LAVS Essay Midterm by C. Kohn, Waterford WI

Name: Hour Date: Score: + ✓ -

**Question 1:** A farmer has a cow with a serious case of mastitis. 1) He wants to know whether or not he should give the cow a shot of antibiotics. What do you tell him? How would you decide whether or not an animal should receive antibiotics in order to improve their health and prevent antibiotic resistance? Be sure to address gram negative vs. gram positive bacteria, and the causes of antibiotic resistance.

2) Next he asks how antibiotics work. What do you tell him?

3) Finally he is wondering if he could take antibiotics for his cold? Will that help? Explain.

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**Question 2:** Imagine a horse acquired a serious, gram-negative infection. 1) Explain how an animal could die from a serious infection by describing how it would progress from bacteremia to sepsis to septic shock.

2) Then explain how septic shocks leads to death by addressing the inflammatory response and its role in the shut-down of the circulatory system, the respiratory system, and ultimately the rest of the body.

Finally, 3) explain how the fact that this is a gram-negative bacterial infection makes it more likely that the pathogen will cause septic shock compared to a gram-positive infection by describing how these two kinds of bacteria are different in both their cellular structure and methods of affecting the host.