Benjamin N. Cardozo Microbe Mission

- True/False Questions are worth 1 point each
- Multiple Choice Questions/Matching Questions are worth 2 points each
- Short Answer Questions are worth 3 points each

1. What type of microscope is this (3)? __________________________
2. Which number corresponds to the coarse adjustment knob? (2) ________________
3. Which number corresponds to the diaphragm? (2) ________________
4. Write the number that corresponds to the part that you would use to fine-tune the focus of your specimen and name it? (2) __________________________
5. Lichens are a life form that is a symbiotic partnership of two separate organisms, (2)
   a. Virus and protozoan
   b. Bacterium and fungi
   c. Algae and virus
   d. Fungi and Algae
6. Which conditions are most suitable for microbial growth? (2)
   a. Organic food (proteins, fats, carbohydrates) and moisture
b. Acidic pH and low temperature
   c. Dehydration and high temperature
   d. Heat and basic pH

7. What is a group of spherical bacteria that occur in a chain called (2)
   a. Streptococci
   b. Diplococci
   c. Staphylococci
   d. Sarcina

8. Which of the following does not have a eukaryotic cell? (2)
   a. Algae
   b. Bacteria
   c. Fungi
   d. Protozoa

9. Which two organelles have DNA similar to that of a prokaryotic cell and can reproduce independent of the rest of the eukaryotic cell? (2)
   a. Cilia and endoplasmic reticulum
   b. Ribosomes and Golgi Apparatus
   c. Lysosomes and Mitochondria
   d. Mitochondria and Chloroplasts

10. Which disease is not associated with prions? (2)
    a. Bovine Spongiform Encephalopathy or Mad Cow Disease
    b. Scrapie
    c. Hodgkin’s lymphoma
    d. Kuru

11. List five main types of microbes(3)

   ____________________________________________________________

12. What is the main function of the red blood cell? (2)
    a. Ingesting pathogens
    b. Transporting oxygen
    c. Transmitting messages
    d. Produce enzymes and hormones

13. Which answer choice describes the use of microbes to remove pollutants from the environment? (2)

   ____________________________________________________________
a. Bioremediation  
b. Biodegradation  
c. Biotransformation  
d. Biocatalysis

Write whether each statement is true or false.
14. Viruses are considered living organisms and are found wherever there is a cell to invade ____ (1)
15. Microbes are present in every known ecosystem ____ (1)
16. Archaea serve as consumers at the lower ends of the food web ____ (1)
17. Aids is the disease of the human immune system caused by the HIV virus ____ (1)

Match the bacteria to its shape (10 total):
18. Bacillus ______
19. Spirilium ______
20. Coccus ______
21. Vibrio ______
22. Cocco-bacillus ______

a. comma-shaped  
b. ball-shaped  
c. spiral-shaped  
d. Ovoid-shaped  
e. rod-shaped

23. Which of the following is NOT a viral disease? (2)
   a. AIDS  
   b. Measles  
   c. Anthrax  
   d. Rubella

24. Which answer choice best describes a parasitic worm? (2)
   a. Have complex life cycles that involve substantial time outside their human hosts  
   b. Produce algal blooms and toxins that can be taken in by filter feeders  
   c. Killed by antifungal medications in the form of topical agents or pills  
   d. Prevented by vaccination or use of antibiotics

25. Which of the following is not a benefit that microbes provide? (2)
   a. Oil spill cleanup  
   b. Biofertilizers  
   c. Mining  
   d. Greenhouse Gas cleanup

26. What fuels can potentially be made from algae? (2)
a. Gasoline
b. Ethanol
c. Biodiesel
d. All of the above

27. (2)

What is the image pictured above of, and what process takes place in it?

a. Mitochondria, ATP production
b. Chloroplast, Photosynthesis
c. Ribosomes, protein production
d. Golgi Apparatus, packaging

28. What is the scientific term for the shape of these bacteria? (3) ______________

29. Is this colony gram-positive, gram-negative, or neither? (3) ______________

30. What microscope probably took this image? (3) ______________

31. Name two possible diseases/infections that this group of bacteria could cause (3)

________________________  __________________________
32. What type of microbe growth does the graph above show? (2)
   a. Continuous culture
   b. Open culture
   c. Semi-continuous culture
   d. Closed culture
33. Name what phase “A” is __________________ (2)
34. Name what phase “B” is __________________ (2)
35. Name what phase “C” is __________________ (2)
36. Name what phase “D” is __________________ (2)