

FIRST MIDTERM EXAMINATION

(60 total points)

1. Name a food, eaten by a significant number of people worldwide, which is inherently toxic at the time it is harvested. (2 pts)  
**cassava (manioc); olives**
2. What kinds of problems associated with food safety are most often encountered during storage and distribution of food? (2 pts)  
**inadequate temperature control**
3. Name a method used in “fingerprinting” bacterial pathogens in investigating foodborne disease outbreaks. (2 pts)  
**PFGE, etc.**
4. Which system of estimating foodborne disease incidence uses data from diagnostic laboratories? (2 pts)  
**FoodNet**
5. List the **three** *Salmonella* syndromes, and name the **species** that is specific to humans. (4pts)  
**-Typhoid fever**  
**- Enteric fever**  
**- Gastroenteritis syndrome**  
**- typhi**
6. What is a leading vehicle for *Campylobacter* in the U.S.? (2 pts)  
**chicken**
7. Describe one prominent feature that differentiates bacteria of the genera *Campylobacter* and *Arcobacter*. (2 pts)  
***Arcobacter* is aerotolerant, will grow at temperatures <30°C**
8. What is the most severe illness caused by *Shigella* spp.? (2 pts)  
**bacillary dysentery**
9. Why is the *Clostridium perfringens* **toxin** not usually formed in **food**? (3 pts)  
***C. perfringens* toxin is a by-product of sporulation. Since the agent generally sporulates in the intestines, but not in food, the toxin is not formed in food.**

10. What is the difference between **sporulation** and **germination**? (2 pts)  
**sporulation: formation of spores**  
**germination: production of the vegetative cells from the spore form**
11. What is the most common reservoir of *Yersinia enterocolitica*? (2 pts)  
**swine**
12. Which pathogen, associated with seafood, can infect both via the digestive tract and via wounds in the skin? (2 pts)  
***Vibrio vulnificus***
13. Which agent, whose vehicle is drinking water in much of the world, uses oysters as its vehicle on the Gulf Coast of the U.S.? (2 pts)  
***Vibrio cholerae***
14. *Listeria* is of concern in what type of **food products**? (1 pt)  
**ready to eat, especially meats**
15. Is *Listeria* characterized as a psychrotroph **or** psychrophile? (1 pt)  
**psychrotroph**
16. Name a well-defined high risk group associated with listeriosis. (2 pts)  
**Pregnant women, neonates**
17. Why is EHEC sometimes abbreviated STEC or VTEC? (2 pts)  
**EHEC produce a toxin called shigatoxin or verotoxin.**
18. Contrast the host ranges of ETEC and EHEC. (2 pts)  
**ETEC is largely human-specific, whereas EHEC is a zoonosis with a reservoir in cattle.**
19. Before **pasteurized milk** was available in the U.S., what was one of the prevalent milk-borne diseases? (2 pts)  
**Brucellosis, tuberculosis (scarlet fever, diphtheria)**
20. Which pathogen's heat resistance provided the basis for the conditions of high-temperature, short-time **pasteurization** of milk? (2 pts)  
***Mycobacterium bovis***
21. Altering the intestinal flora due to antibiotic treatment may lead which **microorganism** (classified as rarely causing foodborne illness) to produce toxin and cause watery diarrhea? (2 pts)  
***Clostridium difficile***

22. Name a hepatitis virus that is **not** transmitted by a fecal-oral cycle. (2 pts)  
**Hepatitis B, C, or D**
23. Why is development of a norovirus vaccine not contemplated? (2 pts)  
**Immunity, even after infection, is transient.**
24. What are the most important “risk materials” in prevention of vCJD? (2 pts)  
**(bovine) brain and spinal cord**
25. How does transmission of BSE differ from transmission of chronic wasting disease? (2 pts)  
**BSE is transmitted among cattle by feeding meat-and-bone meal containing risk materials; CWD prions are evidently shed in feces and remain infectious in soil that is later ingested by susceptible deer.**
26. Why are *Cryptosporidium hominis* and *C. parvum* more likely than most protozoa to be transmitted via drinking water? (2 pts)  
**Their oocysts are extremely small and difficult to remove by filtration; both are very chlorine-resistant.**
27. Which of the protozoa discussed are human-specific? (3 pts)  
***Cryptosporidium hominis*, *Cyclospora cayetanensis*, *Entamoeba histolytica***
28. What animal, other than swine, is a significant vehicle for *Trichinella spiralis*? (2 pts)  
**bears**
29. Why is *Taenia solium* a greater threat to human health than *Taenia saginata*? (2 pts)  
**If *Taenia solium* eggs are ingested, they cause cysticercosis (often neurocysticercosis) in humans.**