

Course No: DNTS 2312
Course Title: Microbiology
Date:
No. of Questions:
Time: 2 hours
Using Calculator (No)

University of Palestine



Final term Exam
2016/2017
Total Grade: 40

Instructor: Dr. Essameddin Elzatma
Student No.: _____
Student Name: _____
College Name: Dentistry
Dep. / Specialist: _____
Using Dictionary (No)

Multiple Choice

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

True or False

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

Circle the best corresponding answer

1. Bacteriophages can multiply by.

- A. prokaryotic fission
B. a lysogenic pathway
C. a lytic pathway
D. both B and C

2. Some Gram-positive bacteria (e.g., *Bacillus anthracis*) survive harsh conditions by forming.

- A. pilus
B. endospore
C. heterocyst
D. plasmid

3. What are viruses made of?

- A. enzymes and fats.
B. carbohydrates and ATP.
C. protein and nucleic acids.
D. mitochondria and lysosomes.

4. During which of the following processes does a phage kill its host?

- A. conjugation
B. transcription
C. the lytic cycle
D. the lysogenic cycle

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5. Which of the following characteristics, structures, or processes is common to both bacteria and viruses

- A. metabolism
- B. ribosomes
- C. genetic material composed of nucleic acid.
- D. cell division

6. In the name *Escherichia coli*, *Escherichia* is the

- A. kingdom
- B. family
- C. genus
- D. species
- E. order

7. The minimal concentration of alcohol necessary to kill bacteria and enveloped viruses is

- A. 30%
- B. 40%
- C. 50%
- D. 60%

8. Which of the following involves metabolic cooperation among prokaryotic cells?

- A. binary fission
- B. biofilms
- C. endospore formation
- D. photoautotrophy
- E. endotoxin release

9. The ID₅₀ for *Campylobacter* sp. is 500 cells; the ID₅₀ for *Cryptosporidium* sp. is 100 cells. Which of the following statements is FALSE?

- A. both microbes are pathogens.
- B. both microbes produce infections in 50% of the inoculated hosts.
- C. *Cryptosporidium* is more virulent than *Campylobacter*.
- D. *Campylobacter* and *Cryptosporidium* are equally virulent; they cause infections in the same number of test animals.
- E. *Cryptosporidium* infections are more severe than *Campylobacter* infections.

10. An encapsulated bacterium can be virulent because the capsule

- A. resists phagocytosis.
- B. is an endotoxin.
- C. destroys host tissues.
- D. interferes with physiological processes.
- E. has no effect; because many pathogens do not have capsules.

11. Which of the following is *not* a condition of Koch's postulates?

- A. isolate the causative agent of a disease.
- B. cultivate the microbe in a lab.
- C. inoculate a test animal to observe the disease.
- D. test the effects of a pathogen on humans.

12. A positive antibody test for HIV would be a _____ of infection.

- A. sign
- B. symptom
- C. syndrome
- d. complication

13. A disease in which a pathogen remains inactive for a long period of time before becoming active is termed a(n)

- A. subacute disease
- B. acute disease
- C. chronic disease
- D. latent disease

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14. In which type of symbiosis do both members benefit from their interaction?

- A. mutualism B. parasitism C. commensalism D. pathogenesis

15. Endotoxin produced by gram negative bacteria is present in

- A. peptidoglycan B. lipopolysaccharide
C. teichoic acid D. inner membrane

16. Quorum sensing is

- A. the ability to respond to changes in population density.
B. a characteristic allowing secretion of a matrix.
C. dependent on direct contact among cells.
D. associated with colonies in broth culture.

17. Resolution is best described as

- A. the ability to view something that is small.
B. the ability to magnify a specimen.
C. the ability to distinguish between two adjacent objects.
D. the difference between two waves of electromagnetic radiation.

18. Which of the following substances would most effectively inhibit anaerobes?

- A. phenol B. silver C. ethanol D. hydrogen peroxide

19. Which of the following terms best describes the disinfecting of cafeteria plates?

- A. pasteurization B. antisepsis C. sterilization D. sanitization

20. A microorganism that colonizes the skin but is capable of causing infection under the appropriate conditions is referred to as:

- A. a pathogenic organism. B. an opportunistic pathogen.
C. normal flora. D. a nosocomial pathogen.

21. Bacteria lacking superoxide dismutase are

- A. heterotrophs B. obligate anaerobes C. aerobes
D. facultative anaerobes E. autotrophs

22. An example of a noncommunicable infection is

- A. measles B. leprosy C. tuberculosis D. tetanus

23. An infection is acquired in a hospital.

- A. subclinical B. focal C. nosocomial D. zoonosis

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24. _____ is the time that lapses between encounter with a pathogen and the first symptoms.

- A. prodrome.
- B. period of convalescence.
- C. period of invasion.
- D. period of incubation.

25. Normal resident microbes are absent from the

- A. mouth
- B. liver
- C. intestine
- D. hair follicles

26. Virulence factors include

- A. toxins
- B. enzymes
- C. capsules
- D. all of these

27. Spirochete is

- A. gonococci
- B. strphylococci
- C. treponema pallidum
- D. streptococci

28. Which of these is true of prions?

- A. they are small RNA viruses.
- B. they replicate in the nucleus.
- C. they lack protein.
- D. they cause death of brain cells.

29. When pathogenic bacterial cells lose the ability to make adhesins, they

- A. become avirulent.
- B. produce endotoxin.
- C. absorb endotoxin.
- D. increase in virulence.

30. A short-lived infection that manifests with a short incubation period and serious illness is considered to be:

- A. persistent
- B. chronic
- C. latent
- D. acute

31. Which of the following can grow in a Petri plate on a laboratory table?

- A. an anaerobic bacterium.
- B. an aerobic bacterium
- C. viruses on an agar surface.
- D. all of these.

32. Which one of the following chemicals is used to sterilize heat-sensitive materials, such as surgical instruments, in the hospital?

- A. benzalkonium chloride
- B. cresol (Lysol)
- C. ethylene oxide
- D. thimerosal
- E. tincture of iodine

33. The specific action of hemolysins is to

- A. damage white blood cells.
- B. damage red blood cells.
- C. cause fever.
- D. cause leukocytosis.

34. The emergence of new infectious diseases is probably due to all of the following **EXCEPT**

- A. the need of bacteria to cause disease.
- B. the ability of humans to travel by air.
- C. changing environments (e.g., flood, drought, pollution).

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- D. a pathogen crossing the species barrier.
- E. the increasing human population.

35. Viruses cannot be cultivated in

- A. cell culture
- B. bird embryos
- C. live mammals
- D. blood agar

36. Which of the following statements provides the definition of sterilization?

- A. sterilization eliminates organisms and their spores or endospores.
- B. sterilization eliminates harmful microorganisms and viruses.
- C. sterilization eliminates prions.
- D. sterilization eliminates hyperthermophiles.

37. Which of the following kills microorganisms on laboratory surfaces?

- A. antiseptics
- B. disinfectants
- C. sanitization
- D. pasteurization

38. A sample of *E. coli* has been subjected to heat for a specified time, and 90% of the cells have been destroyed. Which of the following terms best describes this event?

- A. thermal death point.
- B. thermal death time.
- C. decimal reduction time.
- D. none of the above.

39. Septicaemia is

- A. bacteria in blood.
- B. toxin in blood.
- C. pus in blood.
- D. multiplication of bacteria and toxins in blood.

40. The presence of mycolic acid in the cell wall characterizes.

- A. *Corynebacterium*
- B. *Listeria*
- C. *Nocardia*
- D. *Mycobacterium*

True (T) or False (F) questions

1. Viruses are not considered living organisms because they are too small to be observed.
2. Gram-negative bacteria appear pink to red following Gram staining.
3. Endospores are very delicate and easily killed.
4. The nature of bacterial capsules allows phagocytes to engulf these bacteria.
5. Pandemic disease is an epidemic that occurs on more than one continent at the same time.
6. ELISA test is used for the identification of cancer.

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7. The type of nucleic acid present is a criterion for specific family classification of viruses.
8. An infection always leads to disease.
9. Some bacteria are considered pleomorphic. This means they have a rod shape.
10. All bacterial toxins are proteins.
11. A nosocomial infection is one that needs to go to hospital as soon as possible.
12. The different reaction to Gram stain is due to the thicker peptidoglycan layer in Gram negative bacteria.
13. Urinary tract infections are more prevalent in females.
14. Sterilization is the total destruction of all microorganisms, including the most resistant forms.
15. Although rickettsial infections are often diagnosed clinically, confirmation of the diagnosis is usually by culturing on blood agar.
16. When you brush your teeth regularly, your mouth will be free of bacteria.
17. Agar is a polymer extracted from algae that has no nutritional value.
18. The type of microscopy we use to examine bacteria that are stained by the Gram stain procedure is called transmission electron microscopy.
19. The Gram stain divides microorganisms into two groups, purple vs. red, on the basis of differences in the presence of an outer membrane.
20. Endotoxin is usually found in secreted rather than cell-associated form.
21. Endotoxin causes fever and hypotension by inducing the release of interleukins such as interleukin-1 and tumor necrosis factor.
22. Endotoxin is produced by both gram-positive cocci as well as gram-negative cocci.
23. Ultraviolet light used in the operating room to disinfect the room kills bacteria primarily by causing oxidation of lipids in the cell membrane.
24. Transmission of milk-borne diseases can be prevented by pasteurization, which kills both bacterial cells and spores.
25. Heat labile instruments for use in surgical procedure can be best sterilized by absolute alcohol.

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26. The correct ones for the decreasing order of resistance to sterilization is: prions, bacterial spores, bacteria.
27. Both DNA and RNA are found in prions.
28. Viruses can be isolated from clinical samples by cultivation in the embryonated eggs.
29. The combination of freezing and drying is known as lyophilization.
30. The antibacterial action of penicillin is due to its effect on DNA synthesis.
31. Regarding growth properties on agar, beta hemolysis gets a clear area around colonies and alpha hemolysis gets a greenish coloring of agar around the colonies.
32. The reservoir transfers infection among different species.
33. Treatments utilizing reusable instruments contribute to the development of nosocomial infections.
34. It is safe for health care workers to wear artificial nails, tips, overlays and decorations when providing direct care to patients.
35. Misuse of antibiotics can lead to the development of antibiotic resistant microorganisms.
36. You should treat blood, body fluids, secretions and excretions as potentially infectious for HIV, Hepatitis B, Hepatitis C and other blood borne pathogens.
37. Prevalence rate is a measurement of deaths by a disease at a particular time.
38. Incidence rate is a measure of new cases of a disease occurs in a population over a specified time period.
39. The substance in the LPS for gram negative bacteria that is responsible for the effects of the toxin is Lipid A.
40. AIDS is an example of direct contact infections.

GOOD LUCK

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