Microbiology for Nursing
Exam #2 Review

Questions

1. What is a virus?

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2. What types of genetic material are found in viruses?

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3A. What is a capsid, and what type of organism is it on?

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3B. What is an envelope, and what type of organism is it on?

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3C. What are attachment proteins, and what do they do?

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4. What is a complex virus? What parts does it have?

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5A. What is a retro virus?

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5B. What is a bacteriophage?

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6. Explain the difference between the lytic and lysogenic life cycles in viruses.

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7A. What is a prophage?

7B. What do repressor genes do?

8. What is lysogenic conversion and what can it do to bacteria?

9A. What is transduction?

9B. How is generalized transduction different from specialized transduction?

10 What are the four major modes of viral transmission to animals?

A.

B.

C.

D.

11A. How do enveloped viruses enter into animal cells?

11B. How do naked viruses enter into animal cells?

12A. Explain how animal viruses leave cells?

12B. What can occur during this process that will change the viruses capabilities?

13. What is transcapsidation and why can it be important in causing disease? (i.e. how can it change the genetics of viruses)

14. How do viruses cause tumors?

15. What are prions and how do they affect organisms?

16. Name five major viral diseases.

17A. How are plaque assays used to determine viral numbers?

17B. How are hemagglutination used to determine viral numbers?

18. Name five characteristics that are used to identify viruses?

19. What are the characteristics of the kingdom Monera?

20. How are the Archaebacteria different from the Eubacteria?
Archaebacteria:

Eubacteria:

21. Contrast the Archaebacteria groups: Methanogens, Thermoacidophiles, and Halophiles.
Methanogens:

Thermoacidophiles:

Halophiles:

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22A. What is a plasmid?

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22B. What is conjugation?

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23A. What three basic shapes are found in bacteria?

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23B. What are prosthecae?

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23C. What is a capsule and what type of organism is it found on?

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24. What are the strep and staph arrangements of bacteria?
Strep:

_____
Staph:

_____

25A. Describe/diagram the cell walls in a gram- bacteria?

25B. Describe/diagram the cell walls in a gram+ bacteria?

25C. How does the wall structure in gram- bacteria protect them from certain antibiotics like pencillin?

26A. What is a toxiod?

26B. What is an A-B Toxin?

26C. What is a superantigen?

26D. Describe exotoxins, what type of cells (gram+/-) produce them, where do they come from, can they become a toxoid?

26E. Describe endotoxins, what type of cells (gram+/-) produce them, where do they come from, can they become a toxoid?

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27A. What are pili?
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27B. What is the function of pili?
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27C. How are they involved in gene exahange?
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28. How are the prokaryotic (bacteria) flagella different from the eukaryotic flagella?
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29A. What are the cyanobacteria?
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29B. How are cyanobacteria different from most other bacteria?
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30. How do bacteria reproduce?

31. What are endospores and how long do they last?

32A. What are antibiotics?

32B. What has caused many bacteria to become antibiotic resistant (two reasons)?

33. The bacteria Rhizobium lives in association with the roots of certain legumes. What does it do?

34. Name five major bacterial diseases.

35. What five major characteristics are used to identify most bacteria?

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36. Explain the difference between the different types of stains,
simple stains, differential stains, special stains, and negative stains.

Simple stains:

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Differential stains:

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Special stains:

_____

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Negative stains:

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37A. Describe/diagram how a pure culture of bacteria can be obtained using the streak method?

37B. Describe/diagram how a pure culture of bacteria can be obtained using the serial dilution method?

38. Explain the different growth phases of bacteria (i.e., log phase, stationary phase and death phase.

Log:

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_____

Stationary:

_____
_____

Death:

_____
_____

39. Explain 3 ways the quantity of bacteria in a culture can be measured?

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_____
_____
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40A. Fill in the table describing the characteristics of each?

Name	Carbon Source	Energy Source
Photoautotroph		
Photoheterotroph		
Chemoautotroph Chemolithoautotroph		

Chemoheterotroph		

40B. What would be the name of an organism that uses CO_2 for it's carbon source and light for it's energy source?

41. Contrast the following types of media: synthetic, complex, enrichment, selective, and differential?

Complex:

Enrichment:

Selective:

Synthetic:

Differential:

42. What five things should be on a properly labeled bacteria media that is being used?

43. What are the characteristics of the kingdom Protista?

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44 & 45. Fill in the table with the missing information, including the second name:

Name	Motility	Disease	Disease
Pyrrophyta			
Mastigophora			
Ciliospora			
Sporozoans			
Rhizopoda			

46. What is ameboid movement?

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47. What are the characteristics of the kingdom Fungi?

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48. What are yeasts and what problems do they cause?

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49A. What are the characteristics of the divisions Ascomycota and Deutromycota?

Division	Most Hyphae	Dikaryotic stage	Sexual cycle	Sexual type of spores
Ascomycota				
Deutromycota				

49B. What disease do these groups cause?

Division	Disease	Disease
Ascomycota		
Deutromycota		