Health & Disease Midterm Unit Objectives by C Kohn

Name: Hour Date:

By the end of this unit, students will be able to…

* Describe what it means for an animal to be ‘healthy’.
* Determine the difference between an infectious and a noninfectious disease.
* Determine the difference between a contagious and a non-contagious disease.
* Define: disease, pathogen, host, vector, virulence, environment.
* Summarize how a host’s defense mechanisms prevent a disease from occurring and why these mechanisms sometimes break down.
* Identify and explain the parts of a disease triangle and how they affect disease transmission.
* Summarize the difference between resistance and immunity.
* Summarize the difference between active and passive immunity as well as natural and artificial active immunity.
* Explain how antigens and antibodies interact in order to create immunity in an organism.
* Summarize how herd immunity works and how it affects the health of a group of organisms.
* Define and explain the differences between each of the following:
* a. Pandemic b. Endemic c. Epidemic d. Zoonotic
* Identify and categorize each of the following by the unique characteristics and identifying traits:
  + a. Bacteria b. Viruses c. Fungi d. Protozoa e. Helminth
* Define a prion and explain the characteristics that make this class of pathogens unique.
* Compare and contrast prokaryotic and eukaryotic organisms.
* Summarize how to classify bacteria, including by shape, aerobic/anaerobic, and by gram stain.
* Compare and contrast the differences between gram negative and gram positive bacteria, particularly in regards to cell membranes and cell walls, susceptibility to antibiotics, and endotoxins vs. exotoxins.
* Compare and contrast the properties of endotoxins vs. those of exotoxins.
* Summarize the properties of peptidoglycan and relate how these properties affect the susceptibility of some bacteria to antibiotics.
* Summarize the properties and characteristics of the membrane outside of the cell wall of some bacteria in regards to susceptibility to antibiotics, infection of a host, and resistance to host defenses.
* Summarize how a bacterial infection can lead to the death of a host via sepsis and septic shock.
* Explain why a virus is not considered to be a living species.
* Summarize how viral reproduction occurs.
* Compare and contrast a retrovirus to a standard virus.
* Identify the kingdom of life in which fungi are classified.
* Summarize the key traits of protozoa.
* Explain how the symptoms diseases caused by helminths differ from many other pathogens.
* Outline the method by which a prion causes a disease and identify practices that increase the likelihood of a prion infection.
* Describe the existing treatments and/or cures for a prion disease.
* Summarize the mechanisms and strategies that comprise each of the following: a. continual forms of nonspecific immunity; b. selective forms of nonspecific immunity; c. specific immunity.
* Compare and contrast the properties of the three kinds of continual nonspecific immunity, including: a. mechanical; b. physical; c. chemical.
* Summarize the identifying characteristics of all forms of selective nonspecific immunity, including: a. Phagocytosis b. Inflammation c. Pyrexia d. Protective proteins e. NK Cells
* Summarize the function of interferons and complement proteins.
* Summarize how specific immunity differs from all forms of nonspecific immunity.
* Explain how the body uses antigens and antibodies to fight a disease.
* Identify the key traits that comprise each of the following:  
   a. Genetic specific immunity b. Acquired specific immunity c. Nonspecific immunity
* Summarize the difference between active acquired immunity and passive acquired immunity.
* Explain how a vaccination works to reduce the rate of contraction of a disease.
* Identify the key characteristics of each of the following kinds of vaccinations:
  + a. Live b. Killed/Inactivated c. Toxoid d. Biosynthetic
* Define colostrum, and explain why it is a valuable part of a production animal operation.
* Summarize why adult vaccination is necessary for herd health using examples.
* Define VCPR and explain why it is necessary for an animal operation.
* Compare and contrast the function and properties of antibiotics and vaccines.
* Describe the most common methods by which an antibiotic destroys bacteria.
* Describe the most common bacterial mechanisms of antibiotic resistance.
* Summarize the difference between Inherent (natural) Bacterial Resistance and Acquired Resistance.