

USMLE-STEP-1^{Q&As}

United States Medical Licensing Step 1

Pass USMLE USMLE-STEP-1 Exam with 100% Guarantee

Free Download Real Questions & Answers **PDF** and **VCE** file from:

<https://www.pass2lead.com/usmle-step-1.html>

100% Passing Guarantee
100% Money Back Assurance

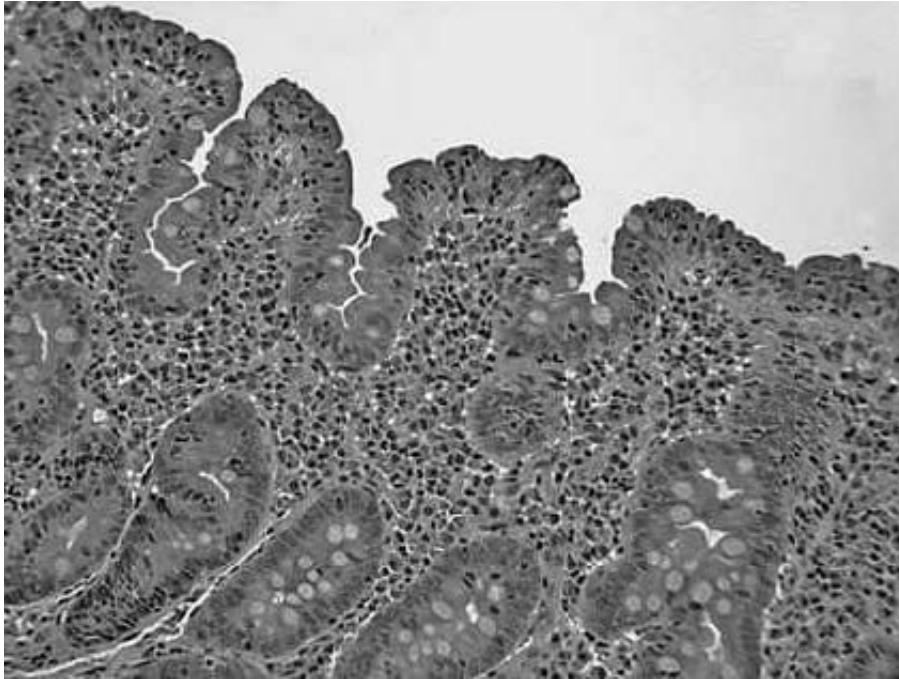
Following Questions and Answers are all new published by USMLE
Official Exam Center

- ⚙️ **Instant Download** After Purchase
- ⚙️ **100% Money Back** Guarantee
- ⚙️ **365 Days** Free Update
- ⚙️ **800,000+** Satisfied Customers



QUESTION 1

A 6-year-old child presents with diarrhea, malabsorption, and steatorrhea. A photomicrograph from a small intestinal mucosal biopsy is displayed in below figure. An appropriate treatment would be which of the following?



- A. alpha-interferon therapy
- B. antineoplastic drugs
- C. initiation of a gluten-free diet
- D. referral to hospice for supportive care
- E. surgical resection of a segment of small Bowel

Correct Answer: C

Section: Pathology and Path physiology The child has celiac disease, a disorder resulting from a hypersensitivity reaction to gluten in the diet. Withdrawal of gluten from the diet is usually curative. Clinically, there is diarrhea, malabsorption, and steatorrhea. Histologically, there is villous atrophy of the small intestinal mucosa. A referral to hospice for supportive care (choice D) is unlikely to be necessary; more than 95% of patients respond to the removal of gluten from their diet. Recalcitrant cases are rarely life threatening and may be successfully treated with various forms of hyperalimentation that bypass the small intestine. Because the disease is usually cured by dietary measures, the use of alpha-interferon therapy (choice A), antineoplastic drugs (choice B), and surgical resection of the small intestine (choice E) are not appropriate treatment options.

QUESTION 2

Ahemagglutination (HA) assay was performed with influenza virus. A fixed number of chicken red blood cells were mixed with increasing dilutions of the influenza virus. The results of the assay are shown in below figure. Which of the following represents the HA titer of the virus?



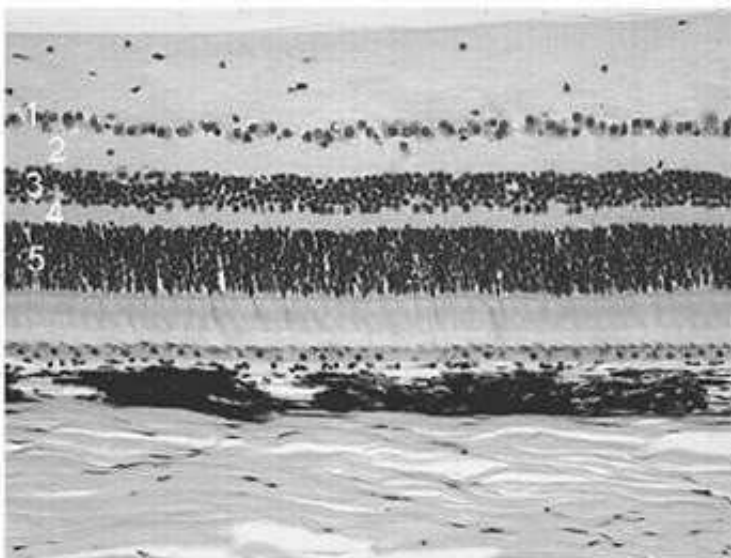
- A. 20
- B. 40
- C. 80
- D. 160
- E. 320

Correct Answer: C

Section: Microbiology/Immunology The ability of certain viruses, such as influenza, mumps, and parainfluenza viruses, to agglutinate red blood cells is used to diagnose these viruses. In general, chicken or human type O red blood cells are employed for the identification of influenza and other viruses. Red blood cells have receptors for the surface component of the influenza virus called hemagglutinin. This hemagglutinin is a glycoprotein. In an HA assay, a fixed number of red blood cells is mixed with increasing dilutions of the influenza virus. Following incubation at 4°C for 2 hours, the tubes containing the red blood cells and the virus are examined for HA. Cells agglutinated by the virus form a lattice that covers the entire bottom of the test tube (virus dilutions 1:20; 1:40; 1:80). The HA titer of the virus is the highest dilution of virus that forms a lattice. In this case, the HA titer is 1:80. Unagglutinated cells form a dark bottom (virus dilutions 1:160; 1:320) (choices D and E).

QUESTION 3

Retinitis pigmentosa is a hereditary disorder, which affects the photoreceptors (the rods and the cones) in the retina. These photoreceptors are located in which of the numbered layers in Figure below



- A. 1

B. 2

C. 3

D. 4

E. 5

Correct Answer: E

Section: Anatomy The retina contains three layers of cells. They are, from top to bottom, the ganglion cells (choice A), the bipolar cells (choice C), and the photoreceptor cells (rods and cones, choice E). The internal plexiform layer (choice B) contains the synapses between the bipolar cells and the ganglion cells. The external plexiform layer (choice D) contains the synapses between the photoreceptors and the bipolar cells. Remember that light enters from the top and traverses all the layers to reach the photoreceptors in the bottom layer.

QUESTION 4

An adult male becomes hypotensive during surgery because of blood loss. Intravenous administration of 500 ml of which of the following solutions will have the greatest effect in restoring blood volume, and thus blood pressure to normal?

A. blood plasma

B. distilled water

C. hypoosmotic NaCl

D. isotonic dextrose solution

E. isotonic saline solution

Correct Answer: A

Section: Physiology Intravenous solutions are distributed in the various body fluid compartments based on osmolality and their ability to penetrate the vascular wall and the cell membrane. The proteins in blood plasma will remain within the vascular compartment because of their low permeability across the vessel wall. Thus, 500 mL of blood plasma will remain in the vascular compartment. Water (choice B) passes across the cell membrane and the vascular wall easily. Hence distilled water will distribute itself between cellular and extracellular spaces, meaning only a small portion will actually contribute to blood volume, the other choices (C, D, and E) cross the vascular barrier and distribute partially to the extravascular space and thus are less effective intravascular volume expanders.

QUESTION 5

Which of the following statements best describes interferon's suspected mode of action in producing resistance to viral infection?

A. It alters the permeability of the cell membrane so that viruses cannot enter the cell.

B. It stimulates a cell-mediated immunity.

C. It stimulates humoral immunity.

D. Its action is related to the synthesis of a protein that inhibits mRNA function.

E. Its direct antiviral action is related to the suppression of messenger RNA formation.

Correct Answer: D

Section: Microbiology/Immunology Interferons are produced by most nucleated cells in the body, and inhibit the translation of viral proteins. There are three major types of interferons, that is, alpha, beta, and gamma. Interferons are active against many viruses and are not specific. Virus infection in one cell induces interferon production which moves to an adjacent, uninfected cell and causes an antiviral protein (AVP) to be produced by the second cell. This AVP inhibits viral mRNA activity and thereby inhibits viral protein production. Interferons do not destroy viruses, but probably result in fewer virions that need to be eliminated by the host's immune system. Interferons do not affect host cell membranes (choice A) or directly suppress mRNA function (choice E). Interferons do not directly stimulate either cellular (choice B) or humoral (choice C) immunity to enhance an antiviral effect.

[Latest USMLE-STEP-1
Dumps](#)

[USMLE-STEP-1 PDF
Dumps](#)

[USMLE-STEP-1 Practice
Test](#)