**Nuclear Power NUCLEAR POWER PLANT - NUCLEAR PROLIFERATION version B**

1. High-level radioactive waste management is a daunting problem because

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| --- | --- |
|  | a) they cannot be stored underground |
|  | b) the isotopes are short-lived |
|  | c) the isotopes are long-lived |

2. The Waste Isolation Pilot Plant in New Mexico

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| --- | --- |
|  | a) can no longer nuclear waste from production reactors because it is full |
|  | b) is currently taking nuclear waste from production reactors |
|  | c) was originally a research and development facility but is now under private ownership |

3. Uranium is approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_ than silver in the Earth's crust.

|  |  |
| --- | --- |
|  | a) 40 times less common |
|  | b) 4 times less common |
|  | c) 4 times more common |
|  | d) 40 times more common |

4. The reprocessing of spent Uranium worsens the problem of long term waste storage

|  |  |
| --- | --- |
|  | a) true |
|  | b) false |

5. It has been estimated that if Japan had never adopted nuclear power, the use of other fuels would have caused more lost years of life.

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| --- | --- |
|  | a) true |
|  | b) false |

6. One concern about fast breeder reactors is that the uranium reserves will be exhausted more quickly

|  |  |
| --- | --- |
|  | a) true |
|  | b) false |

7. The Megatons to Megawatts Program

|  |  |
| --- | --- |
|  | a) purchases spent fuel that could otherwise be used to make weapons, and is considered a failure |
|  | b) converts weapons grade uranium into fuel for commercial reactors, and is considered a success |
|  | c) converts weapons grade uranium into fuel for commercial reactors, and is considered a failure |
|  | d) purchases spent fuel that could otherwise be used to make weapons, and is considered a success |

8. Fast breeder reactors use uranium-238, an isotope which constitutes \_\_\_\_\_ of naturally occurring uranium

|  |  |
| --- | --- |
|  | a) 3% |
|  | b) 99% |
|  | c) 30% |
|  | d) 60% |
|  | e) 1 % |

9. A 2008 report from Oak Ridge National Laboratory concluded that the dose to the public from radiation from coal plants is \_\_\_\_\_\_\_\_\_\_\_ the radiation nuclear plants (excluding the possibility of accidental discharges of radioactive material

|  |  |
| --- | --- |
|  | a) 100 times more than |
|  | b) 10 times more than |
|  | c) about the same as |
|  | d) 10 times less than |
|  | e) 100 times less than |

10. Fuel rods spend typically \_\_\_\_\_\_ total now inside the reactor, generally until \_\_\_\_\_ of their uranium has been fissioned

|  |  |
| --- | --- |
|  | a) 6 months;   3% |
|  | b) 6 months;   30% |
|  | c) 6 years;   3% |
|  | d) 6 years;   30% |

11. After about \_\_\_\_\_\_\_\_\_\_ in a spent fuel pool the spent fuel can be moved to dry storage casks or reprocessed.

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|  | a) 5 months |
|  | b) 50 years |
|  | c) 5 years |

12. In a PWR reactor, the water is kept under high pressure

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|  | a) to reduce the heat required to boil it |
|  | b) to prevent it from boiling |
|  | c) only in the reactor core |
|  | d) to slow down the neutrons |

13. It has been estimated that farmland lost due to Fukushima accident will not be farmed for centuries

|  |  |
| --- | --- |
|  | a) true |
|  | b) false |

14. It has been estimated that farmland lost due to Fukushima accident will be again useful for farming in 40-60 years

|  |  |
| --- | --- |
|  | a) true |
|  | b) false |

15. A 2008 report from Oak Ridge National Laboratory concluded that the dose to the public from radiation from properly run nuclear plants is \_\_\_\_\_\_\_\_\_\_\_ the radiation created by burning coal

|  |  |
| --- | --- |
|  | a) 10 times less than |
|  | b) 100 times less than |
|  | c) 10 times more than |
|  | d) about the same as |
|  | e) 100 times more than |

16. Reactors that use natural (unenriched) uranium are

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| --- | --- |
|  | a) considered impossible |
|  | b) are already in use |
|  | c) are likely to emerge in the next few decades |

17. Nuclear power plants typically have

|  |  |
| --- | --- |
|  | a) low capital costs and high fuel costs |
|  | b) high capital costs and low fuel costs |
|  | c) high capital costs and high fuel costs |
|  | d) low capital costs and low fuel costs |

18. The reprocessing of spent Uranium helps alleviate the problem of long term waste storage

|  |  |
| --- | --- |
|  | a) true |
|  | b) false |

19. One concern is that long term nuclear waste management is now being performed by a number of private waste management companies

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| --- | --- |
|  | a) true |
|  | b) false |

20. In the United States, reprocessing of spent Uranium

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| --- | --- |
|  | a) provides 5% of our fuel needs which is consumed within the United states |
|  | b) is not allowed due to waste management concerns |
|  | c) provides 20% of our fuel needs and allows the United States to export nuclear fuel |
|  | d) is not allowed due to nuclear weapon proliferation concerns |

21. How many latent (cancer) deaths are estimated to result from the Three Mile Island accident?

|  |  |
| --- | --- |
|  | a) zero |
|  | b) from 0 to 1000 |
|  | c) from 4000 to 25,000 |