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39	A	B	C	D	E

PRACTICE QUESTIONS

NBME: USMLE Step 3 Field Trial

STPF3

Step 3 Field Trial

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for NBME: USMLE Step 3 Field Trial STPF3 , each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, STPF3
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

SINGLE CHOICE

A cohort study evaluates the association between serum vitamin D level and the risk of developing multiple sclerosis. The reported relative risk is 0.62 (95% CI 0.41–0.88). Which of the following best describes the clinical meaning of this finding?

- ☐ A A 62% reduction in absolute risk of multiple sclerosis is attributable to higher vitamin D levels
- ☒ B Higher vitamin D levels are associated with a 38% lower relative risk of multiple sclerosis, and the result is statistically significant
- ☐ C Because the relative risk is less than 1, the result is not statistically significant
- ☐ D The result indicates that 62% of patients with higher vitamin D levels will not develop multiple sclerosis

ANSWER B

WHY A relative risk of 0.62 means the risk in the exposed (higher vitamin D) group is 62% of the risk in the comparison group — equivalent to a 38% relative risk reduction. Because the 95% confidence interval (0.41–0.88) does not include 1.0, the result is statistically significant. Option A confuses relative and absolute risk; option C misinterprets statistical significance; option D misstates the meaning of relative risk as an individual-level probability.

QUESTION 2

SINGLE CHOICE

A 32-year-old man presents with fever, headache, photophobia, and nuchal rigidity. Lumbar puncture shows opening pressure of 260 mm H₂O, pleocytosis with predominant lymphocytes, elevated protein, and a normal glucose. CSF Gram stain is negative. He is allergic to penicillin. Which of the following is the most appropriate empiric treatment?

- ☒ **A** Vancomycin plus ceftriaxone
- ☐ **B** Vancomycin plus ceftriaxone plus ampicillin
- ☐ **C** Doxycycline
- ☐ **D** Vancomycin alone

ANSWER A

WHY The CSF profile (lymphocytic pleocytosis, elevated protein, normal glucose) with negative Gram stain in an adult is most consistent with viral meningitis, for which empiric therapy for bacterial coverage is still given until cultures return. In a patient without indication for *Listeria* coverage (not elderly, not immunocompromised, not pregnant), vancomycin plus ceftriaxone is appropriate. Ampicillin is added when *Listeria* is a concern. Doxycycline is not first-line empiric therapy for meningitis. Vancomycin alone is insufficient for gram-negative coverage.

QUESTION 3

SINGLE CHOICE

A 58-year-old man is brought to the emergency department 90 minutes after the onset of crushing substernal chest pain. ECG shows ST-segment elevation of 3 mm in leads II, III, and aVF. His blood pressure is 92/58 mm Hg and his heart rate is 112/min. Cool, clammy extremities and clear lung fields are noted. In addition to aspirin and heparin, which intervention is most appropriate?

- ☐ A Immediate fibrinolytic therapy
- ☒ B Primary percutaneous coronary intervention
- ☐ C Stress echocardiography
- ☐ D High-dose nitroglycerin and beta-blocker therapy

ANSWER B

WHY This patient has an inferior ST-elevation myocardial infarction with right ventricular involvement suggested by hypotension, tachycardia, and clear lung fields. PCI is preferred over fibrinolysis when it can be performed in a timely fashion (<90 minutes from first medical contact) and is associated with better outcomes. Fibrinolysis is reserved for situations in which PCI is unavailable within 120 minutes. Stress testing is contraindicated in acute MI. Nitrates should be avoided in RV infarction because they reduce preload and worsen hypotension.

QUESTION 4

SINGLE CHOICE

A 54-year-old woman with type 2 diabetes mellitus, chronic kidney disease (eGFR 28 mL/min/1.73 m²), and heart failure with reduced ejection fraction has an HbA1c of 8.4%. Which of the following agents is most appropriate to add to her regimen?

- ☐ A Glyburide
- ☐ B Metformin
- ☒ C Empagliflozin
- ☐ D Pioglitazone

ANSWER C

WHY SGLT2 inhibitors such as empagliflozin are recommended in patients with type 2 diabetes who have established cardiovascular disease, heart failure, or chronic kidney disease because they reduce cardiovascular death, hospitalization for heart failure, and slow progression of kidney disease. Glyburide is contraindicated due to risk of hypoglycemia in CKD. Metformin is contraindicated at eGFR <30. Pioglitazone can worsen heart failure and is contraindicated in this setting.

QUESTION 5

SINGLE CHOICE

A 26-year-old woman presents with a facial rash sparing the nasolabial folds, painful oral ulcers, and nonerosive arthritis of the small joints of her hands. Laboratory testing reveals a positive antinuclear antibody and anti-double-stranded DNA antibody. Complement levels are low. Which of the following is the most likely diagnosis?

- ☐ A Rheumatoid arthritis
- ☒ B Systemic lupus erythematosus
- ☐ C Dermatomyositis
- ☐ D Sjögren syndrome

ANSWER B

WHY Malar rash sparing the nasolabial folds, painful (unlike the painless aphthous ulcers of Behçet) oral ulcers, nonerosive arthritis, positive ANA, and anti-dsDNA with low complement are classic features of systemic lupus erythematosus. Anti-dsDNA and low complement correlate with disease activity, particularly lupus nephritis. Rheumatoid arthritis typically presents with erosive symmetric polyarthritis and positive rheumatoid factor or anti-CCP. Dermatomyositis features heliotrope rash and proximal muscle weakness. Sjögren syndrome is characterized by sicca symptoms.

QUESTION 6

SINGLE CHOICE

A 7-year-old boy has tall stature, long limbs, pectus excavatum, and ectopia lentis. His father had a similar body habitus and died suddenly at age 32. Which of the following is the most likely underlying genetic abnormality?

- ☒ **A** Autosomal dominant mutation in the fibrillin-1 gene
- ☐ **B** Autosomal recessive mutation in the elastin gene
- ☐ **C** Trinucleotide repeat expansion in the FMR1 gene
- ☐ **D** Mitochondrial DNA point mutation

ANSWER A

WHY Marfan syndrome is caused by an autosomal dominant mutation in FBN1, which encodes fibrillin-1, a connective tissue protein. Classic features include tall stature, arachnodactyly, pectus deformities, scoliosis, ectopia lentis, and aortic root dilation with risk of aortic dissection. The father's sudden death likely reflects aortic dissection or rupture. The other choices do not match this phenotype: ELN mutations cause cutis laxa or supravalvular aortic stenosis; FMR1 expansions cause fragile X syndrome; mitochondrial mutations cause a separate group of disorders with maternal inheritance.

QUESTION 7

SINGLE CHOICE

A 47-year-old man with a history of alcohol use disorder presents with jaundice, ascites, and spider angiomas. His serum albumin is 2.4 g/dL, total bilirubin is 6.2 mg/dL, and INR is 2.4. Which of the following is the most appropriate next step in management?

- ☐ A Perform endoscopic retrograde cholangiopancreatography
- ☒ B Begin a treatment plan including alcohol cessation counseling, lactulose, and consider referral for liver transplantation evaluation
- ☐ C Administer high-dose corticosteroids
- ☐ D Schedule elective cholecystectomy

ANSWER B

WHY This patient has decompensated cirrhosis, likely alcohol-related, with portal hypertension and synthetic dysfunction. Management requires comprehensive supportive care: alcohol cessation is the single most important intervention to slow disease progression; lactulose is indicated for hepatic encephalopathy; beta-blockers or endoscopic variceal surveillance may be added; and liver transplantation evaluation is appropriate given decompensation. ERCP is not indicated without evidence of biliary obstruction. Corticosteroids are used for severe alcoholic hepatitis with Maddrey's discriminant function ≥ 32 but are not the next step here without that assessment. Cholecystectomy has no role in this presentation.

QUESTION 8

SINGLE CHOICE

A 4-week-old infant presents with poor feeding, tachypnea, and hepatomegaly. Examination reveals a holosystolic murmur at the left lower sternal border. Echocardiography demonstrates a defect in the membranous interventricular septum with left-to-right shunting. Which of the following is the most likely natural history of this lesion if untreated?

- ☒ **A** Spontaneous closure within the first 2 years of life in the majority of small lesions
- ☐ **B** Progressive cyanosis beginning at birth
- ☐ **C** Conversion to Eisenmenger syndrome within the first month
- ☐ **D** Immediate heart failure at presentation in all patients

ANSWER A

WHY Membranous ventricular septal defects are the most common type of VSD and small- to moderate-sized defects frequently close spontaneously, most often during the first 2 years of life. Eisenmenger syndrome develops only with large, untreated defects over years to decades, not within the first month. Cyanosis is not a feature of a left-to-right shunt. Although large VSDs can cause heart failure in infancy, this is not universal and depends on size and shunt volume.

QUESTION 9

MULTIPLE CHOICE

A 29-year-old woman at 32 weeks of gestation is diagnosed with severe preeclampsia. Which of the following are appropriate components of initial management? (Choose two.)

- ☒ **A** Magnesium sulfate for seizure prophylaxis
- ☐ **B** Immediate induction of labor regardless of gestational age
- ☒ **C** Antihypertensive therapy to lower severe-range blood pressure
- ☐ **D** Antenatal corticosteroids for fetal lung maturation if delivery is anticipated within 7 days

ANSWER A • C

WHY Magnesium sulfate is indicated for seizure prophylaxis in severe preeclampsia. Severe-range blood pressures (systolic ≥ 160 or diastolic ≥ 110) should be lowered with intravenous antihypertensives such as labetalol or hydralazine. Antenatal corticosteroids are administered before 34 weeks of gestation when delivery within 7 days is anticipated, so this is also appropriate. Immediate induction of labor at 32 weeks is not universally required; expectant management may be considered at some institutions in stable patients, but delivery is definitive treatment.