

Diagnostic Microbiology 4th Edition Test Bank.docx
Questions AND Answers WITH Reference

Nursing As A Profession (Prairie State College)

TEST BANK

Chapter 04: Control of Microorganisms

Textbook of Diagnostic Microbiology 4th
Edition

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Mahon: Textbook of Diagnostic Microbiology, 4th Edition

Chapter 04: Control of Microorganisms

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MULTIPLE CHOICE

1. The chemical or physical method that destroys all forms of life is called:
 - a. Sterilization
 - b. Disinfection
 - c. Bacteriostatic
 - d. Bactericidal

ANS: A

Sterilization is the destruction of all forms of life, including bacterial spores. Disinfection is a process that eliminates a defined scope of microorganisms, including, in some cases, spores. Bacteriostatic inhibits the growth of microorganisms. Bactericidal kills bacteria.

REF: page 62 OBJ: Level 1 – Recall

2. Organisms that are the most resistant to heat, chemicals, and radiation are:
 - a. Parasites
 - b. Prions
 - c. Bacteria
 - d. Viruses

ANS: B

Prions are naked pieces of protein, so they are harder to kill than any other organism. Viruses usually contain a nucleic acid, and all the mentioned forms of killing can effectively disrupt their nucleic acid. Bacteria and parasites are complete organisms that are killed by disinfection and sterilization, even in the spore and cyst stages.

REF: page 63 OBJ: Level 1 – Recall

3. After using the phone, the laboratory tech sprayed the receiver with a chemical spray. This process will kill a defined scope of microorganisms. What is this process called?
 - a. Sterilization
 - b. Bacteriostatic

- c. Disinfection
- d. Bactericidal

ANS: C

Sterilization kills all organisms and spores at a site. Bacteriostatic and bactericidal are adjectives that describe the particular action of chemical agents: to inhibit bacterial growth or kill bacteria. Disinfection kills a defined scope of microorganisms.

REF: page 62 OBJ: Level 2 – Interpretation

4. Before performing a phlebotomy, the phlebotomist will clean the area on a patient's arm with a substance before inserting the needle. This substance is called a(n):
- a. Disinfectant
 - b. Sterilizer
 - c. Antiseptic
 - d. Bactericidal

ANS: C

A disinfectant is a chemical agent used to kill microorganisms on an inanimate object. To sterilize is to kill all life; skin will still have organisms growing after wiping. Bactericidal is the process of killing bacteria. An antiseptic is a substance applied to the skin for the purpose of eliminating or reducing the number of bacteria present.

REF: page 62 OBJ: Level 2 – Interpretation

5. All the following factors play a significant role in the selection and implementation of the appropriate method of disinfection EXCEPT:
- a. Temperature
 - b. Contact time
 - c. Biofilms
 - d. Humidity

ANS: D

Temperature, contact time, and biofilms all play a role in selection and implementation of the appropriate method of disinfection. Humidity is not important when attempting to disinfect or kill organisms.

REF: pages 62-63 OBJ: Level 1 – Recall

6. When eliminating organisms from inanimate objects, higher numbers of organisms require longer exposure times because:
- a. All disinfecting agents are not alike and some require shorter times.
 - b. The chemical composition of the disinfecting agent varies.

- c. Disinfecting agents containing carbon tetrachloride require longer times to act.
- d. It takes longer to eliminate 99% of microorganisms.

ANS: D

When there are higher numbers of microorganisms, it takes longer to kill 99% of microorganisms present. Although disinfectants are different, it still takes longer to kill more organisms. The chemical composition of a disinfecting agent may affect the time required to kill microorganisms, but microbial load is a determining factor.

REF: page 63 OBJ: Level 1 – Recall

7. When using disinfectants, it is important to follow the manufacturer's instructions for diluting the product because if it is not diluted properly:
- a. There may not be enough free chemicals to kill the organisms.
 - b. You would be wasting money by using too much disinfectant.
 - c. The resulting solution would not kill mycobacteria.
 - d. The resulting solution would not kill parasites.

ANS: A

The manufacturer tests disinfectants at a particular dilution, and this is the dilution needed for optimum performance of the disinfectant. If the manufacturer's instructions are not followed, optimum effectiveness cannot be guaranteed.

REF: page 63 OBJ: Level 1 – Recall

8. If this is present on a surface to be disinfected, it can shield microorganisms from the disinfectant or inactivate the disinfectant. What is this substance?
- a. Bleach (sodium hypochlorite)
 - b. Organic material
 - c. Hydrochloric acid
 - d. Water

ANS: B

Bleach, hydrochloric acid, and water can counteract another disinfectant, but they cannot shield microorganisms from a disinfectant. Organic matter (e.g., blood, pus) can keep the disinfectant from reaching and killing the microorganism.

REF: page 64 OBJ: Level 1 – Recall

9. When killing microorganisms, you must take all the following into consideration EXCEPT:
- a. A type of microorganism
 - b. Temperature
 - c. Humidity

d. Bioburden

ANS: C

The type of microorganism (bacteria, mycobacteria, parasite, etc.), the temperature, and the bioburden (the number of bacteria) must be taken into consideration when decided how to best kill microorganisms. The humidity plays no role in the killing of microorganisms.

REF: page 64 OBJ: Level 1 – Recall

10. Disinfectants are usually used at this temperature.

a. 50 to 100 C

b. 0 to 10 C

c. 25 to 50 C

d. 20 to 22 C

ANS: D

Disinfectants are usually used at room temperature (20 to 22 C). Too high or too low a temperature can actually inactivate a disinfectant.

REF: page 64 OBJ: Level 1 – Recall