

HSS1100 Midterm 2 (2018)

1. Where is *Bacillus anthracis* commonly found?
 - a. In rice
 - b. In fish exclusively
 - c. In humans only
 - d. In certain species of birds
2. Which of the following are NOT traits of mycobacterium
 - i. acid-Fast Bacterium
 - ii. Can grow rapidly on artificial media
 - iii. Are Gram-positive cocci
 - b. i only
 - c. ii only
 - d. iii only
 - e. i and ii only
 - f. ii and iii only
3. Which on the following statements about syphilis is false?
 - a. Syphilis is caused by a spirochete bacterium
 - b. A positive VDRL test must be confirmed by specific treponemal antibody tests
 - c. A non-specific test involved cardiolipin as an antigen
 - d. It can be transmitted to the foetus
 - e. It can be seen microscopically using acid fast stain
4. Which of the following is NOT a parasitic disease?
 - a. Amoebiasis
 - b. Trichomoniasis
 - c. Giardiasis
 - d. Toxoplasmosis
 - e. Histoplasmosis
5. Which of the following disease does NOT cause bacterial Exotoxin?
 - a. Botulism
 - b. Enteric fever
 - c. Anthrax
 - d. Tetanus
 - e. Diphtheria
6. Which of the following is NOT part of the metazoa family?
 - a. *Enterobius Vermicularis*
 - b. *Trichinella Spiralis*
 - c. *Anisakis Simplex*
 - d. *Schistosoma* spp.
 - e. *Giardia Lamblia*
7. To be considered positive, a tuberculin test must show, after 48 hours, an induration:
 - a. Less than 5mm in diameter
 - b. Larger than the redness (erythema)

- c. 10mm or more in diameter
 - d. With some local hemorrhage
 - e. With scab formation
8. Malaria is caused by which of the following organisms?
- a. Toxoplasma
 - b. Trypanosome
 - c. Trichomonas
 - d. Giardia
 - e. Plasmodium
9. The bacillus anthracis toxin:
- a. Is made up of the 3-separate protien
 - b. Is encoded on the plasmid Pxo2
 - c. Is an endotoxin
 - d. This organism does not make a toxin
10. Cats the definitive host of which of the following parasites
- a. Taenia solium
 - b. Toxoplasma gondii
 - c. Ascaris lumbricoides
 - d. Cyclospora cayetanensis
 - e. Giardia lamblia
11. Which of the following is a symptom associated with tetanus?
- a. Several muscle spasms such as lockjaw
 - b. General muscle weakness
 - c. Gas gangrene
 - d. Spontaneous abortions
 - e. Bilateral cranial nerve palsies
12. The unique characteristic of having wax-like material in its cell wall structure is a of:
- a. Corynebacterium
 - b. Listeria monocytogenes
 - c. Clostridium perfringens
 - d. Mycobacterium leprae
 - e. Bacillus anthracis
13. The most common route of infection with mycobacterium tuberculosis is through:
- a. The skin by direct contact
 - b. Ingestion of contaminated food
 - c. Blood and blood products
 - d. Inhalation of contaminated aerosols
 - e. Hospitals instrumentation (e.g. bronchoscopy)
14. Which of the following pathogens is NOT a spore former?
- a. Clostridium tetani
 - b. Bordetella pertussis
 - c. Bacillus anthracis
 - d. Clostridium difficile

- e. All of the above are spore formers
15. *Listeria monocytogenes*:
- i. Is able to cross three protective barriers in humans
 - ii. Is a non-spore former, Gram-negative bacillus
 - iii. Tolerates cold temperatures and can grow in the refrigerator
- b. i only
 - c. ii only
 - d. iii only
 - e. i, ii and iii
 - f. i and iii
16. Endotoxins are found:
- a. In Gram positive bacteria exclusively
 - b. In acid-fast bacteria such as mycobacterium
 - c. Only in protozoan parasites
 - d. In Gram negative bacteria
 - e. In parasitic organisms
17. Leprosy is:
- a. Caused by *Mycobacterium tuberculosis*
 - b. Commonly found in North America
 - c. Caused by an acid-fast bacterium
 - d. Caused by *Mycoplasma leprae*
 - e. Is caused by a fungal infection that goes untreated
18. Which of the following statements referring to acute gastroenteritis cause by salmonellae, is incorrect?
- a. Is caused by *salmonella typhi*
 - b. Is caused by a non-lactose fermenter
 - c. Should generally not be treated with antibiotics
 - d. Have animals as reservoirs
 - e. Is manifested as acute diarrhea
19. What correct about *legionella pneumophila*?
- i. Is gram negative opportunistic pathogen
 - ii. Transmitted via aerosols from person-to-person
 - iii. Grows in water and found in air cooling tanks
- b. i only
 - c. ii only
 - d. iii only
 - e. i and iii
 - f. ii and iii
20. Malaria:
- a. Is characterized by spiking fever
 - b. May be prevented by vaccination globally
 - c. Can be prevented by vaccination globally
 - d. Is caused by a gram positive bacterium

- e. Is caused by a gram negative bacterium
21. Overuse of broad spectrum antibiotics destroying the normal microbial flora can lead to infection with:
- a. Legionella spp
 - b. Bacillus cereus
 - c. Bordetella pertussis
 - d. Haemophilus influenzae
 - e. Clostridium difficile
22. Which of the following gram-negative rods is commonly linked to bloodying stool?
- a. Haemophilus influenzae
 - b. Salmonella enteritidis
 - c. Vibrio cholera
 - d. Clostridium tetani
 - e. Shigella sonnei
23. A common opportunistic infection associated with AIDS patients is caused by:
- a. Cryptococcus neoformans
 - b. Tinea corporis
 - c. Tinea pedis
 - d. Candida albicans
 - e. Aspergillus flavus
24. The most common route of exposure for tetanus is:
- a. Ingestion of neurotoxin that causes muscle paralysis
 - b. Skin trauma or puncture wound by an object contain
 - c. Stepping on a rusty nail
 - d. From ingesting, improperly prepared home-canned vegetables
 - e. Nobody get tetanus anymore because there exists a vaccine
25. Gas gangrene is caused by:
- a. Clostridium botulinum
 - b. Salmonella serovar typhi
 - c. Listeria monocytogenes
 - d. Clostridium perfringens
 - e. Shigella spp
26. Powdered infant formula is most often associated with:
- a. Enteroinvasive escherichia coli
 - b. Cronobacter (Enterobacter sakazakii)
 - c. Vibrio cholera
 - d. Pseudomonas aeruginosa
 - e. None of the above as powdered infant formula is a sterile product
27. Ulcers are most commonly a result of:
- a. Infection with helicobacter pylori
 - b. Too much stress from studying for this midterm
 - c. Alcohol abuse
 - d. Being immunocompromised

- e. Infection with entamoeba
28. The campylobacter species are:
- a. Anaerobic
 - b. Microaerophilic
 - c. Facultative anaerobes
 - d. Aerobes
 - e. Obligate thermophiles
29. Both EMB and MacConkey growth media: (not sure)
- a. Are selective only
 - b. Are selective and differential
 - c. Only grow gram positive bacteria to grow
 - d. Only allow lactose fermenters to grow
 - e. Are useful growing viruses
30. The organism caused giardiasis is a:
- a. Protozoan
 - b. Retrovirus
 - c. Yeast
 - d. Bacteria
 - e. Spirochete

PART B: SHORT ANSWERS

1. Give an example of a PARASITE that can gain entry into the human host via each of the following modes of transmission. Use a different parasite for each. (4 marks)
2. List the FOUR stages of syphilis infection? (4 marks)
3. Chlamydia exists as 2 distinct forms during its life cycle. Name these 2 forms and list their roles in their life cycle. (4 marks)
4. List 4 gram negative bacilli bacteria that do not cause cause gastrointestinal illness (i.e.) they are classified as enteric in the notes but cause problems elsewhere in the body
5. List 2 similarities and 2 differences between Clostridium botulinum and Clostridium tetani
6. What are the 2 types of toxins produced by Clostridium and what are their effects on the infected host? (4 marks)
7. List the four levels of fungal infections, starting from the least to serious to the most serious symptoms (4 marks)
8. What are the 2 grams negative bacilli most commonly associated with infections in cystic fibrosis patients? (2 marks)

Answer Key

Part A: Multiple Choice

1. C
2. F
3. E
4. E
5. B
6. E
7. C
8. E
9. A
10. B
11. A
12. D
13. D
14. B
15. F
16. D
17. C
18. A
19. E
20. A
21. E
22. E
23. A
24. B
25. D
26. D
27. A
28. B
29. B
30. A

Part B: Short Answers

1. 4 marks
 - a. Waterborne: cryptosporidiosis, Giardia Lamblia
 - b. Foodborne: cyclosporiasis
 - c. Sexual contact: trichomonas vaginalis
 - d. Skin penetration: Schistosomiasi, Plasmodium (Malaria)

2. 4 marks
 - a. Primary Syphilis
 - b. Secondary Syphilis
 - c. Latent Syphilis
 - d. Late Syphilis
3. 4 marks
 - a. Elementary body: infectious (no replication or growth)
 - b. Replication body: Replication and growth
4. 4 marks
 - a. **No answer was provided**
 - i. Salmonellae
 - ii. Escherichia Coli
 - iii. Shigella
 - iv. Enterobacter spp
5. 4 marks
 - a. Similarities
 - i. Gram positive bacilli
 - ii. Spore forming rods
 - b. Differences
 - i. Clostridium tetani requires booster every 10 years
 - ii. Clostridium botulinum causes are from improperly canned vegetables
 - c. Extra:
 - i. C. Tetani causes tetanus
 - ii. C. Botulinum causes botulism
 - d. He asked about B. Cereus and B. Anthracis instead
6. 4 marks
 - a. Toxic A: causes diarrhea
 - b. Toxic B: Cytotoxic to colonic cells
7. 4 marks
 - a. Superficial fungal infection
 - b. Cutaneous fungal infection
 - c. Subcutaneous fungal infection
 - d. Systemic fungal infection
8. 2 marks
 - a. Pseudomonas aeruginosa
 - b. Pseudomonas cepacia