

# MICROBIOLOGY

MED ARCHIVE

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1. Removal or destruction of all microbial life including endospores is called:

- A) Disinfection
- B) Antisepsis
- C) Sterilization
- D) Pasteurization

Answer:c

2. Pasteurization method at 72°C for 15 seconds followed by rapid cooling to 13°C is known as:

- A) Batch method
- B) Flash method
- C) Holding method
- D) Dry heat method

Answer:B

3. The nucleocapsid of a virus consists of:

- A) Envelope + genome
- B) Capsid + genome
- C) Capsid + envelope
- D) Protein + lipids

Answer:B

4. Lipid bilayer and associated glycoproteins that surround some viruses are called:

- A) Capsid
- B) Peplomers
- C) Envelope
- D) Nucleoid

Answer:C



5. One of the following has linear ssRNA genome:

- A) Adenovirus
- B) Influenza virus
- C) Measles virus
- D) Herpes virus

Answer:C

6. Host range of a virus is determined by:

- A) Metabolism
- B) Shape
- C) Specificity (attachment proteins and receptors)
- D) Envelope

Answer:C

7. Which of the following should NOT be done after a needle-stick injury?

- A) Wash with soap and water
- B) Report the incident
- C) Cover with a clean dressing
- D) Squeeze the affected area

Answer:D

8. To differentiate Staphylococci from Streptococci, the test used is:

- A) Coagulase test
- B) Oxidase test
- C) Catalase test
- D) Indole test

Answer:C



9. Which of the following is NOT a property of exotoxins?

- A) Heat-labile
- B) Produced by both Gram +ve and Gram -ve bacteria
- C) Highly potent
- D) It does not get denatured on boiling

Answer:D

10. Which of the following structures are external to the cytoplasmic membrane?

- A) Cell wall
- B) Capsule
- C) Flagella
- D) Pili
- E) All of the above

Answer:E

11. Which of the following, if absent, would prevent a bacteriophage from attaching to a bacterium?

- A) Sheath contraction
- B) Capsid
- C) Base plate
- D) Tail fibers

Answer:C

12. Bacteria belong to which kingdom?

- A) Protista
- B) Plantae
- C) Fungi
- D) Monera (Prokaryotae)

Answer:D



13. Cocci arranged in cuboidal packets of eight are called

- A) Diplococci
- B) Streptococci
- C) Staphylococci
- D) Sarcinae

Answer:D

14. Which fastidious organism requires specific factors from blood for its growth?:

- A) Streptococcus pyogenes
- B) Mycobacterium tuberculosis
- C) Haemophilus influenzae
- D) Escherichia coli

Answer:C

15. The causative agent of whooping cough is:

- A) Corynebacterium diphtheriae
- B) Bordetella pertussis
- C) Haemophilus influenzae
- D) Klebsiella pneumoniae

Answer:B

16. glycoprotein inhibits bacterial cell wall synthesis by binding to:

- A) Penicillin-binding proteins (PBPs)
- B) N-acetylmuramic acid
- C) N-acetylglucosamine
- D) D-Ala-D-Ala terminal

Answer:D



17. Which of the following viruses enters the host cell by direct fusion with the plasma membrane?

- A) Adenovirus
- B) Influenza virus
- C) HIV
- D) Reovirus

Answer:C

18. Tyndallization (fractional sterilization) is effective because it:

- A) Kills only vegetative cells
- B) Inactivates toxins
- C) Denatures proteins
- D) Kills spores by repeated heating cycles

Answer:D

19. Which of the following is NOT part of standard precautions?

- A) Hand hygiene
- B) Environmental cleaning
- C) Isolation
- D) Safe injection practices

Answer:C

20. Regarding bacterial flagella structure, which of the following statements is INCORRECT?

- A) Basal body arises from the cell wall
- B) Hook is external to peptidoglycan
- C) Flagella can be distributed over the bacterial surface

Answer:A

21. Vibrio cholerae is classified as:

- A) Gram-positive bacilli
- B) Gram-negative cocci
- C) Gram-negative comma-shaped bacilli
- D) Gram-positive cocci

Answer:C



22. A bacterial cell transfers a plasmid to another cell during (The process when bacteria give a genetic material to other bacteria is)?

- A) Transformation
- B) Transduction
- C) Conjugation
- D) Binary fission

Answer:C

In Gram-negative bacteria, lipoproteins connect:

- A) Cytoplasmic membrane with peptidoglycan
- B) Peptidoglycan with outer membrane
- C) Outer membrane with capsule
- D) Flagella with peptidoglycan

Answer:B

23. A patient with an airborne infection should be placed in an AIIR with:

- A) Positive pressure relative to surrounding areas
- B) Negative pressure relative to surrounding areas
- C) Standard room pressure
- D) No special ventilation

Answer:B

24. The transforming agent in bacterial transformation experiments was found to be:

- A) Protein
- B) Amino acid
- C) DNA

Answer:C

25. Who is the scientist who named animalcules?

- A) Robert Hooke
- B) Louis Pasteur
- C) Alexander Fleming
- D) Anton van Leeuwenhoek

Answer:D



26. Which of the following statements about bacteria is CORRECT?

- A) Bacteria are eukaryotic
- B) Bacteria belong to Kingdom Fungi
- C) Bacteria are multicellular
- D) Bacteria belong to Kingdom Monera

Answer:D

27. Which of the following is NOT a characteristic of algae?

- A) Size ranges from 1  $\mu\text{m}$  to several centimeters
- B) Can be unicellular or multicellular
- C) Heterotrophic
- D) Reproduce sexually and asexually

Answer:C

29. A bacterium that is both catalase positive and coagulase positive is most likely:

- A) Staphylococcus epidermidis
- B) Streptococcus pyogenes
- C) Staphylococcus aureus
- D) Enterococcus faecalis

Answer:C

30. All of the following are RNA viruses except:

1. hepatitis D virus
2. herpesvirus
3. reovirus

Answer:2

31.  $\beta$ -lactam antibiotics inhibit bacterial cell wall synthesis by binding to:

- A) D-Ala-D-Ala terminal
- B) Ribosomes
- C) Penicillin-binding proteins (PBPs)
- D) DNA gyrase

Answer:C



32.  $\beta$ -lactam antibiotics are ineffective against *Mycoplasma pneumoniae* because:

- A) It is Gram-positive
- B) It is Gram-negative
- C) It lacks a cell wall
- D) It produces  $\beta$ -lactamases

Answer:C

33. A patient develops diarrhea after a course of broad-spectrum antibiotics. Culture shows spore-forming Gram-positive rods. The most likely causative organism is:

- A) *Escherichia coli*
- B) *Salmonella enterica*
- C) *Clostridium difficile*
- D) *Staphylococcus aureus*

Answer:C

34. Which of the following is incorrect regarding protozoa?

Answer is cultivated only in laboratory media.

35. The viral ligand and its host receptor for HIV is:

- A) Hemagglutinin – sialic acid
- B) Neuraminidase – sialic acid
- C) Spike protein – ACE2
- D) gp120 – CD4

Answer:D

36. Which of the following bacteria is a common cause of dysentery?

- A) *Escherichia coli*
- B) *Salmonella enterica*
- C) *Shigella*
- D) *Vibrio cholerae*

Answer:C



37. Which bacterium causes “rice-water” diarrhea?

- A) Shigella spp.
- B) Escherichia coli
- C) Vibrio cholerae
- D) Salmonella enterica

Answer:c

38. Which of the following is incorrect about bacteria?

Answer is (all chromosomal DNA that integrate into bacteria is beneficial )

39. All of the following is correct except ?

Answer is (lipoteichoic acid has only one function that attachment peptidoglycan layers with cell membrane)

40. The process by which a bacterial cell can be forced to take up a segment of DNA from the environment is:

- A) Transformation
- B) Transduction
- C) Cloning
- D) Conjugation

Answer:A

41. What determines the host range of the virus

- A) genatec material ofthe virus
- B) size of the virus
- C) specificity of resptor ligand interaction
- D) temperature

Answer:C



42. Which virulence factor protects *Haemophilus influenzae* from phagocytosis?

- A) IgA protease
- B) Pili
- C) Endotoxin (LPS)
- D) Polysaccharide capsule

Answer:D

43. Which of the following statements about LPS is INCORRECT?

- A) Lipid A is responsible for endotoxin activity
- B) Core polysaccharide provides structural stability
- C) O-antigen contributes to antigenic variability
- D) O-antigen releases endotoxin

Answer:D

44. Archaeobacteria?

- A. Mesophiles
- B. Thermophiles
- C. Extreme Thermophiles
- D. Optimum growth between 20 to 40 C
- E. Optimum growth between 50 to 60 C

Answer: C

45. What is the phage of the bacteria that cause diphtheria

- A) T12
- B) CTX
- C) Lambda
- D) corynophage beta

Answer:D



46. All of the following statements about endotoxin are correct EXCEPT:

- A) It is heat-stable
- B) It is part of Gram-negative outer membrane
- C) It can cause fever and shock
- D) It can be neutralized by antibody

Answer:D

47. Penicillin is most effective against bacteria during which growth phase?

- A) Lag phase
- B) Exponential (log) phase
- C) Stationary phase
- D) Death phase

Answer:B

48. Which type of bacteria requires high salt concentrations and can live in environments like the Dead Sea?

- A) Non-halophilic bacteria
- B) Facultative halophiles
- C) Obligate (extreme) halophiles
- D) Acidophiles

Answer:C

49. In aerobic respiration, the final electron acceptor is:

- A) Nitrate
- B) Sulfate
- C) Pyruvate
- D) Oxygen

Answer:D



50. What precaution is taken to limit the transmission of small particles that travel long distances?

- A. Droplet Precautions
- B. Airborne Precautions
- C. Standard Precautions
- D. Contact Precautions
- E. All incorrect

Answer: B

51. When a viral genome integrates into the bacterial genome, it is called:

- A) Plasmid
- B) Transposon
- C) Prophage
- D) Episome

Answer:C

52. Which of the following Gram-negative bacteria is commonly associated with sexually transmitted diseases (STDs)?

- A) Neisseria meningitidis
- B) Neisseria gonorrhoeae
- C) Haemophilus influenzae
- D) Vibrio cholerae

Answer:B

53. A 30 years old patient comes to the clinic with watery ( rice water ) diarrhea, it is caused by which of the following gram negative bacilli bacteria:

- A- E coli
- B- pseudomonas aeruginosa
- C- Vibrio cholera

Answer: C

