Sample Questions

National Registry of Certified Microbiologists
RM: Food Safety and Quality
SAMPLE QUESTIONS

The sample questions included in this examination guide are actual questions from previous examinations. They have been removed from the question pool. Do not judge the content as indicative of content in current questions, but use these sample questions as templates for the format and design of questions and answers.

1. Which light property does phase-contrast microscopy modify to enable the human eye to observe structures not visible by bright field-microscopy?
   a. Path by 90°
   b. Contrast
   c. Intensity
   d. Wavelength
   
   Corresponds to task #2.

2. To achieve Kohler illumination, the height adjustment of the condenser should be in which position?
   a. At its upper stop
   b. At its lower stop
   c. Halfway between its upper and lower stops
   d. Lowered slightly from its upper stop
   
   Corresponds to task #2.

3. What is a microscope outfitted with excitation, suppression, and heat filters equipped to detect?
   a. Peritrichous flagella
   b. Immunofluorescence
   c. Capsules
   d. Fat soluble granules
   
   Corresponds to task #2.

4. What is the minimum time a laminar hood should be running before it is used?
   a. 2 hours
   b. 24 hours
   c. 15 to 30 minutes
   d. 5 to 10 minutes
   
   Corresponds to task #5.

5. Which quality control procedure is necessary to perform with every batch of media?
   a. Shelf life determination
   b. Endotoxin content
   c. Bacteriostatic/fungistatic tests
   d. Sterility check
   
   Corresponds to task #8.

6. Pyrogallic acid with sodium hydroxide would be added to laboratory media for which of the following functions?
   a. Provide for anaerobic conditions
   b. Provide essential nutrients to the organisms
   c. Alter the pH of the medium
   d. Chelate metallic elements in the medium
   
   Corresponds to task #8.

7. How is Saccharomyces cerevisiae var. ellipsoidous differentiated from Saccharomyces cerevisiae?
   a. Sugar fermentation
   b. Morphology
   c. Ascospore formation
   d. Amino acid requirements
   
   Corresponds to task #12.

8. When isolating motile, oxidative, nonfermenting gram-negative rods, which of the following should one look for in order to separate them from Pseudomonas species?
   a. An oxidative reaction on O/F glucose
   b. Polar pili
   c. The fermentation of dextrose
   d. Peritrichous versus polar flagella
   
   Corresponds to task #14.
9. A gram-negative organism was isolated with the following characteristics: oxidase-positive, motility-positive, growth at 42°C and production of pyocyanin. What organism was isolated?

a. *Escherichia coli*
b. *Pseudomonas cepacia*
c. *Pseudomonas aeruginosa*
d. *Pseudomonas stutzeri*

**Corresponds to task #14.**

10. During serological testing, which of the following could lead to false positive reactions as a result of cross reactivity?

a. Suboptimal proportions of antigens to antibodies
b. Presence of closely related antigens
c. Absence of inactivated complement
d. Hypotonic diluent

**Corresponds to task #14.**

11. A commercial kit used to identify a gram-negative, aerobic, nonfermenting, oxidase-negative bacterium should differentiate which of the following?

a. Genus *Propionibacterium* from *Fusobacterium*
b. Genus *Pseudomonas* from *Acinetobacter*
c. Genus *Fusobacterium* from *Actinomyces*
d. Various *Enterobacteriaceae*

**Corresponds to task #14.**

12. What characteristic best describes the food-poisoning toxins produced by *Staphylococcus aureus*?

a. Exotoxins
b. Lethal poisons
c. Endotoxins
d. Heat labile

**Corresponds to task #15.**

13. What is the greatest drawback in the use of UV-visible spectrophotometry in quantitative analysis?

a. Inadequate linearity
b. Inadequate sensitivity
c. Inadequate specificity
d. Excessive noise levels

**Corresponds to task #17.**

14. A 24-hour culture of *Bacillus subtilis* contains $2.4 \times 10^6$ CFU/ml. Sequential dilutions of 1:10, 1:5, 1:100, and 1:3 were made from the original samples. What is the final concentration?

a. $4.8 \times 10^3$ CFU/ml
b. $1.6 \times 10^3$ CFU/ml
c. $8.0 \times 10^2$ CFU/ml
d. $1.6 \times 10^2$ CFU/ml

**Corresponds to task #17.**

15. Which of the following refers to the time required at a given temperature to destroy 90% of a certain bacterial population?

a. Thermal death time
b. $D$ value
c. $F$ value
d. $Z$ value

**Corresponds to task #18.**

16. What is an appropriate test method for the detection of antigens by precipitation??

a. The agar diffusion method
b. High-performance liquid chromatography (HPLC)
c. The complement fixation method
d. Polyacrylamide gel electrophoresis (PAGE)

**Corresponds to task #23.**
17. What is the source of photon emission in immunofluorescent detection?

   a. Antigens  
   b. Antibodies  
   c. Antigen-antibody complex  
   d. Fluorescent dye.  
   Corresponds to task #23.

18. Which of the following should be added to a commercial identification kit in order to create anaerobic conditions?

   a. Water  
   b. Mineral oil  
   c. Plastic wrap  
   d. Sterile cotton plugs  
   Corresponds to task #23.

19. Which of the following best describes the process of disinfection?

   a. The destruction of disease-producing organisms  
   b. The removal of all bacteria  
   c. The killing of all vegetative bacteria  
   d. The destruction of all bacterial spores  
   Corresponds to task #24.

20. What standard is used for comparing the effectiveness of certain disinfectants?

   a. Iodine index  
   b. Phenol coefficient  
   c. Alcohol index  
   d. Hexachlorophene coefficient  
   Corresponds to task #24.

21. When does a laboratory's responsibility for its hazardous waste end?

   a. When the hazardous waste is legally removed from the premises  
   b. When the hazardous waste is diluted and poured down the drain  
   c. When the waste has been mixed with hazardous wastes from another source by another party  
   d. When the waste no longer exists or is recycled  
   Corresponds to task #37.
ANSWERS

1. a 11. b 21. d
2. d 12. a
3. b 13. c
4. c 14. d
5. d 15. b
6. a 16. a
7. b 17. d
8. d 18. b
9. c 19. a
10. c 20. b