

*Test Bank for Krasner's Microbial
Challenge 4th Edition by Shors*

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File: Chapter 1 Pre-germ Theory

Multiple Choice

1. What was likely NOT the cause of the connection between microbes and infectious diseases?

- A. Invention of the microscope
- B. Surgeons washing hands between patients
- C. Observations of infection control practices delivering babies
- D. Fresh air circulating in hospital rooms

Answer: A

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2. What led to high rates of infectious diseases during the Civil War?

- A. Powder burns
- B. Polluted waterways
- C. Lack of bandages
- D. Primitive weapons

Answer: B

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3. What was the miasma theory about the source of infection?

- A. Noxious gas
- B. Microbes
- C. Fungi
- D. Living material

Answer: A

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4. What scientist first coined the term “cell”?

- A. Anton Leuwenhoek
- B. Robert Hooke
- C. John Snow
- D. Ignaz Philipp Semmelweis

Answer: A

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5. Jean Vilemin was able to produce _____ in laboratory rabbits.

- A. Ricketts
- B. Cholera
- C. Gangrene
- D. Tuberculosis

Answer: D

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6. Joseph Lister applied _____ to dressings to prevent infection.

- A. Listerine
- B. Phenol
- C. Lime
- D. Alcohol

Answer: B

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7. What was the response to others in the medical community to Lister's antiseptic findings?

- A. They ignored them
- B. They ridiculed him
- C. His findings were well received
- D. None of the above

Answer: C

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8. Ignaz Philipp Semmelweis was an advocate of _____.

- A. Sterilizing surgical instruments
- B. Wearing a mask and gloves
- C. Handwashing
- D. Antiseptic

Answer: C

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9. Semmelweis made doctors wash hands with _____ between procedures.

- A. Iodide
- B. Alcohol
- C. Soap

D. Chloride of lime

Answer: D

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10. Semmelweis was rewarded for his work with a(n)_____.

A. Nobel Peace Prize

B. Commitment to an asylum

C. Royal Commendation

D. Accolades from colleagues

Answer: B

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11. John Snow studied a major epidemic of what bacterial disease?

A. Cholera

B. Botulism

C. Tuberculosis

D. Rickets

Answer: A

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12. Snow's detective work showed what?

A. Patients were not washing their hands

B. The handle of a water pump was contaminated with sewage

C. Doctors were not using masks or gloves with patients.

D. Drinking water was taken from different wells

Answer: B

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13. Florence Nightingale would NOT likely be a proponent of:

A. quiet dimmed rooms

B. frequently changed bandages

C. efficient drainage

D. handwashing

Answer: A

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14. Nightingale's actions cut the mortality rate in the military hospitals to:

- A. 40%
- B. 15%
- C. 2%
- D. 1%

Answer: C

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15. Mary Jane Seacole's care included what treatment that Nightingale likely did NOT include?

- A. Fresh ventilation
- B. Herbal remedies
- C. Peaceful atmosphere
- D. Windows in rooms

Answer: B

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16. Changes in Civil War medical procedures were made based upon:

- A. Notes from doctors in other conflicts
- B. First hand observation
- C. Scientific research papers
- D. Medical textbooks

Answer: B

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17. What was puerperal fever?

- A. Childbed fever
- B. Typhus fever
- C. Rickets fever
- D. Cholera

Answer: A

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18. What was the deadliest infectious disease for the Union army during the Civil War?

- A. Diphtheria
- B. Influenza
- C. Measles
- D. Common cold

Answer: B

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19. What type of pathogen put the Union soldiers in the most peril?

- A. Bacterium
- B. Virus
- C. Protozoan
- D. A and B

Answer: D

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20. What was the leading killer in the American Civil War?

- A. Broken hearts
- B. Bullets
- C. Disease
- D. Exposure

Answer: C

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Short Answer:

21. What were two of the bloodiest wars in human history?

Answer: Crimean War and American Civil War

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22. The 19th century theory that infection was the result of noxious or toxic vapors emanating from sewage or filth and trash in towns

Answer: miasma theory

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23 What does word contagion mean?

Answer: Infectious contact

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24. Joseph Lister applied what to bandages of his patients?

Answer: Carbolic acid (phenol)

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25. What scientist's ideas helped Lister make the connection between microbes and infectious disease?

Answer: Louis Pasteur

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26. Carl Crede's claim to fame was developing a pro- phylactic treatment for what disease that lead to the blindness in newborns?

Answer: Gonococcal ophthalmia neonatorum

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27. What was the pathogen that caused gonococcal ophthalmia neonatorum?

Answer: Neisseria gonorrhoeae

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28. What treatment did Carl Crede find the most effective treatment for newborns

Answer: 2% solution of silver nitrate into each eye of the newborn.

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29. What was the theory that plants, animals and insects arose from nonliving things?

Answer; Spontaneous generation

30. Florence Nightingale emphasized the need for adequate ventilation and cleanliness to promote healing of patients. She insisted that windows and fireplaces be left open in order to allow fresh air to freely circulate in the wards. What is one word that would describe her from this description?

Answer: sanitarian

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31. What is the term which means “contaminated with microbes”?

Answer: septic

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32. What organization did Civil War nurse Clara Barton later form?

Answer: American Red Cross

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33. What was the purpose of emergency treatment units (ETUs) during the Ebola outbreak in West Africa?

Answer: Ebola virus is extremely contagious. These units isolated patients to contain the spread of this disease

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34. What was the major achievement of Global Handwashing Day in 2008?

Answer: Over 120 million children in more than 70 countries washed their hands with soap and water for 30 seconds in order to spread the word about handwashing.

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35. What do we call the disease today that in the 19th century was known as “consumption”?

Answer: Tuberculosis

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36 How did Jean-Antoine Villemin test his theories about contagious disease?

Answer: Villemin inoculated rabbits with tuberculous matter from a human corpse.

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37: What procedure did Dr. Richard Burr implement during the Civil War that was helpful to soldiers' families?

Answer: Dr. Burr introduced embalming on the battlefield and in military camps, which made it possible for the preserved remains of soldiers to be transported home to relatives for interment.

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38: What does barrier technique mean in medicine?

Answer: Hospital workers wear masks and gloves

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Matching-

The idea that microbes caused infectious diseases was unproven however, some pioneering figures in medicine recognized that cleanliness could prevent contagion and mortalities. A few of those medical geniuses are listed in the table below.

Table 1.1

A. Joseph Lister

B. John Snow

C. Ignaz Semmelweis

D. Florence Nightingale

E. Carl Siegmund Franz Crede

F. Jean-Antoine Villemin

Match the letter of the scientist next to their medical achievement.

39. Ordered all obstetricians and medical students to wash their hands with chloride of lime before entering the maternity ward.

Answer: C

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40. Produce **tuberculosis** in laboratory rabbits

Answer: F

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41. Transformed surgery and the management of childbirth into safe procedures through the use of chemically treated dressings and carbolic acid sprays.

Answer: A

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42. Developed a prophylactic treatment to prevent gonococcal ophthalmia neonatorum, a form of blindness in newborns.

Answer: E

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43. Sanitarian who emphasized the need for adequate ventilation and cleanliness to promote healing of patients.

Answer: D

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44. Laid the groundwork for modern methodologies of epidemiology.in study of cholera.

Answer: B

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.Essay

45. What observations/conclusions did Carl Crede make that led to his discovery of gonococcal ophthalmia neonatorum?

Answer: Crede knew that women who married men with a history of gonorrhea became infected. About 35% of pregnant women in European public hospitals had gonorrhea. Crede hypothesized that if ophthalmia was transmitted by the infected mother during delivery to the newborn child, it would be possible to prevent it.

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46. Who made a greater contribution to the field of microbiology Robert Hooke or Anton van Leeuwenhoek? Explain your reasoning.

Answer: Opinions may vary but they must back it up with material from the text.

Robert Hooke is credited with coining the term *cell*, which is still used in biology today. Hooke was one of the inventors of the first **compound microscope**, which he used to magnify things 35 times their normal size. He examined thin slices of cork from the bark of an oak tree, bones, insects, plants, and mold. He published his observations in his book, *Micro- graphica: or some Physiological Descriptions of Minute Bodies Made by Magnifying Glasses with Observations and Inquiries Thereupon*, published in 1665.

Anton van Leeuwenhoek in his lifetime, he made about 500 simple microscopes and lenses that could magnify specimens from 32× to 266×. He is credited with reporting the first known descriptions of microorganisms. For over 60 years, as an amateur microbiologist, van Leeuwenhoek described freshwater samples that had hundreds of tiny moving particles, which he thought were small, living animals, which he called **animalcules** . Van Leeuwenhoek did not make the connection that the animalcules, or **microbes**, also caused disease. For this reason, even though his scientific contributions to society were impressive at the time of his work, very little was known about them until 200 years after his death.

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47. Name three individuals and their contributions to the advancement of medicine in this chapter.

Answer: Joseph Lister reasoned that if he could apply dressings with antiseptics that destroyed the floating air particles contaminating surgical incision sites, postoperative sepsis would be reduced. Ignaz Philipp Semmelweis figured out that handwashing between births decreased fatality rate. Jean-Antoine Villemin was able to produce **tuberculosis** in laboratory rabbits. There are many other examples throughout chapter.

48. What led to the high rates of infection during the Civil War?

Answer: Unsanitary conditions. spoiled food and inadequate hygiene. Fly-infested latrines located next to cooking tents. Dietary deficiencies (malnutrition), which caused immune suppression. Polluted waterways (latrines were dug too close to streams, contaminating water supplies for drinking and hygiene practices). Overcrowding. Migrations of troops Unburied bodies of humans and horses. Limited medical treatment (no antibiotics) No knowledge of aseptic techniques.

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49. Compare and contrast hospital sanitation of today with those in the 19th century.

Answer: In the 19th century handwashing was not done between patients. Instruments and surfaces were not sterilized. The source and treatment of infection was not understood. Soldiers were seven times more likely to die from infection in the hospital than on the battlefield. Antibiotics were not available to stop infection. Hospital workers did not wear masks or gloves.

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50. What led people to accept the notion that microbes cause infectious disease?

Answer: The notion that microbes can cause infectious diseases did not come with the invention of the microscope, but instead was based on critical observations of hospital infection control practices used in surgery and in delivering babies.

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