March 2021: Kaplan MCAT stumpers put premeds to the test

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If you're preparing for the Medical College Admission Test (MCAT), you will want to consult the experts. These selections from Kaplan’s MCAT Question of the Day series can help you sharpen your skills as you prepare to begin your potential journey into medical training.

The questions below come from three of the four MCAT sections—biological and biochemical foundations of living systems; chemical and physical foundations of biological systems; and psychological, social, and biological foundations of behavior. A fourth section, critical analysis and reasoning skills (commonly referred to as CARS), is based largely on inference. Medicine can be a career that is both challenging and highly rewarding but figuring out a medical school's prerequisites and navigating the application process can be a challenge unto itself. For students preparing for medical school, the AMA premed glossary guide has the answers to frequently asked questions.

For those already in medical school, the AMA selected Kaplan as a preferred provider to support you in reaching your goal of passing the USMLE® or COMLEX-USA®. AMA members can save 30% on access to additional study resources, such as Kaplan's Qbank and High-yield courses.

Section: Biological and biochemical foundations of living systems

Question: How do chylomicrons and VLDLs differ?

A. Chylomicrons contain apoproteins, VLDLs do not.
B. Chylomicrons are synthesized in the intestine, VLDLs are synthesized in the liver.
C. Chylomicrons transport triacylglycerol, VLDLs transport cholesterol.

D. VLDLs are another term for chylomicron remnants; they differ in age.

The correct answer is B.

**Kaplan explains why:** Chylomicrons and VLDLs are very similar. Both contain apolipoproteins and primarily transport triacylglycerol, eliminating choices A and C. The only major difference between them is the tissue of origin. Chylomicrons transport dietary triacylglycerol and originate in the small intestine, while VLDLs transport newly synthesized triacylglycerol and originate in the liver.

**Section: Chemical and physical foundations of biological systems**

**Question:** An ?-helix is most likely to be held together by:
A. Disulfide bonds.
B. Hydrophobic effects.
C. Hydrogen bonds.
D. Ion attractions between side chains.

The correct answer is C.

Kaplan explains why: The ?-helix is held together primarily by hydrogen bonds between the carboxyl groups and amino groups of amino acids. Disulfide bridges, choice A, and hydrophobic effects, choice B, are primarily involved in tertiary structures, not secondary. Even if they were charged, the side chains of amino acids are too far apart to participate in strong interactions in secondary structure.
Section: Psychological, social and biological foundations of behavior

Question: Which of the following neurotransmitters is associated with both schizophrenia and Parkinson’s disease?

A. GABA.
B. Serotonin.
C. Dopamine.
D. Enkephalins.

The correct answer is C.

Kaplan explains why: Schizophrenia is associated with high levels of dopamine, or high sensitivity to dopamine. Parkinson’s disease is associated with destruction of the dopaminergic neurons in the basal ganglia.