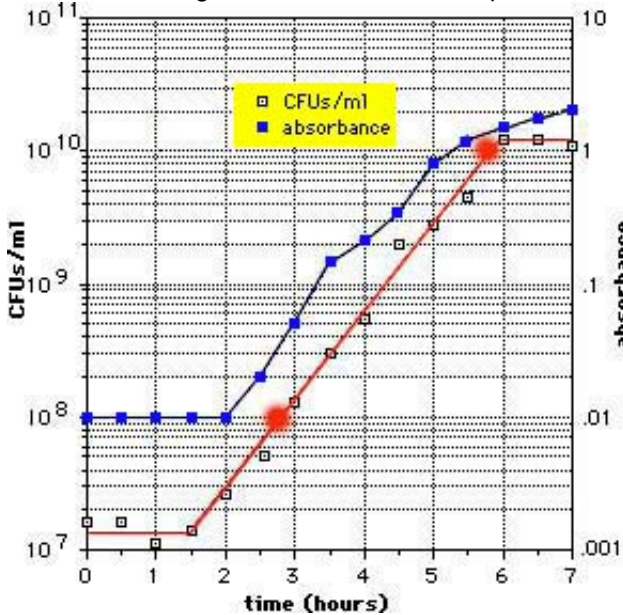


MIAMI DADE COLLEGE-WOLFSON CAMPUS  
 MCB2010 - MICROBIOLOGY  
 Dr. Edwin Ginés-Candelaria  
 EXAM II REVIEW

Name \_\_\_\_\_

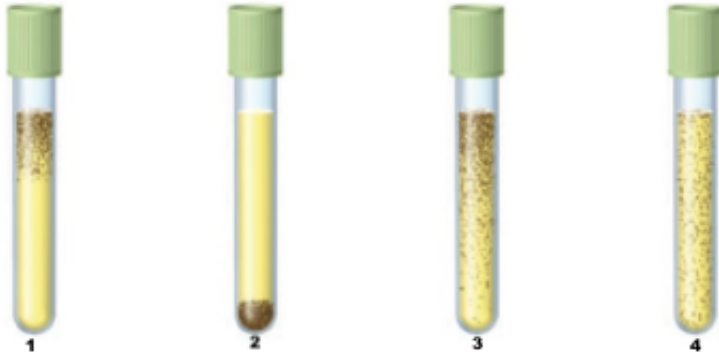
**Instructions:** READ each question CAREFULLY before answering. Then, SELECT the BEST answer and write it on the scantron sheet. Only answers that are written on the scantron sheet will be used for computation of your exam score. Please ensure that you select the appropriate choice before you transfer it to the scantron sheet. For True/False questions, please answer choice "A" if the statement is true, or choice "B" if it is false. Remember that UNDERSTANDING the instructions is an integral part of taking this examination. Each question is worth 4 points. There are 8 extra credit points in this exam. Work at a steady pace and you should have ample time to complete it. **BEST WISHES!**

Use the following information to answer questions 55-56.



55. The culture conditioning or adaptation phase for this bacterial culture takes approximately
- A. 20 minutes
  - B. 30 minutes
  - C. 60 minutes
  - D. 90 minutes
  - E. 180 minutes
56. If a student were to calculate the number of generations from the conditioning or adaptation phase for this culture, it will be
- A. 4 generations
  - B. 0 generations
  - C. 2 generation
  - D. 3 generations
  - E. 5 generations
57. Superoxide dismutase \_\_\_\_\_.
- A. causes hydrogen peroxide to become toxic
  - B. detoxifies superoxide radicals
  - C. neutralizes singlet oxygen
  - D. is missing in aerobes
  - E. is missing in facultative anaerobes
58. Organisms that preferentially may thrive in icy waters are described as \_\_\_\_\_.
- A. barophiles
  - B. thermophiles
  - C. mesophiles
  - D. psychrophiles
  - E. nonophiles

59. Which of the following is most useful in representing population growth on a graph?
- logarithmic reproduction of the growth curve
  - a semilogarithmic graph using a log scale on the  $y$ -axis
  - a semilogarithmic graph using a log scale on the  $x$ -axis
  - an arithmetic graph of the lag phase followed by a logarithmic section for the log, stationary, and death phases
  - none of the above would best represent a population growth curve



Use the figure to answer the following question(s).

60. An obligate aerobe is shown in
- 1
  - 2
  - 3
  - 4
  - cannot be seen in the figure above
61. Microbial growth is measured by what parameter?
- Increased cell size
  - Increased size of cellular components
  - Increase in total number of cells
  - a and c
  - b and c
62. Which of the following statements is true concerning the selection of an antimicrobial agent?
- an ideal antimicrobial agent is stable during storage.
  - an ideal antimicrobial agent is fast acting.
  - ideal microbial agents do not exist.
  - all of the above.
63. The endospores of which organism can be used as a biological indicator of sterilization?
- Bacillus stearothermophilus*
  - Salmonella enterica*
  - Mycobacterium tuberculosis*
  - Staphylococcus aureus*
  - Mycoplasma pneumoniae*
64. A company that manufactures an antimicrobial cleaner for kitchen counters claims that its product is effective when used in a 50% water solution. By what means might scientists best verify this statement?
- disc-diffusion test
  - phenol coefficient
  - use dilution test
  - a and b
  - a and c

65. A sample of *E. coli* has been subjected to heat for a specified time, and 90% of the cells have been destroyed. Which of the following terms describes this event?
- decimal reduction time
  - thermal death point
  - thermal death time
  - generation time
  - none of these
66. Based on what you have learned on antiseptics and disinfectants, which of the following is the least toxic to humans?
- carbolic acid (phenol)
  - glutaraldehyde
  - sodium hypochlorite (the active ingredient in bleach)
  - formalin
  - hydrogen peroxide
67. T F Pasterization achieves sterilization of products such as milk and wine.

Use the following information to answer questions 68-69.

Exposure Time	Phenol Dilution			New Disinfectant Dilution				
	1:100	1:110	1:120	1:60	1:50	1:60	1:70	1:80
5 min	+	+	+	-	+	+	-	-
10 min	+	+	-	-	+	-	-	-

Use the data displayed on the table above to answer the following question(s).

68. A technician was testing a new disinfectant to determine its phenol coefficient and obtained the results displayed in the figure above. What is the phenol coefficient for the new disinfectant?
- 200
  - 0.5
  - 20
  - 0.25
  - cannot be determined
69. Is this disinfectant likely to be a good one?
- yes
  - no
  - maybe
  - cannot be determined
70. Cephalosporins resemble which antibiotic in their mode of action and their structure?
- Penicillin
  - Bacitracin
  - Streptomycin
  - Polymyxin
  - Tetracycline
71. All of the following are side effects of antimicrobial agents except:
- "Superinfections" can occur with new pathogens when defensive capacity of the normal microbiota is destroyed
  - Host toxicity
  - Disruption of the normal microbiota in the host
  - Host allergic reaction
  - Host "superimmunity"

72. The target for quinolones is
- RNA transcription
  - DNA replication
  - Protein synthesis
  - Cell wall synthesis
  - Membrane structure
73. Drugs that act against protein synthesis include \_\_\_\_\_.
- $\beta$ -lactams
  - trimethoprim
  - polymyxin
  - isoniazid
  - aminoglycosides
74. Which of the following statements is false concerning antiviral drugs?
- Macrolide drugs block attachments on the host cell wall and prevent viruses from entering.
  - Drugs that neutralize the acidity of phagolysosomes prevent viral uncoating.
  - Nucleotide analogs can be used to stop microbial replication.
  - Drugs containing protease inhibitors retard viral replication strategy by blocking the production of viral proteins.
75. Which of the following best represents the order of gene transfer in an Hfr X F<sup>-</sup> mating?
- all plasmid genes followed by some or all of the chromosome
  - part of the plasmid followed by the chromosome followed by the rest of the plasmid
  - the chromosome followed by the plasmid
  - part of the chromosome followed by the plasmid followed by the rest of the chromosome
76. Bacteria grown in glucose and lactose do not produce an enzyme that is essential for lactose metabolism. If glucose is omitted from the culture medium, bacteria will produce this enzyme. This is known as:
- Catabolite repression
  - Feedback inhibition
  - Attenuation
  - Enzyme substitution
  - Mutation
77. The Ames test \_\_\_\_\_.
- uses auxotrophs and liver extract to reveal mutagens.
  - is time intensive and costly.
  - involves the isolation of mutant by eliminating wild-type phenotypes with specific media.
  - proves that suspected chemicals are carcinogenic.
  - does none of these.
78. A typical transposable element:
- Transfers R factors between bacteria.
  - Enables the lysogenic cycle of temperate phages.
  - Encodes a variety of bacteriophage proteins.
  - Encodes proteins needed to cut itself in and out of different locations on chromosomes.
  - Confers "competence" on bacteria.
79. The addition of DNase to a mixture of donor and recipient cells will prevent gene transfer via
- DNA transformation
  - chromosome transfer by conjugation
  - plasmid transfer by conjugation
  - generalized transduction
  - specialized transduction
80. Of the following, which is LEAST related to the others?
- transduction
  - conjugation
  - induction
  - transposition
  - transformation

Use the following answers for the following questions. The answers may be used once, more than once, or not at all.

1. transduction
2. transposition
3. translation
4. transformation
5. conjugation

81. DNA is transferred from one bacterium to another by a virus.

A. 1

B. 2

C. 3

D. 4

E. 5