

# Nuclear Energy Fundamentals

Nuclear Energy · Practice Test · 20 Questions

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**1. What is the most common fuel used in nuclear power reactors?**

- A) Coal
- B) Uranium-235
- C) Hydrogen
- D) Natural Gas

**2. Which process involves splitting an atom's nucleus into smaller parts to release energy?**

- A) Nuclear Fusion
- B) Chemical Combustion
- C) Nuclear Fission
- D) Radioactive Decay

**3. What is the primary product of a nuclear power plant?**

- A) Electricity
- B) Steam
- C) Waste heat
- D) Radioactive isotopes

**4. Inside a nuclear reactor, what are used to absorb neutrons and control the speed of the chain reaction?**

- A) Coolant pipes
- B) Turbine blades
- C) Control rods
- D) Concrete shields

**5. Which subatomic particle is released during nuclear fission to trigger further reactions?**

- A) Proton
- B) Electron
- C) Neutron
- D) Positron

**6. What is the main role of the cooling system in a nuclear power plant?**

- A) To produce steam
- B) To prevent the reactor from overheating
- C) To generate electricity
- D) To store spent fuel

**7. Which part of a nuclear power plant generates the electricity?**

- A) Reactor core
- B) Cooling tower
- C) Turbine and generator
- D) Containment building

**8. Nuclear power is considered a 'low-carbon' energy source because it does not produce what during operation?**

- A) Carbon dioxide
- B) Water vapor
- C) Thermal energy
- D) Radioactive waste

**9. Where is the nuclear fuel stored inside a reactor?**

- A) In the turbine
- B) In the reactor core
- C) In the cooling tower
- D) In the steam generator

**10. What is the purpose of the containment building in a nuclear power plant?**

- A) To boil water
- B) To store electricity
- C) To prevent the release of radioactive materials
- D) To house the staff

**11. Which of the following is a byproduct of nuclear fission that requires long-term management?**

- A) Oxygen gas
- B) Spent nuclear fuel
- C) Helium
- D) Water

**12. What state of matter is the water inside the reactor's primary loop usually kept in to transfer heat?**

- A) Plasma
- B) Solid
- C) Liquid
- D) Gas

**13. What is the source of the heat that turns water into steam in a nuclear plant?**

- A) Friction
- B) Chemical burning
- C) Nuclear fission
- D) Sunlight

**14. Approximately what percentage of the world's electricity is generated by nuclear power?**

- A) 10%
- B) 50%
- C) 75%
- D) 90%

**15. Which element is often used as a moderator to slow down neutrons in a reactor?**

- A) Lead
- B) Gold
- C) Water or Graphite
- D) Iron

**16. What is the primary function of the steam generated in a nuclear plant?**

- A) To power the turbine
- B) To cool the fuel
- C) To produce hydrogen
- D) To clean the reactor

**17. Nuclear fusion, the process that powers the Sun, involves doing what to atomic nuclei?**

- A) Splitting them
- B) Combining them
- C) Cooling them
- D) Freezing them

**18. Which of these describes the main advantage of nuclear energy in terms of resource density?**

- A) It requires no maintenance
- B) It uses very little fuel to produce large amounts of energy
- C) It is free to build
- D) It never creates waste

**19. What do we call the specific type of chain reaction that continues on its own inside a reactor?**

- A) Self-sustaining
- B) Explosive
- C) Intermittent
- D) Flickering

**20. In a nuclear power plant, what is the role of the condenser?**

- A) To turn steam back into water
- B) To split uranium atoms
- C) To store electricity
- D) To burn excess fuel