

OLD DOMINION UNIVERSITY
COLLEGE OF HEALTH SCIENCES
COMMUNITY AND ENVIRONMENTAL HEALTH PROFESSIONS

**ENVH 301
PRINCIPLES OF ENVIRONMENTAL HEALTH
FINAL EXAM**

98%

Student Name: Melinda Pierce

I will abide by the ODU Honor Code : _____

Please highlight, bold, or enter the correct answer for the questions below. This is an open book exam.

Multiple Choice 2 points each

1. Which of the following covers a narrow range from about 6 miles above the earth to the surface of the earth to the deepest ocean trenches, some of which are 36,000 feet deep?

- a. **Biosphere**
- b. Atmosphere
- c. Ecosystem
- d. Ozone layer

2. What Greek philosopher emphasized the role of the environment as an influence on people's health and health status in his work titled *On Airs, Waters, and Places*?

- a. Aristotle
- b. **Hippocrates**
- c. Galen
- d. Pliny the Elder

3. The British Parliament enacted the Public Health Act in 1848 to promote which of the following?

- a. Clean air
- b. **Clean water**
- c. Vaccines
- d. Safe working environments

4. During the first century CE, the toxic properties of sulfur and zinc were pointed out by which Roman scholar who invented a mask constructed from the bladder of an animal for protection against dust and metal fumes?

- a. Aristotle
- b. Hippocrates
- c. Galen
- d. Pliny the Elder

5. _____, a London surgeon, was significant to the history of environmental epidemiology because he is thought to be the first individual to describe an environmental cause of cancer.

- a. John Snow
- b. Sir Percival Pott
- c. John Graunt
- d. Walter Reed

6. The Nuisances Removal and Diseases Prevention Amendments bill was introduced in the British Parliament as a reform of Victorian public health legislation following the outbreak of what disease?

- a. Cholera
- b. Malaria
- c. Plague
- d. Smallpox

7. What type of study design makes a one-time assessment of the prevalence of disease in a sample that in most situations has been sampled randomly from the parent population of interest?

- a. Case-control studies
- b. Ecologic studies
- c. Cross-sectional studies
- d. Case series study

8. What type of study is among the weakest for making causal assertions, but can be useful for developing hypothesis for further study?

- a. Case-control studies
- b. Ecologic studies
- c. Cross-sectional studies
- d. Case series study

9. Supplemental vitamins reducing the effects of needed prescription medicines such as antibiotics is an example of what action?

- a. Synergism
- b. Antagonism
- c. Potentiation
- d. Coalitive interaction

10. What term describes repeated toxic exposure for 1 to 3 months?

- a. Acute
- b. Subacute
- c. Subchronic
- d. Chronic

11. The highest levels of what type of radiation demarcate the dichotomy between ionizing radiation and nonionizing radiation?

- a. Infrared radiation
- b. Ultraviolet radiation
- c. Low-frequency radiation
- d. Radio-frequency energy

12. The water (drinking water) delivered to the distribution system after treatment is referred to as which of the following?

- a. Ground water
- b. Source water
- c. Surface water
- d. Finished water

13. Which of the following, a main component of photochemical smog, has the sharp smell associated with sparks from electrical equipment?

- a. Ozone
- b. Carbon monoxide
- c. Sulfur dioxide
- d. Nitrogen dioxide

14. What medical condition is ranked among the most frequent types of foodborne illness in the United States?

- a. Botulism
- b. Shigellosis
- c. Salmonellosis
- d. Listeriosis

15. Which method for disposal of solid waste can be used to generate energy while at the same time reducing the volume and weight of waste?

- a. Composting
- b. Recycling
- c. Incineration
- d. Leaching

Very good!

True/False 1 point each

16. True or False? The presence of an environmental hazard may be the end product of disparities of power and privilege within a community.

17. True or False? Risk management involves the adoption of steps to lower or eliminate identified risks to acceptable levels (often as determined by a government agency that has taken input from the public into account).

18. True or False? With 100 million cases occurring each year, dengue fever is among the most significant mosquito-borne viral diseases that afflict humans.

19. True or False? The mosquito-borne Zika virus, linked with the development of a febrile rash, has been associated with adverse birth outcomes among pregnant women who become infected.

20. True or False? Beryllium has been studied in relation to elevated blood pressure and the occurrence of cardiovascular diseases.

- cadmium

21. **True** or False? Even at low levels, when it becomes deposited in the beds of lakes, rivers, and other bodies of water, mercury represents a potential hazard to human health.

22. True or **False**? Methyl isocyanate (MIC) was credited at one time for freeing a substantial segment of the world's population from the scourge of malaria and, consequently, with saving millions of persons from death due to malaria.

23. **True** or False? Polychlorinated biphenyls present in the environment tend to bioaccumulate in fish and other animals used for food and, in turn, impact human health.

24. **True** or False? Alpha particles lack the energy to penetrate even the outer layer of skin, so exposure to the outside of the body is not a major concern.

25. **True** or False? Waterborne diseases are a source of ongoing concern to the residents of the developing world, where waterborne diarrheal conditions take a toll in morbidity and mortality, and on tourists who travel in these areas.

26. True or **False**? Air pollution scientists attribute urban ozone, acid rain, and oxygen depletion of coastal waters to carbon monoxide (CO).
-Nitrogen Oxide

27. True or **False**? Foodborne infections result from other agents that do not cause infections directly but produce spores or toxins as they multiply in the food.
-intoxications

28. **True** or False? In order to dispose of hazardous materials, industrialized countries have adopted the practice of shipping them to developing countries that welcome cash payments for accepting the shipments.

29. **True** or False? Critical incident stress management (CISM) is a method of helping persons cope with the aftermath of the experience of a traumatic event.

30. **True** or False? Public health surveillance refers to the systematic and continuous gathering of information about the occurrence of diseases and other health phenomena.

Excellent!

Short Answer 2 points each

31. _____ **stochastic** _____ effects are those associated with low levels of exposure to radiation over long periods.
32. A(n) _____ **dirty bomb** _____ differs from an atomic bomb or other nuclear bomb in that the explosion, which disperses radioactive materials, is caused by conventional explosives and not by nuclear fission or fusion.
33. One of the most common sources of _____ **exposure to ultraviolet** _____ radiation is sunbathing, which is regarded as a popular and healthful pastime by many residents of sunny climates.
34. The most notorious waterborne outbreak of _____ **cryptosporidiosis** _____ in the United States occurred in southern Milwaukee in late March and early April of 1993.
35. The underlying factors responsible for _____ **cochlerea** _____ **cholera** _____ outbreaks are an inadequate infrastructure for processing water and migrations of large numbers of people to urban areas.
36. The term _____ **smog complex** _____ refers to eye irritation, irritation of the respiratory tract, chest pains, cough, shortness of breath, nausea, and headache associated with smog.
37. _____ **temperature inversion** _____ is an atmospheric condition during which a warm layer of air stalls above a layer of cool air that is closer to the surface of the earth.
38. Infections with _____ **Prions** _____ are regarded as the cause of bovine spongiform encephalopathy (BSE), a neurologic disease in cattle.
39. In a procedure known as _____ **metaphylaxis** _____, antimicrobials are given to an entire collection of animals for the purpose of curing disease among the sick animals and preventing disease among the remainder.

40. Primary sewage processing aims to remove large materials which can be composted or shipped to landfills.

41. composting toilets convert human excrement into a soil-like material that must be buried or hauled away for disposal. They require little water to operate and contain and deactivate pathogens in human wastes.

42. The US Occupational Safety and Health Administration (OSHA) defines Personal Protective Equipment PPE as apparatuses designed to protect employees from serious workplace injuries or illnesses resulting from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards.

43. In comparison to healthy individuals, workers who have preexisting diseases that affect circulation and oxygen carrying capacity of the blood are at increased risk of the effects of CO poisoning.

44. According to the Centers for Disease Control and Prevention (CDC), Unintentional poisoning are the leading cause of fatal and nonfatal injuries for persons aged 65 years and older.

Falls -2 points

45. In the United States, almost 40 million children and adolescents take place in organized sports and participation in these activities incurs the risk of TBI, which can cause long-lasting adverse health effects such as behavioral changes and memory loss.

Essay (will require at least 2-3 sentences per answer) 5 points each

46. Discuss the various types of ionizing radiation. (alpha, beta, gamma, and x-rays)
-Alpha: positively charged and made up of 2 protons and 2 neutrons from the atom's nucleus

-Beta: small, fast moving particles with a negative electrical charge that are emitted from an atom's nucleus during radioactive decay.

-Gamma: packets of energy called photons. It is Pure energy, its similar to visible light but have much higher energy.

-X-ray: similar to gamma rays. Photon of pure energy. Has the same basic properties of gamma rays but come from a different part of the atom. Emitted from processes outside the nucleus.

47. Discuss the significance of the guinea worm to waterborne diseases.

-located in small # of African countries

(1) mature (roundworms) forms larvae that enter the water supply

(2) the larvae infects small crustaceans in the water supply

-people ingest the larvae in unfiltered water

(3) when ingested the larvae mature into worms inside the body (abdominal cavity)

(4) female worms migrate to the human surface of the feet and produce painful blisters

(5) the worms erupt into lesions and when the human comes in contact with the unfiltered water they release larvae back into the water starting the cycle again into another human.

A nasty disease!

48. Explain the condition of sick building syndrome (SBS).

-when people from a occupied dwelling /building temporary experience health related issues to associated to being in the building with no specified cause

49. Differentiate between foodborne infections and foodborne intoxications.

Infections: induced by infectious agents (bacteria) that cause foodborne illness directly

Intoxications: introduced by agents that do not cause infections directly by producing spores or toxins as they multiply in food.

50. Explain the typical design of a landfill.

4 major parts:

-bottom-liner

-a system for collecting leachates

-a cover

-location for minimizing contaminated ground water

Good!