Sample Questions
American Board of Medical Microbiology
1. A patient with a history of travel to Somalia presents with an ulcerative lesion on his forearm. Biopsy revealed small, intracellular organisms. Which of the following is an appropriate medium for recovery of the organisms?
   a. Diamond's medium
   b. Fletcher's medium
   c. Novy-MacNeal-Nicolle (NNN) medium
   d. Eagle's minimal essential medium

   Question tests Category 1.1 (Up-to-date practices)

2. According to the College of American Pathologists, which of the following is appropriate for laboratory procedure manuals?
   a. A package insert is an acceptable substitute for a written procedure.
   b. A manufacturer-generated CLIA procedure is not acceptable for use.
   c. Procedure summaries are not acceptable to use at the bench.
   d. Electronic copies of manuals are acceptable as long as backup is available.

   Question tests Category 1.2 (Test protocols)

3. Which parasitologic procedures should be available on a 24-hour basis?
   a. Blood films for *Plasmodium* species
   b. Ova and parasite examination for *Giardia lamblia*
   c. Baermann concentration for *Strongyloides stercoralis*
   d. Scotch tape preparations for *Enterobius vermicularis*

   Question tests Category 1.3 (Test menu)

4. The laboratory asks for your interpretation of a real-time PCR run. The positive control was negative and the negative control was positive. The tech wants to know how to proceed. What should you tell her?
   a. The controls for the run did not display expected results; therefore, the entire run failed and must be repeated.
   b. Report out the negatives: since at least one tube was positive, it demonstrates that amplification took place. Repeat any positives on the next run to ensure there was no contamination.
   c. Report out the positive specimens, since at least one tube was negative and one was positive, demonstrating that amplification took place. Repeat negatives on the next run to make sure they all had mastermix added to them.
   d. Report out all the specimens, since the reagents are expensive, and the negative and positive controls were clearly reversed.

   Question tests Category 1.4 (Quality control)

5. In assessment of blood culture contamination rates, which of the following is generally recognized as the maximum acceptable rate?
   a. 0%
   b. 3%
   c. 10%
   d. 12%

   Question tests Category 1.5 (Quality metrics/indicators)
6. Which of the following blood smears is the best example of a critical value?

a. 

b. 

Images courtesy of Michael Loeffelholz, Univ. Texas Medical Branch

Question tests Category 1.6 (Critical results)
7. A research study was conducted to determine the performance of a new rapid HIV-1 antibody test. The results were compared with a gold standard methodology. Based on the results below, what is the sensitivity of the rapid antibody test?

<table>
<thead>
<tr>
<th>Number of specimens tested by gold standard methodology</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>85</td>
<td>10</td>
</tr>
<tr>
<td>Negative</td>
<td>15</td>
<td>390</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of specimens tested by rapid test</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>85</td>
<td>10</td>
</tr>
<tr>
<td>Negative</td>
<td>15</td>
<td>390</td>
</tr>
</tbody>
</table>

a. 89.5%
b. 97.5%
c. 96.3%
d. 85.0%

8. In a situation where a clinical laboratory scientist and a laboratory technician are performing the same work at different pay scales, review and revision of which of the following are recommended?

a. Detailed job descriptions and performance standards
b. Employee self-evaluation and past performance reviews
c. Employee technical skills and salary scales
d. Educational requirements and available funding

9. Which laboratory design or process would allow the safe disposal of infectious material?

a. Red plastic bags for disposal of needles
b. An exterior door that restricts access to non-employees
c. A Class II Biosafety Cabinet for preparing specimens
d. An autoclave readily available in the laboratory

10. Based on your laboratory's current financial report below, what is your laboratory's contribution margin for this fiscal year?

<table>
<thead>
<tr>
<th>VOLUME</th>
<th>Current Fiscal Year ACTUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient Volume</td>
<td>160,000</td>
</tr>
<tr>
<td>Outpatient Volume</td>
<td>130,000</td>
</tr>
<tr>
<td><strong>Total Volume</strong></td>
<td><strong>290,000</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REVENUE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient Revenue</td>
<td>3,000,000</td>
</tr>
<tr>
<td>Outpatient Revenue</td>
<td>2,500,000</td>
</tr>
<tr>
<td><strong>Gross Patient Revenue</strong></td>
<td><strong>5,500,000</strong></td>
</tr>
<tr>
<td>Estimated Deductions from Revenue</td>
<td>(1,500,000)</td>
</tr>
<tr>
<td><strong>Net Patient Revenue</strong></td>
<td><strong>4,000,000</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXPENSE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Expense</td>
<td>1,400,000</td>
</tr>
</tbody>
</table>

a. $4,100,000
b. $4,000,000
c. $2,600,000
d. $1,500,000

11. Which of the following bacteria should not be considered a contaminant when detected in a single blood culture bottle from a set of four bottles collected at the same time?

a. Bacteroides fragilis
b. Corynebacterium amycolatum
c. Propionibacterium acnes
d. Aerococcus viridans

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Question tests Category 1.7 (Applied research projects)

Question tests Category 2.1 (Personnel)

Question tests Category 2.2 (Facility needs)

Question tests Category 2.4 (Finances)

Question tests Category 2.6 (Data analyses)
12. What action should be taken after failing a proficiency survey?
   a. Repeat testing three times on three different days with new material.
   b. Perform testing on quality control material and continue reporting if results are correct.
   c. Send the remaining proficiency material to a reference laboratory.
   d. Determine the cause of the error, correct it, and document actions.

*Question tests Category 2.7 (Proficiency testing program)*

13. According to the *Biosafety in Microbiological and Biomedical Laboratories* (BMBL), culture isolate manipulation may be performed outside a biological safety cabinet for which infectious agent?
   a. *Mycobacterium fortuitum*
   b. *Neisseria meningitidis*
   c. *Salmonella Typhi*
   d. *Yersinia pestis*

*Question tests Category 3.1 (Laboratory safety)*

14. What is responsible for the endemic spread of cytomegalovirus?
   a. Contact with infected nonhuman primates
   b. Inhalation of airborne virus
   c. Persistent and recurrent excretion of virus from infected patients
   d. Contact with virus-contaminated fomites

*Question tests Category 4.1 (Consulting with medical personnel)*

15. The *Staphylococcus aureus* strain indicated by the arrow below was tested against erythromycin (E) and clindamycin (CC). How should the results be reported?

![Image of bacterial culture](image_url)

Image courtesy of Dr. Andrea Linscott, LSU Health Sciences Center

   a. Erythromycin – resistant, Clindamycin – susceptible
   b. Erythromycin – resistant, Clindamycin – resistant
   c. Erythromycin – susceptible, Clindamycin – susceptible
   d. Erythromycin – susceptible, Clindamycin – susceptible

*Question tests Category 4.2 (Consulting with technologists)*

16. The activity of which of the following antimicrobics is destroyed by an acetylating enzyme?
   a. Tetracycline
   b. Gentamicin
   c. Erythromycin
   d. Oxacillin

*Question tests Category 4.3 (Consulting with pharmacy)*
17. Patients exhibiting signs and symptoms of botulinum intoxication require which of the following isolation precautions?

a. Standard
b. Airborne
c. Contact
d. Droplet

*Question tests Category 4.4 (Consulting with infection control preventionists)*
ANSWERS

1. C
2. D
3. A
4. A
5. B
6. C
7. D
8. A
9. D
10. C
11. A
12. D
13. A
14. C
15. B
16. B
17. A