Lec 3 Quize

1. Which bacterial structure is primarily responsible for protection against phagocytosis, and what is its primary chemical composition?

A. Cell wall; peptidoglycan
B. Capsule; polysaccharides or polypeptides
C. Flagella; lipoproteins
D. Pili; phospholipids
E. Mesosomes; proteins

2. Which of the following best explains the difference between endotoxins and exotoxins?

A. Exotoxins are less toxic than endotoxins.
B. Endotoxins can be neutralized by antibodies, but exotoxins cannot.
C. Exotoxins are proteins released by live bacteria, whereas endotoxins are components of the bacterial cell wall released upon cell death.
D. Endotoxins are proteins while exotoxins are carbohydrates.
E. Exotoxins cause systemic symptoms, while endotoxins have

4. Which of the following bacterial structures is primarily involved in bacterial conjugation?

A. Flagella
B. Pili (Fimbriae)
C. Mesosomes
D. Inclusion bodies
E. Ribosomes

5. During bacterial binary fission, the process of genetic material division occurs:

A. After cytoplasm division
B. Before septum formation
C. Simultaneously with cytoplasmic division
D. During the lag phase
E. Only during stationary phase

6. Which stage of bacterial growth is characterized by a balance between cell growth and cell death due to depleted nutrients?

A. Lag phase
B. Log phase
C. Exponential phase
D. Stationary phase

7. A patient with severe sepsis due to gram-negative bacteria develops shock. Which bacterial structure is likely responsible for this systemic response?

A. Exotoxins released by the bacteria
B. Peptidoglycan fragments from the cell wall
C. Lipopolysaccharides (LPS), specifically the Lipid A component
D. O-antigen of the LPS layer
E. Flagellar proteins inducing cytokine release

8. What is the key difference between gram-positive and gram-negative bacteria concerning their cell wall structure?

A. Gram-positive bacteria lack peptidoglycan
B. Gram-negative bacteria lack a cytoplasmic membrane
C. Gram-positive bacteria have a thick peptidoglycan layer with teichoic acids
D. Gram-negative bacteria have a thick peptidoglycan layer without outer membrane
E. Gram-positive bacteria possess lipopolysaccharides

9. How do bacterial capsules contribute to pathogenicity?

A. By enhancing flagellar motility
B. By increasing protein synthesis during infection
C. By resisting phagocytosis and protecting bacteria from the host immune system
D. By enhancing endospore formation
E. By increasing antibiotic resistance through efflux pumps

10. Which of the following best describes the mesosome's function in bacterial cells?

A. Replication of plasmids
B. Increase in the cell's surface area for oxidative phosphorylation
C. Conjugation with other bacteria
D. Detoxification of cellular waste
E. Formation of gas vesicles for buoyancy

11. What is the primary difference between episomes and plasmids in bacterial cells?

A. Episomes integrate into the bacterial genome, while plasmids exist independently
B. Plasmids can integrate into the bacterial genome, while episomes cannot
C. Episomes are only found in gram-positive bacteria
D. Plasmids are exclusively involved in conjugation
E. Episomes are involved in resistance, while plasmids are not

12. Which inclusion body is responsible for carbon and energy storage in bacterial cells?

A. Glycogen granules
B. Sulfur globules
C. Magnetosomes
D. Gas vesicles
E. Polyphosphate granules

13. During which phase of bacterial growth would antibiotics that target cell wall synthesis be most effective?

Very Good Q.

A. Lag phase
B. Exponential phase
C. Stationary phase
D. Death phase
E. Post-stationary phase

Answers:

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