

Section 1

CASE #1 Patient

55-year-old male

Presentation

He comes into your clinic for his annual physical examination. As you review his file you notice his primary health concern is hyperlipidemia.

Question #1

For which of the following is cholesterol an important precursor?

- a. Bile acids
- b. Steroid hormones
- c. Vitamin D
- d. All of the above

Question #2

Which of the following is the rate-limiting enzyme involved in cholesterol synthesis?

- a. Carnitine Acyl transferase
- b. Acetyl CoA carboxylase
- c. HMG CoA reductase
- d. HMG CoA synthase

Question #3

Which of the following is the rate-limiting enzyme involved in steroid synthesis?

- a. HMG CoA reductase
- b. 20, 22-desmolase
- c. Isocitrate dehydrogenase
- d. Glucose-6-phosphate dehydrogenase

Question #4

Which of the following are considered to be essential fatty acids?

- a. Linoleic acid and alpha-linolenic acid
- b. Linolenic acid and arachidonic acid
- c. Arachidonic acid and linoleic acid
- d. All of the above

CASE #2

Patient

31-year-old female

Presentation

Your 16-week pregnant patient presents with a headache and rash. She says it started with malaise, a fever, and then 3 days ago she developed a pruritic rash. The rash first appeared on her face then spread to her arms and trunk. Upon physical exam you note an oral temperature of 38°C (100.4°F), swollen and tender suboccipital and posterior cervical lymph nodes, and an erythematous maculopapular rash along her chest and arms. Antibody testing confirms your diagnosis of rubella.

Question #1

Which of the following cannot cross the placenta and lead to serious neonatal infections?

- a. Rubella
- b. Cytomegalovirus
- c. Toxoplasmosis
- d. Hepatitis B

Question #2

What pathognomonic sign differentiates measles from rubella?

- a. Parotitis
- b. Slapped-cheek rash
- c. Strawberry tongue
- d. Koplik's spots

Question #3

Which of these fetal structures contributes to the formation of both the placenta and the urinary bladder?

- a. Allantois
- b. Decidua basalis
- c. Decidua capsularis
- d. Endoderm

Question #4

Immature B cells express what on their surface?

- a. IgA
- b. IgG
- c. IgD
- d. IgM

CASE #3

Patient

41-year-old male

Presentation

He presents to your clinic for his annual physical exam. He informs you that he recently had a kidney transplant, however it was not successful, and he faced transplant rejection.

Question #1

Transplant rejection is classified as a _____ hypersensitivity reaction.

- a. Type I
- b. Type II
- c. Type III
- d. Type IV

Question #2

Which of the following hormones increases sodium reabsorption in the collecting tubules and duct?

- a. Aldosterone
- b. Atrial natriuretic peptide
- c. Antidiuretic hormone
- d. All of the above

Question #3

Which of the following correctly explains the rate at which the kidneys filter substances?

- a. Filtration = glomerular filtration rate x plasma concentration
- b. Filtration = Glomerular filtration rate + plasma concentration
- c. Filtration is solely based on the glomerular filtration rate
- d. Filtration is solely based on plasma concentration

Question #4

What cell type is predominate within the mucosal lining of the urethra?

- a. Simple cuboidal epithelium
- b. Pseudostratified columnar epithelium
- c. Simple squamous epithelium
- d. Simple columnar epithelium

CASE #4**Patient**

2-year-old female