

NAME _____

Direction: Circle the letter of the answer that best completes the statement given.

1. The agency with the main responsibility for regulating transportation of all hazardous materials, including radioactive materials, is the:
 - a. U.S. Department of Energy (DOE).
 - b. U.S. Department of Transportation (DOT).
 - c. U.S. Environmental Protection Agency (EPA).
 - d. U.S. Nuclear Regulatory Commission (NRC).

2. The Nuclear Waste Policy Act of 1982 gave the responsibility for shipping spent fuel and high-level nuclear waste to a repository or storage facility to the:
 - a. U.S. Department of Energy (DOE).
 - b. U.S. Department of Transportation (DOT).
 - c. U.S. Environmental Protection Agency (EPA).
 - d. U.S. Nuclear Regulatory Commission (NRC).

3. Casks used to transport high-level waste and spent fuel to a repository or storage facility must be certified by the:
 - a. U.S. Department of Energy (DOE).
 - b. U.S. Department of Transportation (DOT).
 - c. U.S. Environmental Protection Agency (EPA).
 - d. U.S. Nuclear Regulatory Commission (NRC).

4. Cask designs can be tested using:
 - a. full scale test.
 - b. computer models.
 - c. scale-model testing.
 - d. all of the above.

5. Scale-model testing of a cask design includes a free drop test, a puncture test, a water immersion test, and exposure to:
 - a. extremely low temperatures.
 - b. corrosive chemicals.
 - c. jet-fuel fire.
 - d. all of the above.

6. New cask designs are being developed to ship spent fuel that has been removed from the reactor core for 10 years or more. One advantage of the new cask design is that the new casks will:
 - a. be more attractive.
 - b. be smaller so that the load per shipment will be reduced.
 - c. not be reusable.
 - d. carry a larger load so that the number of shipments can be reduced.

7. An example of an engineered barrier is:
 - a. zeolite.
 - b. the waste package.
 - c. the host rock.
 - d. absence of ground water.

8. An example of a natural barrier is:
 - a. the host rock.
 - b. the waste package.
 - c. the repository.
 - d. the waste form.

9. The waste form for spent fuel from nuclear reactors is:
 - a. glass made of boron and silicon and poured into stainless steel canisters.
 - b. zeolite mixed with strong alloys.
 - c. ceramic pellets sealed in strong alloy tubes.
 - d. a liquid poured into a zirconium canister.

10. The waste form for high-level waste produced in national defense activities is:
 - a. glass made of boron and silicon and poured into stainless steel canisters.
 - b. zeolite mixed with strong alloys.
 - c. ceramic pellets sealed in strong alloy tubes.
 - d. a liquid poured into a zirconium canister.

11. An advantage of using a glass form for disposal is that it is:
 - a. easily leached by escaping fluid.
 - b. recyclable.
 - c. not easily leached by groundwater.
 - d. difficult to produce due to lack of raw materials.

12. Backfilling the drifts after the waste is in place may:
 - a. enhance the transfer of heat from the waste to the surrounding rock.
 - b. relieve mechanical pressure on the waste package.
 - c. provide structural support for the overlying host rock.
 - d. all of the above.

13. When siting a repository, groundwater is an important consideration because:
 - a. groundwater can carry waste to the environment.
 - b. groundwater cannot carry waste to the environment.
 - c. repository workers will need drinking water.
 - d. groundwater is not present in dry climates.

14. The presence of zeolites at a repository site would be an advantage because they:
 - a. are not too expensive.
 - b. could filter waste from water.
 - c. make the mine stronger.
 - d. make mining easier.

15. The multiple barrier system consists of:
 - a. the host rock, shafts, and seals.
 - b. backfill, the host rock, and tunnels.
 - c. the waste package, the repository, and the host rock.
 - d. shafts, seals, and the waste package.

16. The underground facilities at a repository will be about _____ beneath the surface.
 - a. 50 feet
 - b. 100 feet
 - c. 500 feet
 - d. 1,000 feet

17. If 100 spent fuel shipments went by the same house every year, the increase in exposure to radiation would be:
 - a. more than the exposure received annually from watching TV.
 - b. about half the exposure received annually from watching TV.
 - c. about the same as exposure from background radiation.
 - d. about twice the average exposure from background radiation.

18. To help improve emergency preparedness, before certain shipments of spent fuel or nuclear waste are made, written notice is sent to:
 - a. the President of the U.S.
 - b. the Secretary of Defense.
 - c. the Governor or official of the State.
 - d. the State Head of Civilian Defense.

19. What is the name for the container that is usable throughout the transportation and storage activities leading to the disposal of spent nuclear fuel?
 - a. The Storage and Transportation Container (STC)
 - b. The Compatible Containment Unit (CCU)
 - c. The Multi-Purpose Canister (MPC)
 - d. The Spent Fuel Shipping Cask (SFSC)

20. People affected by decisions on waste management, such as an environmental organization or city government, are called:
 - a. Shareholders
 - b. Overseers
 - c. Onlookers
 - d. Stakeholders

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| 1. <u>B</u> | 11. <u>C</u> |
| 2. <u>A</u> | 12. <u>D</u> |
| 3. <u>D</u> | 13. <u>A</u> |
| 4. <u>D</u> | 14. <u>B</u> |
| 5. <u>C</u> | 15. <u>C</u> |
| 6. <u>D</u> | 16. <u>D</u> |
| 7. <u>B</u> | 17. <u>A</u> |
| 8. <u>A</u> | 18. <u>C</u> |
| 9. <u>C</u> | 19. <u>C</u> |
| 10. <u>A</u> | 20. <u>D</u> |