# LEC 2 Q – MOROBIOLOGY:

1. **What is the primary function of the nucleoid in bacteria?**
   A) Protein synthesis
   B) Storage of nutrients
   C) Carrying genetic information
   D) Energy production
   **Answer: C**
2. **Which type of ribosome is found in bacteria?**
   A) 40S
   B) 60S
   C) 70S
   D) 80S
   **Answer: C**
3. **What structural component gives rigidity to the bacterial cell wall?**
   A) Lipopolysaccharides
   B) Peptidoglycan
   C) Phospholipid bilayer
   D) Proteins
   **Answer: B**
4. **Which of the following antibiotics targets the cell wall of bacteria?**
   A) Tetracycline
   B) Penicillin
   C) Erythromycin
   D) Rifampicin
   **Answer: B**
5. **Which type of bacteria has a thick peptidoglycan layer?**
   A) Gram-negative
   B) Mycoplasma
   C) Gram-positive
   D) L-forms
   **Answer: C**
6. **What distinguishes Mycoplasma from other bacteria?**
   A) Presence of a thick cell wall
   B) Ability to resist antibiotics due to lack of peptidoglycan
   C) Presence of plasmids
   D) Lack of ribosomes
   **Answer: B**
7. **What is the main function of the cell membrane in bacteria?**
   A) Protein synthesis
   B) Nutrient storage
   C) Selective transport

D) Genetic information storage

**Answer: C**

8. **L-forms of bacteria are characterized by their:**
   A) Thick cell walls
   B) Ability to change shape
   C) Dependence on antibiotics for survival
   D) Presence of a rigid outer membrane
   **Answer: B**
9. **Which structure acts as a protective layer against osmotic pressure in bacteria?**
   A) Cell membrane
   B) Nucleoid
   C) Cell wall
   D) Ribosome
   **Answer: C**
10. **Which of the following statements about Gram-negative bacteria is true?**
    A) They have a thick peptidoglycan layer.
    B) They lack an outer membrane.
    C) They contain lipopolysaccharides.
    D) They are typically more susceptible to penicillin than Gram-positive bacteria.
    **Answer: C**
11. **Which component of the bacterial cell wall is responsible for its immunogenicity in Gram-positive bacteria?**
    A) Lipopolysaccharides
    B) Teichoic acid
    C) N-acetylmuramic acid
    D) Peptidoglycan
    **Answer: B**
12. **What is the function of porins in Gram-negative bacteria?**
    A) Provide rigidity to the cell wall
    B) Facilitate transport of hydrophilic molecules
    C) Act as enzymes for cell division
    D) Store nutrients
    **Answer: B**
13. **Which of the following correctly describes the role of mesosomes in bacteria?**
    A) Involved in DNA replication
    B) Site for lipid synthesis
    C) Involved in energy production
    D) Function as a protective layer
    **Answer: C**
14. **What distinguishes L-forms from normal bacteria?**
    A) They possess a cell wall.

B) They can replicate in the absence of nutrients.
C) They can survive without a cell wall.
D) They have larger ribosomes.
**Answer: C**

15. **In Gram-negative bacteria, which structure is a key component of the outer membrane?**
A) Teichoic acid
B) Peptidoglycan
C) Lipopolysaccharides
D) Plasmids
**Answer: C**
16. **Which of the following statements about bacterial ribosomes is accurate?**
A) They are larger than eukaryotic ribosomes.
B) They consist of a 60S and a 40S subunit.
C) They are the site of DNA replication.
D) They are essential for protein synthesis.
**Answer: D**
17. **What is the primary reason Gram-negative bacteria are more resistant to antibiotics than Gram-positive bacteria?**
A) Presence of a thicker peptidoglycan layer
B) Presence of an outer membrane
C) Lack of ribosomes
D) Smaller size
**Answer: B**
18. **Which of the following describes the role of the periplasmic space in Gram-negative bacteria?**
A) Site of protein synthesis
B) Space for nutrient storage
C) Contains enzymes and transport proteins
D) Involved in genetic information storage
**Answer: C**
19. **Which of the following structures in bacteria is analogous to mitochondria in eukaryotic cells?**
A) Ribosomes
B) Mesosomes
C) Nucleoid
D) Inclusion granules
**Answer: B**
20. **What distinguishes the cell membrane of bacteria from that of eukaryotic cells?**
A) Presence of sterols
B) Phospholipid bilayer structure
C) Lack of sterols

D) Presence of cholesterol

**Answer: C**

21. **Which component is found in the outer membrane of Gram-negative bacteria but not in Gram-positive bacteria?**
    A) Peptidoglycan
    B) Lipopolysaccharides
    C) Teichoic acid
    D) N-acetylglucosamine
    **Answer: B**
22. **What is the main function of inclusion granules in bacteria?**
    A) DNA replication
    B) Protein synthesis
    C) Nutrient storage
    D) Cell division
    **Answer: C**
23. **Which of the following is a characteristic of Gram-positive bacteria?**
    A) Presence of an outer membrane
    B) Thin peptidoglycan layer
    C) Absence of teichoic acid
    D) Thick peptidoglycan layer
    **Answer: D**
24. **Which type of bacteria is known for its ability to survive in environments lacking a cell wall?**
    A) Mycoplasma
    B) L-forms
    C) Both A and B
    D) Gram-positive bacteria
    **Answer: C**
25. **What is the role of ribosomes in bacterial cells?**
    A) Energy production
    B) DNA storage
    C) Protein synthesis
    D) Cell wall formation
    **Answer: C**
26. **Which of the following statements is true regarding plasmids?**
    A) They are essential for bacterial survival.
    B) They replicate independently of the bacterial chromosome.
    C) They are found in all bacterial species.
    D) They are involved in cell wall synthesis.
    **Answer: B**
27. **What distinguishes Gram-negative bacteria in a Gram stain procedure?**
    A) They retain crystal violet.
    B) They appear pink after counterstaining.
    C) They have a thick peptidoglycan layer.

D) They do not have a cell membrane.

**Answer: B**

28. **What is the primary function of teichoic acid in Gram-positive bacteria?**
    A) Provides rigidity to the cell wall
    B) Acts as an endotoxin
    C) Functions in nutrient transport
    D) Helps with cell division
    **Answer: A**
29. **Which of the following structures can serve as a target for antibiotics?**
    A) Ribosomes
    B) Nucleoid
    C) Cell membrane
    D) All of the above
    **Answer: D**
30. **In which bacterial structure would you find the crystal violet stain during a Gram stain?**
    A) Cell membrane
    B) Cell wall
    C) Nucleoid
    D) Ribosome
    **Answer: B**

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