

## Pathogenic Organisms “Sample” Exam

Protozoa (more than once, not at all)

- A. *Plasmodium falciparum*
- B. *Plasmodium vivax*
- C. *Plasmodium ovale*
- D. *Plasmodium malariae*
- E. *Babesi bovis*
- F. *Babesi microti*
- G. *Toxoplasma gondii*
- H. *Pneumocystis carinii*
- I. *Giardia lamblia*
- J. *Entamoeba histolytica*
- K. *Cryptosporidium parvum*
- L. *Isospora belli*

1. Carried by large rodents, does not invade mucosa, can cause watery, foul-smelling diarrhea, cysts are resistant to chlorination
  2. Congenital infection can be manifested as hydrocephaly, microcephaly, retardation
  3. Causes effacement of villi which leads to malabsorption of fats. Prevalent in St. Petersburg
  4. Common in HIV/AIDS patients, but can occasionally cause light diarrhea in normal patients. Likely transmitted in humans by anal-anal sex. Small intestine is infected
  5. Infection involves a tissue cyst that is viable for life of host. Humans are “dead-end” hosts in life cycle of organism. Can be passed from mother to fetus.
  6. A zoonosis carried by dairy cattle with no generally effective antimicrobial therapy
  7. Causes amebiasis
  8. Found more often in USA than Europe, transmitted by *Ixodes*
  9. Malaria with only rings in peripheral blood
  10. Can create similar symptoms to malaria, found in Eastern Europe
  11. Differential diagnosis in immunocompromised patient: legionnaire’s disease, aspergillus, pulmonary edema, miliary TB
  12. Causes malaria, but Duffy-null RBCs immune
  13. Requires two antimicrobial agents: metronidazole to kill tissue organisms, and another to kill organisms in GI tract
  14. The worst kind of malaria
  15. You’d worry about this infection when a young pregnant woman, who has never had a cat before, starts a cat orphanage after watching a special on PBS
  16. Malaria that can cause nephrotic syndrome in children due to Type III hypersensitivity
  17. Colonoscopy demonstrates mucosal ulcerations and bleeding, can look like ulcerative colitis
  18. Can cause a cyst in liver which contains liquefied liver (anchovy paste)
  19. Requires cell-mediated immunity to control infection, can infect CNS after hematogenous dissemination (especially AIDS patients). Treated with Sulfa/Trimethoprim.
  20. Malaria, all RBCs can be parasitized
  21. Relapsing malaria with the fewest % RBC’s parasitized
  22. Congenital transmission can present as chorioretinitis
  23. Most common AIDS-related infection
24. An expectant mother heard on the news the danger of Toxoplasmosis. She asks for an antibody test. The presence of which anti-toxoplasmosis antibody would concern you?
- A. IgG
  - B. IgM
  - C. IgD
25. What is not typically caused by *Plasmodium falciparum*?
- A. DIC
  - B. Acute renal failure due to ATN
  - C. Capillary sludging
  - D. Nephrotic syndrome due to Ag/Ab complexes
  - E. Cerebral malaria
  - F. Splenic rupture
  - G. Markedly reduced hemoglobin

26. What forms of malaria do you need to treat with both a blood schizonticide and hepatic schizonticide?

- A. *P. falciparum* only
- B. *P. ovale* & *P. vivax*
- C. *P. malariae* only
- D. *P. falciparum* & *P. malariae*

Bag of Worms (more than once, not at all)

- A. *Ascaris lumbricoides*
- B. *Diphyllobothrium latum*
- C. *Echinococcus granulosus*
- D. *Echinococcus multilocularis*
- E. *Enterobius vermicularis*
- F. *Necator americanus/Ancylostoma duodenale*
- G. *Onchocerca volvulus*
- H. *Schistosomes haematobium*
- I. *Schistosomes mansoni/japonicum*
- J. *Strongyloides stercoralis*
- K. *Taenia saginata*
- L. *Taenia solium*
- M. *Toxocara canis*
- N. *Trichinella spiralis*
- O. *Trichuris trichiura*

27. This disease comes from beef and has the rule: "Eat flesh, get worms, but eat feces and die"

28. Can lead to B12 deficiency, especially in Scandinavians

29. A large worm can crawl up your biliary tract or out your nose

30. Acutely can show Pulmonary Infiltrate with Eosinophilia, treated with Thiabendazole/Ivermectin

31. When you eat the eggs of this organism, you can get CNS symptoms including seizures and hydrocephalus

32. Can cause mass mesion in liver, where cyst rupture can lead to anaphylaxis. Organisms found in sheep ranges in Arizona and Utah.

33. Scotch tape perianally to diagnose

34. Causes Acute Katayama fever and bladder scarring/cancer

35. The most fatal intestinal helminth

36. Acquired from fresh water whitefish

37. Causes chronic cirrhosis and colon scarring. Resides in mesenteric veins.

38. Itchy anus

39. Schutzstaffel (don't worry, this isn't anything new to remember)

40. Can cause anemia since worms eat blood

41. Attaches to wall of small bowel via scolex, found in SE asia

42. Causes an inflammatory vasculitis with increase in muscle enzymes

43. Rectal prolapse in children

44. Pinworm

45. Whipworm

46. Hookworm

47. Which nematode does not have pulmonary infiltrate with eosinophilia in the acute stage?

- A. Hookworms
- B. *Ascaris*
- C. *Enterobius*
- D. *Strongyloides*

Humongous Fungus (more than once, not at all)

- A. tinea corporis
- B. tinea pedis
- C. tinea cruris
- D. tinea versicolor
- E. tinea capitis
- F. tinea unguium
- G. Chromomycosis
- H. Mycetoma

- 48. Crotch rot
- 49. caused by lipophilic yeast *Malassezia*
- 50. Madura foot
- 51. Occurs in the skin of the trunk
- 52. infection of scalp and hair
- 53. Common in tropical areas, caused by Saprophytic soil fungi that enter skin through trauma. Can lead to bone involvement
- 54. Histology shows an infectious granuloma that look like “copper pennies”
- 55. Onychomycosis
- 56. Can look like a non-fungal infection by aerobic actinomycetes
- 57. Antimicrobics work poorly, surgery is best treatment
- 58. Can be manifested as verrucous dermatitis
- 59. Ringworm
- 60. Caused by Dematiaceous fungi

More Freaking Fungus Fun (more than once, not at all)

- A. *Aspergillus fumigatus*
- B. Phycomycetes
- C. *Candida albicans*
- D. *Cryptococcus neoformans*
- E. *Histoplasma capsulatum*
- F. *Coccidioides immitis*
- G. *Blastomyces dermatitidis*
- H. *Sporothrix schenckii*

- 61. Can have rhinocerebral manifestations
- 62. Rarely produces a pulmonary infection, can be grown on routing blood agar plates
- 63. Can manifest as Extrinsic Allergic Alveolitis
- 64. Treatment depends on surgical debridement
- 65. Can grow within macrophages, has thick polysaccharide capsule
- 66. Spelunker has a “flu”
- 67. Broad based bud
- 68. Containment requires both neutrophils *and* cell mediated immunity
- 69. Can manifest as invasive disease with hematogenous dissemination. Biopsy would show regular septated hyphae.
- 70. Present on US Sonoran desert in California. Humoral immunity of limited benefit.
- 71. Meningitis in most cases, even though patients get ill gradually
- 72. Normal flora of humans
- 73. Can cause fungus ball in lung
- 74. Invasion promoted by diabetes
- 75. Can cause endocarditis with prosthetic valves
- 76. A gardener gets pricked by a rose thorn
- 77. A positive skin tests would have a better prognosis than a high titer of IgG antibody
- 78. Can cause mucosal disease (thrush), cutaneous disease (diaper rash), UTI, or disseminated infection
- 79. Pigeon droppings
- 80. What is true about PrP<sup>Res</sup>?
  - A. It is a misfolded form of an essential cellular protein
  - B. It is a protease-resistant form of an autosomal gene product
  - C. It is a normal cellular protein
  - D. It is the misfolded form of a protein expressed most commonly in macrophages

E Coli (more than once, not at all)

- A. EHEC
- B. EIEC
- C. EPEC
- D. ETEC

- 81. Has shiga-like toxin
- 82. Has a toxin similar to the Cholera Toxin
- 83. O157:H7
- 84. Traveler's diarrhea
- 85. Pedestal formation requires intimin/Tir
- 86. Colonization pili via colonization factor antigen (CFA)
- 87. Most common cause of renal failure in young children

88. What is not true about E. Coli?

- A. It can cause Neonatal Meningitis, especially the O1 capsule
- B. EHEC and EPEC make pedestals
- C. E. Coli frequently exchange genetic information via plasmids
- D. The H antigen refers to the flagellar protein
- E. The P type Pili are important in Urinary Tract Infections

89. What does EHEC not cause?

- A. Mild diarrhea
- B. Hemorrhagic colitis
- C. Afebrile watery diarrhea
- D. Hemolytic-uremic syndrome

Bacteria I (more than once, not at all)

- A. *Listeria monocytogenes*
- B. *Francisella tularensis*
- C. *Shigella dysenteriae*
- D. *Salmonella typhi*
- E. *Salmonella typhimurium*
- F. *Salmonella choleraesuis*
- G. *Rickettsia Rickettsiae*
- H. *Neisseria gonorrhoeae*
- I. *Coxiella burnetii*
- J. *Chlamydia trachomatis*
- K. *Borrelia burgdorferi*

- 90. Express receptors for human transferrin and lactoferrin
- 91. Has IgA protease
- 92. Can cause vasculitis in atherosclerotic plaques
- 93. Grows well in macrophages, phagosome doesn't fuse with the lysosome
- 94. Macrophages undergo apoptosis when infected
- 95. Causes Rocky Mountain Spotted Fever
- 96. Grows intracellularly in host cell, phagosome modified. Uses host ATP. Inclusion bodies formed
- 97. Produces an AB toxin that inactivates 60S rRNA
- 98. Can cause lymphogranuloma venereum (L1, L2, L3)
- 99. Can undergo antigenic and phase variation to avoid immune clearance
- 100. Lyses phagosome, lives in cytoplasm, uses actin. Acquired from food.
- 101. Lyses phagosome, lives in cytoplasm, uses actin. Acquired from people or oral-fecal.
- 102. Lives in phagolysosome, only active at low pH
- 103. Prior to infection, switch in outer proteins from OspA to OspC

Bacteria II (more than once, not at all)

- A. *Streptococcus pneumoniae*
- B. *Mycobacterium tuberculosis*
- C. *Chlamydia pneumoniae*
- D. *Pseudomonas Aeruginosa*
- E. *Mycoplasma pneumoniae*
- F. *Legionella pneumophila*
- G. *Haemophilus influenzae*
- H. *Bordatella pertussis*
- I. *Corynebacterium diphtheriae*

104. Leading cause of atypical pneumonia

105. G – Aerobe, has a toxin that ADP-ribosylates EF2 to block protein synth

106. Has been found in atherosclerotic lesions

107. Modifies host cell's phagosome using type IV secretion system

108. Cystic fibrosis

109. Cell wall antimicrobial agents don't work

110. Makes a toxin that ADP ribosylates a G protein to increase cAMP

111. Attaches to respiratory epithelium with P1, an adhesive protein

112. Has many virulence factor, including leukocidin, phospholipase C, and Exotoxins

113. Lives in alveolar macrophage, risk factors are smoking and COPD

114. Make an adenylate cyclase toxin

115. Undergoes "altruistic autolysis"

116. Gram + Rod, has a toxin that ADP-ribosylates EF2 to block protein synth

**Answers:**

- |            |            |
|------------|------------|
| 1. I       | 59. A      |
| 2. G       | 60. G      |
| 3. I       | 61. B      |
| 4. L       | 62. C      |
| 5. G       | 63. A      |
| 6. K       | 64. B      |
| 7. J       | 65. D      |
| 8. F       | 66. E      |
| 9. A       | 67. G      |
| 10. E      | 68. C      |
| 11. H      | 69. A      |
| 12. B      | 70. F      |
| 13. J      | 71. D      |
| 14. A      | 72. C      |
| 15. G      | 73. A      |
| 16. D      | 74. B or C |
| 17. J      | 75. A      |
| 18. J      | 76. H      |
| 19. G      | 77. F      |
| 20. A      | 78. C      |
| 21. C      | 79. D      |
| 22. G      | 80. B      |
| 23. H      | 81. A      |
| 24. B      | 82. D      |
| 25. D      | 83. A      |
| 26. B      | 84. D      |
| 27. K      | 85. A      |
| 28. B      | 86. D      |
| 29. A      | 87. A      |
| 30. J      | 88. A      |
| 31. L      | 89. C      |
| 32. C      | 90. H      |
| 33. E      | 91. H      |
| 34. H      | 92. F      |
| 35. J      | 93. D      |
| 36. B      | 94. C      |
| 37. I      | 95. G      |
| 38. E      | 96. J      |
| 39. J      | 97. C      |
| 40. F      | 98. J      |
| 41. L      | 99. H      |
| 42. N      | 100. A     |
| 43. O      | 101. C     |
| 44. E      | 102. K     |
| 45. O      | 103. K     |
| 46. F      | 104. E     |
| 47. C      | 105. D     |
| 48. C      | 106. C     |
| 49. D      | 107. F     |
| 50. H      | 108. D     |
| 51. A      | 109. E     |
| 52. E      | 110. H     |
| 53. H      | 111. E     |
| 54. G      | 112. D     |
| 55. F      | 113. F     |
| 56. H      | 114. H     |
| 57. G or H | 115. A     |
| 58. G      | 116. I     |