

June 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.

Biological and biochemical foundations of living systems

Question: Why is the β -anomer of d-glucose less likely to form than the α -anomer?

- A. The β -anomer is preferred for metabolism.
- B. The β -anomer undergoes less electron repulsion.
- C. The β -anomer is the more stable anomer.

D. The β -anomer forms more in L-glucose.

The correct answer is B.

Kaplan explains why: The hydroxyl group on the anomeric carbon of the β -anomer is equatorial, thereby creating less steric hindrance than the α -anomer, which has the hydroxyl group of the anomeric carbon in axial position.

Chemical and physical foundations of biological systems

Question: Some enzymes require the presence of a nonprotein molecule to behave catalytically. An enzyme devoid of this molecule is called:

- A. A holoenzyme.
- B. An apoenzyme.
- C. A coenzyme.
- D. A zymoenzyme.

The correct answer is B.

Kaplan explains why: An enzyme devoid of its necessary cofactor is called an apenzyme and is catalytically inactive.

Psychological, social and biological foundations of behavior

Question: A researcher uses a partial-report procedure after presenting participants with an array of nine numbers for a fraction of a second. Which of the following is the most likely result of this procedure?

- A.** The participant will be able to recall any of the rows or columns in great detail but only immediately after presentation.
- B.** The participant will only be able to recall the first few numbers in the array due to the serial position effect.
- C.** The participant will be able to recall approximately seven of the numbers for a few seconds following presentation of the stimulus.
- D.** The participant will not be able to recall any of the numbers verbally, but will be able to draw the full array under hypnosis.

The correct answer is A.

Kaplan explains why: Partial-report procedures, in which the individual is asked to recall a specific portion of the stimulus, are incredibly accurate, but only for a very brief time. This is a method of studying sensory (specifically, iconic) memory. Both the serial position effect, choice B, and the 7 ± 2 rule, choice C, are characteristics of short-term memory.