

Environmental Health and Zoonosis

Public Health · Answer Key · 20 Questions

1. Which tick species is the primary vector for *Borrelia burgdorferi* in the northeastern United States?

- A) *Ixodes scapularis***
- B) *Dermacentor variabilis*
- C) *Amblyomma americanum*
- D) *Rhipicephalus sanguineus*

2. What is the primary reservoir host for the Hendra virus in Australia?

- A) Red Kangaroo
- B) *Pteropus* bats**
- C) Common Brushtail Possum
- D) Dingo

3. Which environmental condition is most strongly associated with the increased prevalence of *Schistosoma mansoni*?

- A) High soil salinity
- B) Low humidity levels
- C) Slow-moving freshwater**
- D) High ultraviolet exposure

4. What is the primary mode of transmission for the Hantavirus Pulmonary Syndrome (HPS) in the Americas?

- A) Bite of an infected flea
- B) Inhalation of aerosolized rodent excreta**
- C) Direct contact with avian saliva
- D) Consumption of contaminated groundwater

5. Which organism acts as the intermediate host for the liver fluke *Fasciola hepatica*?

- A) Freshwater snails**
- B) Mosquito larvae
- C) Soil nematodes
- D) Earthworms

6. The persistence of *Yersinia pestis* in the environment is most commonly associated with which rodent family?

- A) *Sciuridae***
- B) *Muridae*
- C) *Cricetidae*
- D) *Geomyidae*

7. Which environmental toxin, often found in contaminated seafood, is a neurotoxic methylmercury compound that biomagnifies up the food chain?

A) Methylmercury

- B) Polychlorinated biphenyls
- C) Dioxins
- D) Organophosphates

8. Which species of mosquito is the primary vector for the Zika virus in tropical and subtropical regions?

A) Aedes aegypti

- B) Culex pipiens
- C) Anopheles gambiae
- D) Culiseta inornata

9. What ecological phenomenon is defined as the 'dilution effect' in the context of disease ecology?

A) Decreased pathogen transmission in areas with high host biodiversity

- B) Increased pathogen mutation rates in monocultures
- C) Reduction of vector lifespan due to temperature
- D) Expansion of host range due to deforestation

10. Which pathogenic bacterium, often transmitted through contact with contaminated soil or water, causes Leptospirosis?

A) Leptospira interrogans

- B) Bacillus anthracis
- C) Clostridium tetani
- D) Burkholderia pseudomallei

11. What is the primary ecological driver for the emergence of Nipah virus outbreaks?

A) Expansion of intensive pig farming into bat habitats

- B) Increased global shipping of ornamental plants
- C) Overfishing of coastal reefs
- D) Spread of invasive fungal species

12. Which infectious agent is transmitted to humans primarily through the bite of a Triatomine bug?

A) Trypanosoma cruzi

- B) Plasmodium falciparum
- C) Leishmania donovani
- D) Babesia microti

13. In environmental health, what does the term 'biomagnification' describe?

- A) The concentration of a substance increasing as it moves up the food chain**
- B) The rapid growth of invasive species in degraded habitats
- C) The breakdown of pollutants by microbial action
- D) The increase in genetic diversity within a population

14. Which pathogen causes Lyme disease-like illness and is transmitted by the Lone Star tick (*Amblyomma americanum*)?

- A) *Borrelia lonestari***
- B) *Rickettsia rickettsii*
- C) *Ehrlichia chaffeensis*
- D) *Francisella tularensis*

15. Which environmental pollutant is specifically known to cause 'Minamata disease' due to its impact on the central nervous system?

- A) Mercury**
- B) Lead
- C) Arsenic
- D) Cadmium

16. What is the primary natural reservoir for the Ebola virus?

- A) Pteropodid fruit bats**
- B) Non-human primates
- C) Wild swine
- D) Rodent populations

17. Which type of radiation is classified as a Class 1 carcinogen by the IARC and is a natural environmental hazard found in soil and rocks?

- A) Radon gas**
- B) Microwave radiation
- C) Visible light
- D) Radio waves

18. The spread of West Nile Virus in North America is most significantly linked to which ecological vector?

- A) *Culex* mosquitoes**
- B) Ixodes ticks
- C) Tsetse flies
- D) Phlebotomine sandflies

19. What causes the zoonotic disease known as Q fever?

- A) *Coxiella burnetii***
- B) *Chlamydia trachomatis*
- C) *Brucella abortus*
- D) *Salmonella enterica*

20. Which heavy metal is a major public health concern due to its presence in contaminated groundwater, specifically in the Ganges Delta?

- A) Arsenic**
- B) Mercury
- C) Lead
- D) Cadmium