

MCAT Practice Test Questions and Answers

1. Which of the following best describes the role of DNA polymerase III in prokaryotic DNA replication?

- A) It synthesizes RNA primers for DNA synthesis
- B) It synthesizes the leading strand continuously and the lagging strand discontinuously
- C) It removes RNA primers and fills in the gaps with DNA
- D) It unwinds the DNA double helix during replication

2. A researcher measures the pH of a solution and finds it to be 3.5. What is the concentration of hydroxide ions [OH⁻] in this solution?

- A) 3.16×10^{-11} M
- B) 3.16×10^{-10} M
- C) 3.16×10^{-4} M
- D) $10^{-3.5}$ M

3. According to Piaget's theory of cognitive development, during which stage do children develop the ability to think logically about abstract concepts?

- A) Sensorimotor stage
- B) Preoperational stage
- C) Concrete operational stage
- D) Formal operational stage

4. A ball is thrown horizontally from a height of 20 meters with an initial velocity of 15 m/s. Assuming no air resistance and $g = 10 \text{ m/s}^2$, how long does it take for the ball to hit the ground?

- A) 1.5 seconds
- B) 2.0 seconds
- C) 2.5 seconds
- D) 3.0 seconds

Answers: 1-B 2-A 3-D 4-B

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