman presents with complaints of urine leakage when coughing and lifting heavy objects. On examination, urine leakage from the meatus is observed when the patient coughs. There are no symptoms of urgency or frequency. Which pathophysiological mechanism plays the most significant role in this condition?**
- Uncontrolled detrusor muscle contraction
 - Intra-abdominal pressures exceed urethral closure pressure
 - Bladder outlet obstruction
 - Vesicovaginal fistula
- 90- A 35-year-old woman, G3P2L2 presents with complaints of left lower quadrant pain and spotting. She has stable vital signs. Her laboratory tests are: WBC:10400/mm³ HB:10.1 g/dl PLT:168000 mm³, and BHCG:5160 mIU/ml. A vaginal ultrasound shows a 2-cm mass next to the left ovary with moderate free intraperitoneal fluid. Which treatment is recommended?**
- Expectant management
 - Left tubal laparoscopic salpingectomy
 - Single-dose methotrexate administration
 - Multi-dose methotrexate administration
- 91- A 41-year-old woman, G3P2L2 with a history of overt diabetes mellitus with gestational age of 38 weeks refers with labor pain. During the labor, her vaginal examination reveals dilatation of 7-cm with 60% effacement and zero station. Which of the following medical orders is recommended?**
- Infusion of serum dextrose 5%
 - Checking blood glucose every 4 hours
 - Administration of regular insulin
 - Checking fetal heart rate every 15 minutes
- 92- A woman at 32 weeks of gestation, presented with nausea and vomiting and epigastric pain. Her vital signs reveal: BP: 220/110 mmHg, PR: 58/min, RR: 15/min T: 37/1°C. Her laboratory tests show AST: 199 u/l, HGB: 14g/dl, PLT: 110000/mm³ and Cr: 1mg/dl and random urine protein: +1. Which drug prescription is NOT appropriate for this patient?**
- Magnesium sulfate
 - Bethametasone
 - Labetalol
 - Hydralazine

- 93- Which of the following is recommended to administer prophylactic antibiotics against GBS during labor?**
- a) A mother with 36 weeks and 4 days of gestation whose previous child had an early onset GBS disease
 - b) A mother with 38 weeks of gestation who presented with complaints of ruptured membranes and labor pain from 12 hours ago
 - c) A mother with 37 weeks and 4 days of gestation who presented with labor pain
 - d) A mother who had bacteriuria with GBS in previous pregnancy
- 94- A 35-year old woman, with previous pregnancy of a newborn with NTD (Neural Tube Defect), refers for preconception consultation. She has taken daily multivitamin containing 2 mg folic acid. Which recommendation is correct?**
- a) Add 2 mg folic acid to her daily multivitamin
 - b) Add 4 mg folic acid to her daily multivitamin
 - c) Continue only her daily multivitamin
 - d) Add 1 mg folic acid and stop her daily multivitamin
- 95- A patient has severe postpartum hemorrhage following a vaginal delivery. She receives 4 units of PRBC (Packed RBC) during the first one hour while her vaginal bleeding continues. Which is the best recommendation for blood transfusion in this patient?**
- a) Continue with just PRBC until HGB>8mg/dl
 - b) Continue with PRBC with platelet if the platelet level diminishes
 - c) Transfusion of PRBC, FFP, Platelet in a 1;1;1ratio
 - d) PRBC with Normal saline
- 96- A woman at 40 weeks of gestation and intact membrane is augmenting with oxytocin. She has cervical dilatation of 4 centimetres from 4 hours ago. She has 3 contractions in 10 minutes. Which intervention is correct?**
- a) Amniotomy
 - b) Increase oxytocin dose
 - c) Stop oxytocin and use of misoprostol
 - d) Caesarean section

Neurology

- 97- A 72-year-old woman presents with weakness and numbness of legs, decreased sensation of perineal region and areflexia. Which of the following situations can be the cause of this problem?**
- a) Fracture of thoracic spine
 - b) Extrusion of cervical disc
 - c) Lumbosacral spinal intracanal hemorrhage
 - d) Craniocervical region tumor
- 98- Which of the following laboratory examinations is advised in all patients with dementia?**
- a) Thyroid function tests
 - b) Lyme serology
 - c) HIV serology
 - d) cerebro-spinal fluid examination

- 99- A 12-year-old boy is brought to the clinic with a history of a generalized tonic-clonic seizure. The patient's companions report a history of staring attacks lasting a few seconds, beginning at the age of 8y/o. During these attacks, the patient is unconscious and blinks continuously, but regains consciousness immediately after the attack. What is the choice of treatment for this patient, and by which mechanism does this drug control his staring attacks?
- a) Phenytoin, a calcium channel blocker
 - b) Ethosuximide, a sodium channel blocker
 - c) Valproate, a calcium channel blocker
 - d) Carbamazepine, a sodium channel blocker
- 100- Which of the following has better prognosis for multiple sclerosis?
- a) Onset after age 40
 - b) Onset with cerebellar symptoms
 - c) Steady, progressive course
 - d) Onset with optic neuritis
- 101- A 38-year-old female is admitted due to headache and seizure one week postpartum. Examination reveals papilledema, and MRI shows evidence of superior sagittal sinus thrombosis. She reports a history of recurrent miscarriages, and testing suggests antiphospholipid syndrome. What is the choice of treatment?
- a) Anticoagulant therapy for 3 to 6 months
 - b) Lifelong anticoagulant therapy
 - c) Antiplatelet therapy for 3 to 6 months
 - d) Lifelong antiplatelet therapy
- 102- A 30-year-old male is referred to the clinic complaining of non-pulsatile right temporal headaches. The headaches are severe, accompanied by autonomic symptoms in the right eye, and last approximately one hour. Considering the most likely diagnosis, all of the following are correct, **EXCEPT**:
- a) The time of attack onset is consistent on different days.
 - b) The headache improves with lying down and remaining motionless.
 - c) Duodenal ulcers have a high prevalence in these patients.
 - d) Alcohol can trigger headache attacks during the active phase of the disease.

Infectious Diseases

- 103- A 42-year-old man with a history of valve replacement from 5 years ago and endocarditis from last year is candidate for single-level molar tooth restoration and has allergy to penicillin. What medicine is recommended for the prophylaxis of endocarditis?
- a) Administration of amoxicillin 2 g 1 hour before surgery
 - b) Administration of clindamycin 600 mg 1 hour before surgery
 - c) Administration of azithromycin 500 mg 1 hour before surgery
 - d) The patient does not need endocarditis prophylaxis

- 104- In a patient with severe COVID-19, prescribing which of the following is NOT effective in reducing mortality?**
- a) Remdesivir
 - b) Tocilizumab
 - c) Dexamethasone
 - d) Ivermectin
- 105- In which of the bite cases, antibiotic prophylaxis is recommended in all cases even if the wound is not infected?**
- a) Dog bite
 - b) Human bite
 - c) Cat bite
 - d) Rodent bite
- 106- A 32-year-old male candidate for liver transplant has a tuberculin skin test of 6 mm in the screening tests. According to the skin test size, what is the next step?**
- a) It does not require any special action
 - b) Roll out of active tuberculosis and initiation of isoniazid prophylaxis
 - c) Start treatment with anti-tuberculosis agents
 - d) Repeating the tuberculin skin test two weeks later, and if the size increases by more than 10 mm, Prescribe isoniazid prophylaxis.
- 107- A 23-year-old man with diabetes mellitus presents with symptoms of productive cough. He does not mention symptoms such as sore throat and runny nose. On examination, T: 37.8, HR: 90, RR: 22, SBP:120/85, O2 Sat: 95% . On auscultation of the lungs, a rale is heard at the base of the right lung. A CXR is performed for the patient and opacity is observed at the base of the right lung. What is the appropriate treatment for the patient?**
- a) Patient hospitalization and administration of Ceftriaxone with Azithromycin
 - b) Outpatient treatment with Amoxicillin
 - c) Outpatient management with a combination of Coamoxiclave and Azithromycin
 - d) Patient hospitalization and administration of Levofloxacin
- 108- A 25-year-old man with no specific underlying disease has had a sore throat for the past 2 weeks. On examination, he has a bilateral exudative lesion and posterior cervical lymphadenopathy. The patient has received injection of benzathine penicillin as an outpatient, but has not improved. Which of the following tests is NOT necessary to diagnose the disease?**
- a) VCA Ab (IgM/IgG)
 - b) CMV Ab (IgM/IgG)
 - c) HIV Ab/Ag
 - d) Performing a bacterial culture from the throat

Radiology

- 109- Brain CT scan without contrast from a 65-year-old man with occasional headaches shows pineal gland calcification as well as punctate calcifications in the basal ganglia bilaterally. What is the next step in the evaluation?**
- a) Brain CT scan with contrast
 - b) Brain MRI
 - c) Blood exams for metabolic disorders
 - d) No follow up needed
- 110- All of the following are criteria for an adequate PA chest radiograph, EXCEPT.**
- a) The spine through the heart
 - b) At least 8-9 posterior ribs
 - c) Spinous process should fall equidistant between the medial ends of the clavicles
 - d) Anteroposterior (AP) films show the heart size smaller
- 111- In an adult patient, which of the following is an indication for ordering a chest CT scan WITH contrast?**
- a) Detection of a lung nodule
 - b) Detection of pneumothorax
 - c) Evaluation of mediastinum and lung hilla for adenopathy
 - d) Evaluation of lungs parenchyma with HRCT
- 112- In a plain abdominal X-ray, the presence of all of the following help to recognize a soft tissue mass or an organomegaly, EXCEPT:**
- a) Adjacent fat tissue (fat line)
 - b) Free air
 - c) Displacement of air- filled bowel loops
 - d) Free abdominal fluid
- 113- Triphasic abdominal CT scan from a 60-year-old man with vague pain in RUQ shows a solid mass with 5cm diameter that is hypodense in plain CT and irregular enhancement in arterial phase and hypodense in venous (delayed) phase. What is the most likely diagnosis?**
- a) Hepatocellular carcinoma (HCC)
 - b) Cavernous hemangioma
 - c) Cholangiocarcinoma
 - d) Hematoma
- 114- A full-term neonate delivered by Cesarean section one hour ago developed tachypnea and mild respiratory distress. Chest radiography is performed. Based on the most likely diagnosis, which one of the following radiographic findings would NOT be expected?**
- a) Hypoinflation
 - b) Streaky perihilar linear densities
 - c) Fluid in the fissures
 - d) Laminar pleural effusions

Psychiatry

- 115- A 22-year-old man has firmly believed for about 4 months that his roommate in the dormitory is his enemy and intends to kill him by poisoning. He interprets his roommate's moving of food containers and prolonged stares as evidence for this belief. The patient occasionally notices a strange smell in the food kept in the shared refrigerator and considers it a sign of his roommate's plot. His relationship with the roommate has become severely hostile and tense, but his interactions with other friends and classmates remain warm and untroubled, and his academic performance continues to be excellent as before. There are no mood symptoms or substance use. Based on the DSM-5-TR diagnostic criteria, which of the following is the most likely diagnosis?**
- a) Schizophrenia
 - b) Schizophreniform disorder
 - c) Delusional disorder
 - d) Brief psychotic disorder
- 116- A 28-year-old man with a history of congenital scoliosis, who is under the care of an orthopedist, is brought to the emergency ward by his family due to a 5-day episode of elevated mood, decreased need for sleep, talkativeness, increased goal-directed activities, and lavish spending. The patient has no prior history of mood episodes or major depression. Over the past 2 weeks, he has repeatedly used inhaled crystal (methamphetamine). There are no psychotic symptoms. Based on the DSM-5-TR diagnostic criteria, which of the following is the most likely diagnosis ?**
- a) Bipolar Disorder Type 1
 - b) Bipolar Disorder Type 2
 - c) Substance Induced Bipolar Disorder
 - d) Bipolar Disorder due to Another Medical Condition
- 117- A 24-year-old man with a history of schizophrenia presents with immobility and waxy flexibility. During the examination, when the physician raises his hand and taps it on the table, the patient immediately and without any verbal instruction, repeats the exact same movement. Which term best describes this behavior?**
- a) Echopraxia
 - b) Cataplexy
 - c) Echolalia
 - d) Catalepsy
- 118- A 50-year-old man presents with complaints of restlessness, a sensation of insects crawling, and an irresistible urge to move his legs while sitting for a long time or before going to sleep. Treating which underlying cause is more likely to alleviate these symptoms?**
- a) Liver disease
 - b) Kidney failure
 - c) Heart disease
 - d) Adrenal insufficiency
- 119- In a normal grief reaction, which one of the following symptoms may occur?**
- a) Feeling the presence of the deceased person
 - b) Feeling of worthlessness
 - c) Suicidal thought
 - d) Marked impairment in functioning

- 120- A patient has excessive and uncontrollable worry about a variety of issues on most days over the past year. He has had restlessness, irritability, muscle tension, sleep disturbances, and impaired functioning at the same time. There is no history of any medical condition or the use of any medication or substances that would account for the mentioned symptoms. Which one of the following medications is NOT the preference of choice for long term pharmacological treatment?**
- a) Buspiron
 - b) Sertraline
 - c) Lorazepam
 - d) Imipramine

Dermatology

- 121- A 65-year-old farmer man presents with a history of a solitary lesion on the nose from 2 months ago. The lesion is firm, approximately 1.5 cm in diameter, and has a keratinous center resembling volcano. The lesion has grown rapidly over several weeks. Based on the clinical features, which of the following is the most appropriate diagnosis?**
- a) Seborrheic keratosis
 - b) Keratoacanthoma
 - c) Actinic keratosis
 - d) Basal cell carcinoma
- 122- A 72-year-old man is referred with pruritus and tense bullous lesions on flexoral aspects of upper and lower extremities along with erosive lesions on hard palate from one month ago. Biopsy reveals subepidermal cleavage with neutrophil and eosinophil infiltration and also in direct immunofluorescence of perilesional skin linear deposition of C3 and IgG in basement membrane zone is seen. What is the diagnosis?**
- a) Bullous Pemphigoid
 - b) Pemphigus Vulgaris
 - c) Pemphigus Foliaceus
 - d) Para neoplastic Pemphigus
- 123- A nine-month-old infant with a history of several months of itching and dry skin, with red oozing plaques on the cheeks and lower legs, has developed fever and fatigue since a day before and multiple vesiclespustular and crusted lesions on the inflamed area. What is the most likely diagnosis?**
- a) Bullous impetigo
 - b) Eczema herpeticum
 - c) Molluscum Contagiosum
 - d) Erythema infectiosum
- 124- A young man presents with complain of burning symmetric lesions on hands and elbows. The lesions are erythematous papules and in some areas with annular and concentric target like appearance. The patient has fever, fatigue and myalgia from one week before. Based on the diagnosis, which of the following is the most likely mechanism of this disease?**
- a) Type I hypersensitivity reaction to Staphylococcus aureus antigen
 - b) Type IV hypersensitivity reaction to Herpes virus antigen
 - c) Immune complex reaction to food antigens
 - d) Activation of complement by Papillomavirus antigen

- 125- A 5-year-old child from a rural area presents with hair loss for the past 2 months. On examination, a red, scaly plaque with thick yellow crusts and foul odor is observed. When the crusts are removed, red, cup-shaped erosion with a moist base remains. The affected hairs show gray-green fluorescence under Wood's lamp. What causes this hair loss?**
- a) *Microsporum canis*
 - b) *Trichophyton tonsurans*
 - c) *Microsporum audouinii*
 - d) *Trichophyton schoenleinii*
- 126- A 42-year-old man presents with chronic pain and swelling of the distal interphalangeal (DIP) joints. He reports a several-year history of recurrent, well-demarcated erythematous plaques covered with scales over the extensor surfaces of his elbows and knees. Physical examination reveals multiple nail pits and distal onycholysis. Which drug can exacerbate cutaneous lesions in this patient?**
- a) Hydroxychloroquine
 - b) Acitretin
 - c) Doxycycline
 - d) Adalimumab

Orthopedics

- 127- For evaluating metastasis throughout the entire skeletal system in a patient with a history of renal cancer, which imaging modality is appropriate?**
- a) Radiography
 - b) MRI
 - c) CT scan
 - d) Radionuclide scan
- 128- In a patient with a subtrochanteric fracture, what is the typical position of the injured limb?**
- a) Longer than the opposite side and externally rotated
 - b) Longer than the opposite side and internally rotated
 - c) Shorter than the opposite side and externally rotated
 - d) Shorter than the opposite side and internally rotated
- 129- A 60-year-old woman presents with pain and limited motion of the left shoulder. The examination is performed as follows:**
“The shoulders are abducted to 90 degrees and flexed 30 degrees, then fully internally rotated so that the thumbs point toward the floor. The patient is asked to elevate the arms against the examiner's resistance.”
Which of the following rotator cuff tendons is being tested in this examination?
- a) Supraspinatus
 - b) Infraspinatus
 - c) Subscapularis
 - d) Teres minor

130- Which disorder of the hand is due to hyperplasia of the palmar fascia?

- a) Trigger finger
- b) Mallet finger
- c) Dupuytren's disease
- d) Xanthoma

131- The following statement describes which type of the Salter–Harris classification of physeal injuries in children?

“In this fracture, the fracture line begins in the metaphysis, extends through the physis, and then exits through the epiphysis.”

- a) Type 1
- b) Type 2
- c) Type 3
- d) Type 4

132- A 5-month-old infant with suspected developmental dysplasia of the hip (DDH) is brought to the orthopedic clinic. Which physical examination is valuable for evaluation of this disorder in this child?

- a) Ortolani test
- b) Barlow test
- c) Hip abduction limitation test
- d) Trendelenburg test

Urology

133- A 14-year-old boy presents with a history of sudden, severe right testicular pain that has occurred four times over the past 6 months. Each episode began abruptly and resolved spontaneously within 1–2 hours. He is currently asymptomatic. On physical examination: Both testes are located within the scrotum. The right testis has a slightly horizontal lie compared to the contralateral side. There is no tenderness or swelling. The cremasteric reflex is present bilaterally. Scrotal Doppler ultrasound performed while the patient is pain-free shows normal bilateral blood flow.

What is the most appropriate next step?

- a) Reassurance and observation
- b) Scrotal MRI
- c) Elective right side orchiopexy
- d) Elective bilateral orchiopexy

134- A 55-year-old man presents due to asymptomatic microscopic hematuria found during annual tests. All of the following are needed for the patient's evaluation EXCEPT?

- a) Abdominopelvic CT scan
- b) Random biopsy of the bladder
- c) Serum PSA levels
- d) Urine Cytopathology

- 135- The parents of a 28-day-old male infant present to you concerned that one of their child's testicles is not within the scrotum. On examination, the testis is palpable in the inguinal canal. What is your next step?**
- a) Refer for orchiopexy surgery at the earliest opportunity
 - b) Recommend waiting until 6 months of age for possible descent
 - c) Since the testis is palpable, surgery is not necessary
 - d) Recommend waiting until puberty for possible testicular descent
- 136- A patient has developed kidney stone due to severe dietary calcium restriction. Which finding is most likely to be observed on metabolic evaluation?**
- a) Hyperoxalluria
 - b) Hyperuricosuria
 - c) Hypocitraturia
 - d) Hypomagnesuria
- 137- A 65-year-old man with Benign Prostatic Hyperplasia (BPH) presents with urinary incontinence. He complains of delay and difficulty in initiation of urination and in physical exam the bladder is completely full. Which type of urinary incontinence is most likely?**
- a) Stress Incontinence
 - b) Urge Incontinence
 - c) Paradoxical Incontinence
 - d) True Incontinence
- 138- In an ultrasound performed for a middle-aged woman, a bright and highly echogenic mass is seen in the right kidney. Which diagnosis is most likely?**
- a) Simple renal cyst
 - b) Cystic Nephroma
 - c) Oncocytoma
 - d) Angiomyolipoma

Ophthalmology

- 139- Which ocular disorder attenuates color vision more severely than visual acuity?**
- a) Diabetic macular edema
 - b) Age-related macular degeneration
 - c) Hydroxychloroquine-related retinal toxicity
 - d) Optic neuritis
- 140- A welder presents to emergency ward with the complaint of ocular pain, tearing, photophobia, and foreign body sensation in his both eyes. Diffuse punctate epithelial erosions are evident in slit-lamp biomicroscopy. No foreign body is seen. Which one is the best therapeutic approach?**
- a) Ocular irrigation with large amount of fluids
 - b) Ocular patching
 - c) Topical steroid prescription every six hours
 - d) Topical anesthesia prescription every six hours

- 141- In the examination of an 8-year-old child with 10/10 vision in both eyes, when you cover each eye, the opposite eye does not move. But after removing the cover from the right eye, the right eye moves from outside to inside. After removing the cover from the left eye, the left eye moves from outside to inside. Which type of deviation is more likely in this child?**
- a) Exophoria
 - b) Exotropia
 - c) Esophoria
 - d) Esotropia
- 142- A 6-month-old baby presents with a red lump on the left eyelid since 4 months ago. On examination, typical capillary hemangioma is seen in the left eyelid, which blocks pupil. Which management is preferable for this patient?**
- a) Oral steroid
 - b) Oral propranolol
 - c) Observation
 - d) Excisional biopsy
- 143- A 28-year-old woman presents with severe bilateral redness, photophobia, and tearing. Five days earlier, she had symptoms resembling a common cold. On examination, prominent follicles with a whitish membrane on the tarsal conjunctiva are observed, which causes punctate bleeding when removed. Preauricular lymphadenopathy is also noted on examination. What is the most likely diagnosis?**
- a) Bacterial conjunctivitis
 - b) Adenoviral conjunctivitis
 - c) Herpetic conjunctivitis
 - d) Allergic conjunctivitis
- 144- A 26-year-old man who uses contact lenses presents with severe pain, photophobia, and decreased vision. On examination, diffuse epithelial defects with enlarged corneal nerves are observed. What is the most likely diagnosis?**
- a) Bacterial keratitis
 - b) Epithelial herpetic keratitis
 - c) Acanthamoeba keratitis
 - d) Fungal keratitis

ENT

- 145- Among cancers of the upper aerodigestive tract, which site has the lowest incidence of metastasis to the cervical lymph nodes?**
- a) Nasopharynx
 - b) Oropharynx
 - c) Oral cavity
 - d) Glottis

- 146- A one-month-old infant with a history of prematurity is brought to you with complaints of abnormal breathing sounds, poor weight gain, and feeding difficulties. On examination, the craniofacial appearance is normal. The infant has intermittent inspiratory stridor that improves in the prone position or with neck extension. What is the most probable diagnosis?**
- a) Choanal atresia
 - b) Laryngeal papillomatosis
 - c) Retrognathia
 - d) Laryngomalacia
- 147- Which one of these choices provides the communication pathway for the perilymphatic fluid at the basal turn of the cochlea to the subarachnoid space?**
- a) Vestibular aqueduct
 - b) Cochlear aqueduct
 - c) Elliptical recess
 - d) Endolymphatic sac
- 148- A 50-year-old man with poorly controlled diabetes underwent lower molar root surgery three days ago. Since today, he has developed sudden swelling of the submandibular region accompanied by dark discoloration of the overlying skin and subcutaneous crepitus in that area. Based on the most likely diagnosis, what is the best management?**
- a) Initiation of antibiotic therapy without surgery
 - b) Drainage through a small incision combined with antibiotic therapy
 - c) Drainage followed by primary closure of the incision and antibiotic therapy
 - d) Surgical drainage with repeated debridement combined with antibiotic therapy
- 149- A 50-year-old man presents with right parotid swelling, visual disturbance, low-grade fever, and facial paralysis. Ophthalmologic consultation attributes the visual problem to uveitis. What is the most likely diagnosis?**
- a) Bell's palsy
 - b) Heerfordt syndrome
 - c) Temporal arteritis
 - d) Sjögren's disease
- 150- A 7-year-old boy has herpes-zoster infection. On examination, vesicles are present on the tip of the nose. Through branches of which nerve can the infection spread to the eye?**
- a) Maxillary
 - b) Mandibular
 - c) Ophthalmic
 - d) Facial

Epidemiology and Statistics

- 151- In a clinical study on cardiac patients, the following variables were recorded: “Gender, severity of chest pain (mild/moderate/severe), number of emergency department visits in the past six months, blood cholesterol level (mg/dL).” Which option correctly classifies the types of data (in order from left to right)?**
- a) Nominal – Nominal – Ordinal – Discrete
 - b) Nominal – Ordinal – Discrete – Continuous
 - c) Nominal – Continuous – Continuous – Ordinal
 - d) Ordinal – Nominal – Discrete – Discrete
- 152- A medical researcher is investigating triglyceride levels in a population. In a preliminary study of 100 patients, the standard deviation (SD) and the mean of the data were reported as 40 and 150 mg/dL respectively. The researcher intends to double the “precision of the mean estimate” in the main study (i.e., reduce the standard error of the mean (SE) by half). Based on sampling distribution of means, to what number should the sample size be increased?**
- a) 1600
 - b) 800
 - c) 400
 - d) 200
- 153- In a cohort study investigating the relationship between exposure to industrial pollutants and the incidence of respiratory diseases, researchers followed 500 exposed workers and 1,000 unexposed office employees for 10 years. At the end of the follow-up period, 50 cases of disease were observed in the worker group and 20 cases in the office employee group. What is the value of the Relative Risk (RR), and how should it be interpreted?**
- a) RR = 2.5; The risk of developing the disease among exposed individuals is 150% higher than among unexposed individuals.
 - b) RR = 2.5; The risk of developing the disease among exposed individuals is 50% higher than among unexposed individuals.
 - c) RR = 5.0; The risk of developing the disease among exposed individuals is five times that among unexposed individuals, but not significant
 - d) RR = 5.0; The risk of developing the disease among exposed individuals is five times that among unexposed individuals.
- 154- Based on epidemiological studies, ample use of which mineral can reduce the risk of colon and rectal cancer?**
- a) Phosphorus
 - b) Calcium
 - c) Iron
 - d) Magnesium
- 155- Cardiovascular diseases, cancers, chronic respiratory diseases and diabetes have the highest burden of diseases in low-and-middle income countries. Focusing on main risk factors, which one of the following should be controlled as a priority?**
- a) Sedentary lifestyle and nutrition
 - b) Diabetes
 - c) Hypertension
 - d) Hyperlipidemia

156- Which method is the most effective in the shortest time to prevent and control malaria?

- a) Timely and appropriate treatment
- b) Vector control measures
- c) Public health education
- d) Immediate diagnosis and reporting

Pharmacology

157- A patient on Furosemide develops hypokalemia and metabolic alkalosis. What is the primary mechanism of action of this drug?

- a) Carbonic anhydrase inhibition
- b) Aldosterone receptor blockade
- c) Inhibits $\text{Na}^+/\text{K}^+/\text{2Cl}^-$ cotransporter in loop of Henle
- d) Inhibits Na^+/Cl^- cotransporter in distal tubule

158- A 65-year-old man with Parkinson disease develops dyskinesias after prolonged levodopa therapy. Which mechanism explains this complication?

- a) GABA inhibition
- b) Stimulation of DA (Dopamin) receptors
- c) Increased COMT activity
- d) 5HT_3 depletion

159- A patient with Type 2 diabetes is prescribed a drug that activates PPAR- γ receptors and increases insulin sensitivity, but may cause weight gain and edema. Which drug is this?

- a) Metformin
- b) Pioglitazone
- c) Glipizide
- d) Sitagliptin

160- A 24-year-old man with generalized tonic-clonic seizures is started on a drug that blocks voltage-gated sodium channels and may cause gingival hyperplasia. Which drug was prescribed?

- a) SodiumValproate
- b) Levetiracetam
- c) Phenytoin
- d) Carbamazepine

161- Which of the following drugs requires caution in those taking potassium channel blockers?

- a) Gentamicin (aminoglycoside)
- b) Trimethoprim-sulfamethoxazole
- c) Ciprofloxacin (fluoroquinolone)
- d) Penicillin

162- A patient with peptic ulcer disease is prescribed Omeprazole. What is its mechanism of action?

- a) H_2 receptor blockade
- b) Inhibition of H^+/K^+ ATPase
- c) Neutralizing gastric acid
- d) Muscarinic receptor blockade

Medical Ethics

163- Which option is correct regarding "job and profession" and consequently "Employees and professionals ?"

- a) Regarding professionalism, there is no problem with all business owners providing a specialized service or selling a product with the aim of earning a living and making a profit. In other words, the main goal is profit and every effective action such as respect and customer-centeredness is taken to earn more profit.
- b) According to social ethics and civil rights, all business owners have a mission beyond profit and making a profit, which is to provide a service.
- c) Today, all business owners must set standards for performance and service delivery that are in line with the mission of that job and monitor the proper implementation of those standards.
- d) Professionalism means that some business owners have ways, methods, and instructions for independent management of the profession (in a way that can pursue the main goal of providing the profession without the need for outside interventions and with internal supervision).

164- In the relationship between a doctor and a patient, if a sense of value is not formed in the patient, which option could be correct?

- a) The doctor correctly understood the concept of respect but did not have the necessary motivation to behave respectfully.
- b) The doctor had the necessary motivation to behave respectfully and thought that he behaved respectfully, but in fact he did not.
- c) The doctor had respectful and flawless communication behavior, but the effect of the environment prevented him from conveying his respectful message to the patient.
- d) All three options are correct.

165- In the topic of ethics in education in university hospitals, which option is correct?

- a) It is not necessary to explain to patients the status of students, the importance of their education, and their academic level
- b) The patient has the right to have information about the treatment team, if desired, such as how many students will be on his treatment team, what tasks will be assigned to each, and how their good performance will be monitored
- c) From an ethical perspective, it is sufficient to obtain general consent from the patient upon entry to a teaching hospital
- d) Legally, patients should not refuse to cooperate in the education of students and learners, but ethically, it is necessary to obtain their consent

Pathology

166- Which of the following is the most important prognostic factor in noninvasive papillary urothelial neoplasms?

- a) Multifocality of the lesion
- b) Positive urine cytology
- c) Tumor size
- d) Tumor grade

167- A 28-year-old man presents with a painless enlargement of the right testis. Physical examination reveals a firm, non-tender testicular mass. Serum tumor marker evaluation demonstrates a markedly elevated β -hCG level, while AFP is within normal limits. Following orchiectomy, histopathologic examination shows a tumor composed of cytotrophoblasts and syncytiotrophoblasts without formation of chorionic villi.

Which of the following is the most likely diagnosis?

- a) Seminoma
- b) Embryonal carcinoma
- c) Yolk sac tumor
- d) Choriocarcinoma

168- A 62-year-old woman presents with abnormal vaginal bleeding. Histologic examination of a uterine curettage specimen reveals a tumor with papillary architecture and marked cytologic atypia. Some areas of the tumor form glandular structures. Immunohistochemistry (IHC) demonstrates strong and diffuse p53 staining. Based on these findings, which of the following is the most likely diagnosis?

- a) Endometrioid carcinoma
- b) Serous carcinoma
- c) Clear cell carcinoma
- d) Mucinous carcinoma

169- A 68-year-old woman presents with a breast mass detected on screening. Immunohistochemical analysis reveals estrogen receptor positivity and HER2 negativity. Histopathologic evaluation reports a grade 1 tumor. Based on these findings, which of the following biologic subtypes of breast cancer is most likely?

- a) HER2
- b) Triple Negative
- c) Luminal
- d) Basal-like

170- A 40-year-old woman presents with complaints of neck pain, fever, malaise, and thyroid enlargement. She reports a history of an upper respiratory tract infection over the past two weeks. On examination, the thyroid is enlarged. Laboratory evaluation reveals leukocytosis and elevated ESR. Microscopy shows lymphocytic infiltration and granulomatous inflammation.

Which finding is expected in the course of this disease?

- a) The disease usually begins with hypothyroidism.
- b) Most patients become euthyroid within six to eight weeks.
- c) Extension to adjacent organs, such as the parathyroid glands and the recurrent laryngeal nerve is a common complication.
- d) Association with retroperitoneal fibrosis is accompanied by a poor prognosis

171- On microscopic evaluation of a tumor in the floor of the fourth ventricle in a 42-year-old man, cells with regular round to oval nuclei and granular chromatin are observed. Rosettes and pseudorosette areas, formed by tumor cells arranged around blood vessels, are also present.

Which diagnosis is most likely?

- a) Ependymoma
- b) Oligodendroglioma
- c) Astrocytoma
- d) Ganglioglioma

172- Which one is the most common pathway for sporadic colorectal cancer?

- a) Microsatellite instability pathway
- b) Polyp-Adenoma-Carcinoma
- c) Chronic colitis
- d) Inflammatory bowel disease

173- Which one is hallmark for Crohn disease?

- a) Diffuse mucosal involvement
- b) Submucosal involvement
- c) Non-caseous granuloma
- d) Only colon involvement

174- A 45-year-old woman presents with generalized pruritus, fatigue, and an elevated serum alkaline phosphatase level. Serologic testing is positive for anti-mitochondrial antibodies (AMA). A liver biopsy demonstrates destruction of the small intrahepatic bile ducts accompanied by a chronic inflammatory infiltrate.

Which of the following statements is correct?

- a) It primarily affects the large extrahepatic bile ducts and is commonly associated with ulcerative colitis.
- b) It is characterized by concentric periductal ("onion-skin") fibrosis and progressive biliary strictures.
- c) It is characterized by destruction of the small intrahepatic bile ducts with a lymphocyte-rich inflammatory infiltrate, producing the characteristic florid duct lesion.
- d) It is often associated with copper accumulation in hepatocytes and urinary excretion of copper

175- A patient with a cardiac myxoma presents with fever, malaise, fatigue, and weight loss despite the absence of infection. These constitutional symptoms are primarily attributed to the release of which of the following inflammatory mediators by the tumor?

- a) Interleukin-2 (IL-2)
- b) Interleukin-6 (IL-6)
- c) Interleukin-10 (IL-10)
- d) Interleukin-13 (IL-13)

176- A patient with confirmed multiple myeloma develops progressive renal insufficiency. Urine analysis shows abundant free light chains.

What is the most important mechanism of renal injury in this patient?

- a) Increased blood viscosity due to excess immunoglobulin
- b) Obstruction of renal tubules by light-chain casts
- c) Deposition of immune complexes in the glomeruli
- d) Extensive infiltration of plasma cells into renal parenchyma

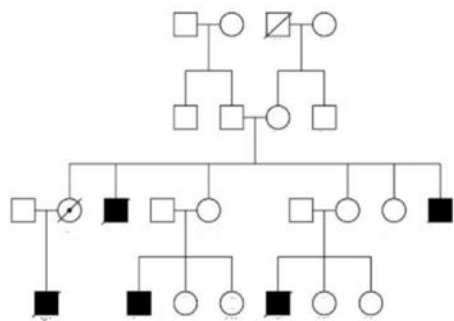
177- A patient presents with recurrent wheezing and dyspnea. Charcot-Leyden crystals are found in sputum.

Which condition is most likely?

- a) Allergic asthma with eosinophilic inflammation
- b) Lobar pneumonia with neutrophilic infiltration
- c) Smoking-related chronic emphysema
- d) Idiopathic pulmonary fibrosis

Genetics

- 178- Which of the following events causes monosomy?
- a) Dispermy
 - b) Disjunction
 - c) Translocation
 - d) Anaphase lag
- 179- A genetic change in which of the following pathways does cause the conversion of a proto-oncogene into an oncogene?
- a) Gene amplification
 - b) DNA break repair
 - c) Loss of heterozygosity
 - d) Loss of function variants
- 180- In which of the following diseases are lethal alleles observed?
- a) Marfan
 - b) Thalassemia major
 - c) Thanatophoric dysplasia
 - d) Duchenne muscular dystrophy
- 181- Which of the following immunodeficiency diseases manifests in a hemizygous state in males?
- a) Pseudoachondroplasia
 - b) Wiskott-Aldrich syndrome
 - c) Beckwith-Wiedemann syndrome
 - d) Adenosine deaminase deficiency
- 182- In the pedigree below, if individual IV4 marries a healthy individual, what is the probability of having a child with Duchenne disease?



- a) $\frac{1}{8}$
- b) $\frac{1}{4}$
- c) $\frac{1}{2}$
- d) 0

Medical Physics

- 183- Technetium is widely used in nuclear medicine imaging due to its**
- Positive beta emission and 110 minutes physical half life
 - Gamma ray with 140 keV energy and 6 hours physical half life
 - Short-range alpha particles and 9 hours physical half life
 - Monoenergetic x-ray and 12 hours physical half life
- 184- In an eye with severe myopia, the image of distant objects is formed at of the retina, and its correction is achieved with a lens to the total refractive power of the visual system.**
- back, convex, reduce
 - front, convex, increase
 - front, concave, reduce
 - front, concave, increase
- 185- In ultrasound imaging, when ultrasonic waves cross the interface between two tissues, the extent of perpendicular reflection depends primarily on the difference in the of the two tissues; if this difference is very large (as in the interface between soft tissue and bone, most of the wave energy is**
- acoustic absorption, scattered
 - acoustic impedance, reflected
 - central frequency, transmitted
 - phase velocity, attenuated
- 186- A radiographic image is formed due to the difference in the of X-rays as they pass through different body tissues on to the detector; such that tissues with high atomic number, due to the dominance of the effect, appear on the image.**
- differential scattering, Compton, white
 - propagation velocity, Rayleigh attenuation, black
 - refraction, Rayleigh attenuation, white
 - differential attenuation, photoelectric, white
- 187- In a CT scan, if the linear attenuation coefficient for an unknown tissue is 0.22 cm^{-1} , assuming the linear attenuation coefficient of water is 0.2 cm^{-1} and air is zero, the Hounsfield Unit of the tissue is and it appears in the CT image.**
- +100, brighter than water
 - 100, darker than water
 - +20, darker than water
 - 20, brighter than water

Immunology

- 188- Which feature differentiates live attenuated vaccines from other types of vaccines?**
- Safety in children with immunodeficiency
 - Necessity of strong adjuvants to stimulate immune response
 - Inducing a limited immune response in the vaccine recipient
 - Ability to produce sustained amounts of antigen

- 189- A 4-year-old boy presents with frequent skin bruises and nose bleeding. A complete blood count shows a decreased platelet number. On physical exam, severe eczema and multiple viral warts (molluscum contagiosum) are seen on his face that have persisted for several months. The physician suspects a primary immunodeficiency, and genetic testing reveals a mutation in the WAS gene.**
Which of the following is the best explanation for the persistence of this patient's viral infection?
- a) Defect in complement system activation and reduced virus opsonization
 - b) Impaired immune synapse formation and decreased cytotoxic T lymphocyte function
 - c) Decreased neutrophil function and impaired phagocytosis of virus-infected cells
 - d) Defect in the development of B lymphocytes and deficiency of all immunoglobulins
- 190- Which mechanism plays a LESS DOMINANT role in killing T lymphocytes by human immunodeficiency virus (HIV)?**
- a) Cytopathic effects of the virus on T lymphocytes
 - b) Destruction of T lymphocytes by CTL cells
 - c) Activation-induced cell death (AICD)
 - d) Opsonization with antibodies and increased phagocytosis
- 191- Removing which immune cell from the donor bone marrow reduces the risk of graft-versus-host disease (GvHD)?**
- a) T lymphocyte
 - b) Monocyte
 - c) Plasma cell
 - d) Neutrophil
- 192- What is the advantage of sublingual immunotherapy over desensitization with allergen given by injection, for the treatment of hay fever?**
- a) It induces the production of regulatory T cells.
 - b) It reduces Th2 activity and IgE production.
 - c) It reduces the risk of anaphylactic shock.
 - d) It is more effective due to increasing doses.
- 193- A child presents with diarrhea and weight loss. Indirect immunofluorescence testing shows IgA class autoantibodies against endomysium in her serum. ELISA also shows positive serum antibody against tissue transglutaminase (tTG). Which of the following is the diagnosis of this disease?**
- a) Celiac disease
 - b) Type 1 diabetes
 - c) Systemic lupus erythematosus
 - d) Rheumatoid arthritis
- 194- Which of the following factors is increased in most people with rheumatoid arthritis?**
- a) ANA
 - b) Anti-CCP
 - c) IgE
 - d) Anti-TNF- α

- 195- Which of the following is the cause of lung damage in farmers' lung disease?**
- a) IgG production against mold spores and deposition of immune complexes in the lung
 - b) IgE production against mold spores and activation of masst cells
 - c) Molecular mimicry between lung antigens and mold sporses
 - d) Th1 and Th17 cell response against mold spores and production of inflammatory cytokines

Nutrition

- 196- Xerophthalmia and Osteomalacia are the results of inadequate intake of which nutrients in order?**
- a) Vitamin A - Vitamin C
 - b) Vitamin D - Vitamin K
 - c) Vitamin A - Vitamin D
 - d) Vitamin C - Vitamin K
- 197- What is the Dietary Reference Intake recommendation for fiber per day?**
- a) 10 grams per 1000 kcalories
 - b) 14 grams per 1000 kcalories
 - c) 28 grams per 1000 kcalories
 - d) 40 grams per 1000 kcalories
- 198- Which sweetener should be restricted in a child with phenylketonuria?**
- a) Stevia
 - b) Sucralose
 - c) Saccharin
 - d) Aspartame
- 199- Which vitamin toxicity during pregnancy is linked to birth defects?**
- a) Vitamin A
 - b) Vitamin D
 - c) Vitamin B12
 - d) Vitamin C
- 200- In a weight-loss diet of 1600 kcalories, how many servings of dairy products are recommended?**
- a) 2 servings
 - b) 3 servings
 - c) 4 servings
 - d) 5 servings

Good luck

Dear volunteer

The Secretariat of the General Medical Education Council and The country's 10th planning zone, with the aim of improving the quality of the questions and process of the exams, accepts the objections that are sent in the format specified below through the Internet, so that the follow-up stage can be done with more speed and accuracy.

While thanking the respectable volunteers for their cooperation, the following should be taken into consideration:

- 1- The exam key to examinations will be available at 12 noon on Sunday 27/09/2026 through the website of the Medical Education Exam Center at www.sanjeshp.ir.
- 2- Deadline for submitting objections is possible, only through the website of the Medical Education Exam Center, from 12 noon on Sunday 27/09/2026, till 12 noon on Tuesday 29/09/2026.
- 3- The only mean of accepting objections is via the internet site www.sanjeshp.ir. No other means of communication would be accepted.

Important Notes:

- Only the objections sent within the 27th to 29th of September will be considered, otherwise after that will not be considered at all.
- The number of objections to one particular question will not affect the revision process, But, all received objections received, will be considered.

Name:	Family name:	ID number:		
Major:	Course Name:	Question number:	Booklet Number:	
Source (s):	Publication Date:	Page (s):	Paragraph (s):	Line (s):

The question (s) under objections:

- ☐ Has more than one answer (s). (Please mention the correct answers)
- ☐ Has no correct answer (s).
- ☐ The stem of the question is not the question is not correct.

Comments: