

Microbiology

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Lecture 1

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عبدالعزیز علی

Designed By :

Raneem Dmour



Microbiology

Lecture 1

1. which of the following correct match:

- A. Louis Pasteur—>Discovered Mycobacterium tuberculosis
- B. Redi—> As a tailor
- C. Ignaz Semmelweis—>discovered hygiene
- D. botanist launching the field of vaccine

Ans:C

2. All the following are true except:

- A. Russian botanist -- virology
- B. Redi -- disapproved spontaneous generation
- C. Robert Koch -- animalcules
- d. botanist launching the field of virology

Ans:C

3. All of the following is true except :

- a. Robert Hooke : discovered animalcules
- b. Pasteur: vaccine concept
- c. Koch's postulate: one micro one disease
- d. botanist launching the field of virology

Ans:A

4. Not true about Gram -ve ?

- A. stain pink after gram stain
- B. (D-Ala)---(5-Gly)---(L-Ala)
- C. Inner most plasma membrane

Ans:B

5. all of the following true except :

- A. virus can be cultured on artificial media
- B. Bacteria reproduce by cell division
- C. Molds are multicellular
- D. Fungi can be cultured on artificial media

Ans:A

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Lecture 2

Medical card .

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1. Anchor peptidoglycan layers to the plasma membrane:

- A. Teichoic acid
- B. Lipoteichoic acid
- C. Wall-associated protein

[Ans:B](#)

2. The true regarding peptide interbridge

- A. D Alanine - 5 Glycine - L lysine
- B. 1 Ala - 5 Gly - L lys
- C. D Ala - 4 Gly - L lys
- D. L lys - 5 Gly - D Ala

[Ans:A+D](#)

3. One of the following external to cytoplasmic membrane:

- A. Mesosomes
- B. Capsule
- C. DNA
- D. plasmid

[Ans:B](#)

4. All of the following correct about pili except:

- A. a single bacterial cell bears about 100-200
- B. two types
- C. amphitrichous pili good for attachment
- D. the origin is from cytoplasm and penetrate through the peptidoglycan layers
- E. Pili made from protein called pilin

[Ans:C](#)

5. Which type of cocci bacteria is cuboidal

- A. Sarcinae
- B. Streptococci
- C. Staphylococci
- D. Tetrads

[Ans:A](#)

6-All of the following is correct about pilli EXCEPT:

- A- present on the surface of all gram negative bacteria.
- B- each bacterial cell bear 100-500 pilli.
- C- have no roll in motality.
- D- there origin from cytoplasm and penetrate through peptidoglycan layer of cell wall.

[Ans:B](#)

8-One of the following is internal to cell wall:

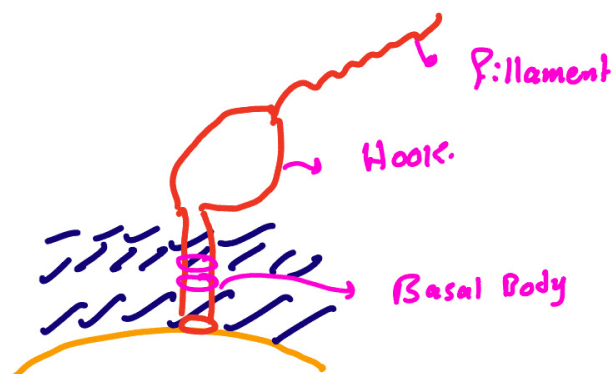
- A-Flagella ✓
- B-Mesosomes
- C-Pili
- D-Caabout

[Ans:B](#)

7-INCORRECT about Flagella structure:

- A- basal body, hook, filament from inside to outside
- B- basal body embedded in peptidoglycan layer.
- C- hook located outside the cell wall.
- D- hook can rotate around itself.
- E- flagella distribution varies in bacteria

[Ans:B](#)



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Lecture 3

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Lecture 3

1. The way to get Carbon from Carbon dioxide in the night

- a) chemoheterotrophs
- b) photoheterotrophs
- c) chemoautotrophs
- d) photoautotrophs

answer : c

2. Two bacteria start growing in ideal growth environment, How many organisms after three growth cycles you will count? Select one :

- a. 2
- b. 4
- c. 8
- d. 16
- e. 32

answer:d

3. In which phase of bacterial growth are the number of growing equal the number of dying bacteria? Select one :

- a. Lag
- b. Log
- c. Stationary.
- d. Death.
- e. Eclipse.

Answer:c

4. The average size of cells during the exponential phase of growth is:

- a) lesser than the lag phase
- b) greater than the lag phase
- c) none of these
- d) equal to the lag phase

Answer:a

5. The cell wall of gram-negative bacteria may contribute to the development of septic shock. Identify the component which is most associated with the induction of septic shock? Select one:

- a. Capsular protein
- b. Lipopolysaccharide
- c. Peptidoglycan
- d. Phospholipid
- e. Teichoic acid

answer:b

6. Which of the following structures is never present in a Prokaryotic cell? Select one :

- a. Cell wall.
- b. Plasmid.
- c. Ribosome.
- d. Membrane-bound nucleus.
- e. Cell membrane.

Answer:d

7. Which of the following structures can pass from one bacterium to another?

Select one:

- a. Plasmid
- b. pilus
- c. Capsule
- d. Plasma Membrane
- e. Cell wall

Answer: a

8. Most strains resist phagocytosis by:

- a) Capsule
- b) Cell membrane
- c) Cytoplasm

Answer: a

9. One of the following bacteria has lipopolysaccharides in its cell wall:

- a) gram-positive bacteria
- b) gram-negative bacteria
- c) streptococci

Answer: b

10. The phase at which bacteria grow at a rapid rate:

- a) lag phase
- b) logarithmic phase
- c) stationary phase
- d) Death phase

Answer: b

11. One of the following is internal to the cell wall:

- A- Mesosomes
- B- Flagella
- C- Pili
- D- Capsules

Answer: a

12. Symbiotic:

Answer: Bacteria grow in partnership with other living organisms

13. All the following are true except:

- A) Episome always found in cytoplasm
- B) Capsule may have antiphagocytic activity
- C) Mesosomes increase surface area
- D) Inclusion bodies save material
- E) Cytoplasmic membrane the same in gram positive and gram negative

Answer: a

14. Which of the following is false: which of the following is false:

- a. O antigen can act as endotoxins
- b. Lipid A stabilizes outer membrane structure
- c. Lipid A may cause septic shock

Answer: A

15. The best description of lag phase is:

- a) maximum growth
- b) rate of cell growth equal rate of cell death
- c) initiation adjustment

Answer: c

16. One of the following external to cytoplasmic membrane:

- A. Mesosomes
- B. Capsule
- c. DNA

answer: b

17. All the following are true except:

- A. Pili always present on the surface of Gram -ve
- B) Capsule may have antiphagocytic activity
- C) Mesosomes increase surface area
- D) Inclusion bodies save material
- E) Cytoplasmic membrane the same in gram positive and gram negative

answer: a

18. Lag phase is called:

- A-adjustment phase EX
- B-death phase
- C-stationary
- D-maximal growth

answer: a

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Lecture 4

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1. The temperature that describes the maximal possible rate at which organisms grow:

- a) optimum temperature
- b) Cardinal temperature
- c) maximum temperature
- d) minimum temperature

Answer:a

2. The convenient temperature range for the mesophiles:

- a) 40-60
- b) 25-40
- c) 60-80

Answer:b

3. Organisms that do not and may even be killed by oxygen:

- a) aerobes
- b) facultative
- c) anaerobes
- d) Aerotolerant anaerobes

Answer:c

4. The breakdown of cellular constituents (cell wall, proteins, fatty acids, nucleic acids) called:

- a) Anabolism
- b) catabolism

Answer:b

5. Aerobic bacteria are? Select one :

- a. Only grow anaerobically
- b. Only grow in the presence of CO_2
- c. Crainarly anaerobe but can grow with CO_2 .
- d. Ordinarily aerobe but can grow in absence of O_2 .
- e. Only grow aerobically .

Answer:e

6. Most of pathogenic bacteria can live in the following temperature rate? Select one:

- a. Mesophile
- b. Pshycrophile.
- c. Thermophile.
- d. capnophils
- e. Hyperthermophile.

Answer:a

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Lecture 4

7. Extreme halophiles are characterized by? Select one:

- a. Requiring high levels of carbon for growth
- b. Requiring high levels of Nitrogen for growth
- c. Requiring high level of Copper for growth
- d. Requiring high levels of Zinc for growth
- e. Requiring high levels of Salts for growth

Answer: e

8. Lack of antioxidant enzymes:

- A- Anaerobes
- b- Aerobes
- c- Microaerophile
- d- Macroaerophiles

Answer: a

9. One of the following is true regarding free radicals. One of the following is true regarding free radicals

- a. Hydrogen peroxide breaks down by catalase only
- b. Superoxide free radical inhibition by two enzymes
- c. Hydrogen peroxide breaks down by peroxidase only
- d. Superficial free radical inhibition by one enzyme

Answer: b

10. At which temperature do extreme thermophiles grow?

Answer: 80 and above

11. When you culture bacteria without known requirements for oxygen, at the second day you found bacteria at the bottom and surface (at the surface more than bottom) the true concept of this bacteria is:

- 1) microaerophile
- 2) obligate anaerobe
- 3) obligate aerobe
- 4) facultative anaerobe

Answer: 4

12. The final electron acceptor in aerobic respiration: The final electron acceptor in aerobic respiration:

- A. Nitrate
- B. Sulfate
- C. Oxygen

Answer: c

13. When a bacteria grown in a test tube, it spread all over the tube with aggregation at the top of it, which kind of bacteria?

Answer: Facultative anaerobic

14. Bacteria grow in human body Bacteria grow in human body

- A. Mesophils & neutrophils
- B. Mesophils & acidophilus
- C. Mesophiles & halophiles
- D. Acidophiles & halophiles
- E. Acidophiles & neutrophiles

answer: a

15. The vibrio cholerae is : The vibrio cholerae is :

- A. Alkaliphile
- B. Neutrophile
- C. Acidophile
- D. Halophile

answer: a

17. Bacteria in a dark area and use carbon dioxide as a carbon source: Bacteria in a dark area and use carbon dioxide as a carbon source:

- A. Chemoautotrophic
- B. Photoautotrophic
- C. Chemoheterotrophic

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Lecture 5

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1.The name of the virus when it's genetic material congogates with bacterial ones:

- a)ProPhage
- b)Lytic phage

Answer: a

2.Bacteria makes scarlet fever:

Answer: Streptococcus pyogenes

3.Which give copy plasmid ?

Answer: Conjugation

4. Type of plasmid give bacteria nutrients? Type of plasmid give bacteria nutrients?

- A.F+ plasmid
- B. F-plasmid
- C.resistance plasmids
- D.col plasmid*

answer : d

5.What is the phage of Scarlet fever phenotype?

answer: T12

6.all of the following true except :

virus can be cultured on artificial media

7.When viral genome integrated with bacterial genome, this process called when viral genome integrated with bacterial genome, this process called:

- A. Prophage
- B. Bacteriophage
- C. Transduction

Answer:a

8.True about capsid :

Answer: protect genome and determine shape

9.Someone came to the clinical with clinical manifestation, he said to the doctor that he ate a canned food, what is the bacteria that associated with this?

- a) C.perfeingens
- b) C.difficile
- c) B.anthraxis
- d) c. botulinum
- e) Mycobacterium

Answer:d

10.Most strains resists phagocytosis by:

- a) Capsule
- b) Cell membrane
- c) Cytoplasm

Answer:a

11. Sale nich of the flowing structures can pass from one bacterium anothe

- a. Plasmid
- b. Pilus
- C. Capsule
- d. Plasma Membrane
- e. Cell wall

answer : a

12. Which of the following is characteristic of the lytic cycle? Select one:

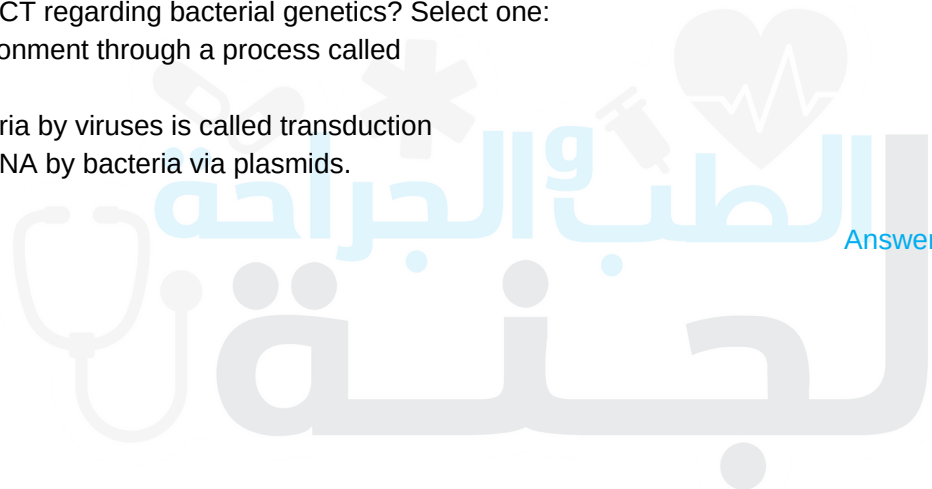
- a. Many bacterial cells containing viral DNA are produced.
- b. Viral DNA is incorporated into the host genome.
- C. The viral genome replicates without destroying the host.
- d. A large number of phages is released at a time
- e. The virus-host relationship usually lasts for generations.

Answer: d

13. Which of the followings is INCORRECT regarding bacterial genetics? Select one:

- a. Bacteria take up DNA from their environment through a process called transformation.
- b. The movement of DNA between bacteria by viruses is called transduction
- C. Conjugation is the direct transfer of DNA by bacteria via plasmids.
- d. Cloning is an artificial transformation.

Answer: e



Lecture 6+7

1: Infant meningitis.. Bacteria was gram negative diplococoid :

- a) *Neisseria meningitidis***
- b) *Neisseria gonorrhoeae***
- c) *Haemophilus influenzae***

2: Someone came to the clinical with clinical manifestation, he said to the doctor that he

ate a canned food, what is the bacteria that associated with this?

- a) *C.perfeingens***
- b) *C.difficile***
- c) *B.anthraxis***
- d) *C.botulinum***
- e) *Mycobacterium***

3: All of the following about *C.difficile* , EXCEPT?

- a) heavily attached to the colon**
- b) antibiotic associated colitis**
- c) Enterotoxin that damage intestine**
- d) major cause of diarrrhea in hospital**
- e) It's an opportunistic infection**

NOVA

4: Someone came to the clinical with wound infection, black skin and gas bubbles, what is the true statement?

- a) the causative agent is spore-forming, gram positive bacilli XXX**
- b) the causative agent is spore-forming, gram negative bacilli**
- c) the causative agent is nonspore-forming, gram positive bacilli**
- d) the causative agent is nonspore-forming , gram negative bacilli**
- e) the causative agent is spore-forming, aerobic and gram positive bacilli**

5: The following bacteria are interfering with normal muscle contraction?

- a) Clostridium botulinum and Clostridium tetani**
- b) C. botulinum only**
- c) C. tetani only**
- d) C. difficile only**
- e) C. botulinum and C. difficile**

6: A boy with difficulty in breathing... Bacteria gram negative coccobacillus so the therapy will be for :

- a) Haemophilus influenzae**
- b) Bordetella pertussis**

7 : One of the following bacteria considered as a grape structure :

- a) staphylococci**
- b) streptococci**
- c) spirochete**
- d) vibrio**
- e) Coccobacillus**

8. Have central spores?

Answer: Anthracis

NOVA

9. Comma bacteria is :

- a. neutrophiles**
- b. alkaliphiles**
- c. psychrophiles**

10. Which of the following is spore-forming bacilli:

- A. S. aureus**
- B. L. monocytogenes**
- C. C. difficile**
- D. C. diphtheriae**

Answer:

- 1. a**
- 2. d**
- 3. a**
- 4. a**
- 5. a**
- 6. b**
- 7. a**
- 8. Anthracis**
- 9. c**
- 10. c**

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Lecture 8

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1-One of the following is INCORRECT regarding filtration

- A-used for vitamin sterilizing
- B-antibiotics solution
- C-0.46 pore size for bact
- D-0.02 pore size for critical sterilisation
- E-0.22 pore size for parenteral solutions

Answer:d

2: The perfect percentage to be present in disinfectant and anticeptic of alcohol is

- a) 100%
- b) 50%
- c) 70%
- d) 60%

Answer:c

3- Items such as media, liquids, and instruments are usually autoclaved for 15

: minutes at temperature

- a)100 C
- b)160 C
- c)121 C
- d)870 C

Answer:c

4)A method which kills food pathogens without damaging the nutritional value

: or flavor

- a) Pasteurization
- b) Sterilization
- c) Incineration

Answer:a

5) Items such as media, liquids, and instruments are usually autoclaved at? Select one

- a) 121°C For 15 minutes
- b) 63°C for 30 minutes
- c) 72°C for 15 seconds .
- d) 100°C for 15 minutes

Answer:a

6) Antisepsis is best described as? Select one:

- a) Using alcohol or iodine to reduce the pathogenic organisms on skin so they no longer represent a pathogenic risk
- b) 100% killing of all forms of microbial life on living tissue such as skin
- c) Subjecting living healthy tissue to ethylene oxide to kill spores
- d) Killing viruses on living tissue by temperature
- e) Using sodium hypochlorite to disinfect skin

Answer:a

7) One of these statements true regarding Distifection :

- A-is the elemnation of chemical substance
- B-is the elemnation of pathogens expect spores
- C-is the elemnation of pathogens with spores

Answer: B

Lecture 9

1. In airborne precautions, which one is true :

Answer: Pressure inside is less than outside

2. Which one of personal protective equipments use when deal with patients

have tuberculosis?

Answer: N95 mask

3. which important thing you should have when deal with patient has influenza

?

A. gown

B. surgical mask

C. gloves



Answers:

1. Pressure inside is less than outside

2. N95 mask

3. b

Lecture 10

1: All of the following mechanisms will cause antimicrobial resistance except?

- A. Inactivation of the antibacterial agent
- B. Target hyperproduction
- C. Target bypass
- D. Sequence mutation
- E. Multiple mutations of the genes found in the mitochondria

2. which generation from cephalosporin treat pseudomonas ?

Answer: 4th generation .

3. The stage of bacteria growth , in which penicillin works most effective:

- A. Lag phase
- B. Exponential phase
- C. Stationary phase
- D. Exponential and lag
- E. Death phase

Answer:

- 1. e
- 2. 4th generation
- 3. b



Lecture 11+12

1) Single-stranded DNA is the genetic material of?

- a. Caliciviruses
- .b. Flaviviruses
- .C. Papillomaviruses
- .d. Parvoviruses
- .e. Herpesviruses

2) Viral envelope consists of? Select one:

- .a. Viral glycoproteins and host lipids
- .b. Viral lipids and Host glycoproteins
- .c. Carbohydrates and host lipids
- d. Only host-cell-derived lipids
- .e. Only Viral glycoproteins

3) True about capsid :

Answer: protect genome and determine shape

4 - Neocleocapsid:

- A- Capsid + genome
- B- Capsid

5- The directly surrounding of Nucleic Acid in virus:

- A- Capsid
- B- Lipid envelope
- C- All of above



6) True about capsid : Answer: protect genome and determine shape

7: Virus contains lipid in it's virion:

- a) Parvoviruses
- b) Picornaviruses
- c) hepadnaviruses
- d) Herpes virus

8: What's incorrect about rhinovirus and poliovirus?

- a) contain RNA polymerase
- b) have multiple antigenic types
- c) is not integrated

9: enzyme that copies the viral negative-sense RNA genome into a positive-stranded copy:

- a) RNA polymerase
- b) Reverse transcriptase
- c) RNA polymerase I
- d) RNA polymerase II

10. When viral genome integrated with bacterial genome, this process called

- A. Prophage
- B. Bacteriophage
- C. Transduction

Answers:

- 1. d
- 2. a
- 3. Protect genome and determine shape
- 4. a
- 5. a
- 6. Protect genome and determine shape
- 7. d
- 8. a
- 9. a
- 10. a