Nuclear Fusion Quiz PDF

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What conditions are necessary for nuclear fusion to occur? (Select all that apply)

- [ ] High temperature
- [ ] Low pressure
- [ ] High pressure
- [ ] Low temperature

Which international project is currently the largest fusion experiment?

- ◯ CERN
- ◯ ITER
- ◯ LHC
- ◯ NASA

Which of the following is a potential benefit of nuclear fusion?

- ◯ High greenhouse gas emissions
- ◯ Limited fuel supply
- ◯ Minimal radioactive waste
- ◯ High energy costs

Which elements are primarily involved in fusion reactions? (Select all that apply)

- [ ] Hydrogen
- [ ] Helium
- [ ] Uranium
- [ ] Plutonium

What are the potential economic impacts of successfully developing nuclear fusion as an energy source?

Explain why nuclear fusion is considered a safer alternative to nuclear fission.

What is the most common fuel used in nuclear fusion reactions?

- ◯ Uranium
- ◯ Plutonium
- ◯ Deuterium and Tritium
- ◯ Helium

Which of the following are advantages of nuclear fusion over fission? (Select all that apply)

- ☐ Abundant fuel supply
- ☐ Produces more radioactive waste
- ☐ No greenhouse gas emissions
- ☐ Higher risk of meltdown

What is nuclear fusion?

- ◯ The splitting of a heavy nucleus into lighter nuclei
- ◯ The combination of two light atomic nuclei to form a heavier nucleus
- ◯ The decay of radioactive isotopes
- ◯ The process of electrons orbitating a nucleus

Which of the following are types of fusion reactors? (Select all that apply)

- [ ] Tokamak
- [ ] Stellarator
- [ ] Cyclotron
- [ ] InertIAL confinement

What is the primary product of a deuterium-tritium fusion reaction?

- ◯ Carbon dioxide
- ◯ Helium
- ◯ Uranium
- ◯ Hydrogen

Which device is primarily used to confine plasma in nuclear fusion experiments?

- ◯ Cyclotron
- ◯ Tokamak
- ◯ Particle accelerator
- ◯ Reactor core

Which of the following powers the sun?

- ◯ Nuclear fission
- ◯ Chemical reactions
- ◯ Nuclear fusion
- ◯ Gravitational collapse

What is the main challenge in achieving practical nuclear fusion?

- ◯ Lack of fuel
- ◯ Controlling the high temperatures and pressures
- ◯ ExcessIVE radioactive waste
- ◯ High greenhouse gas emissions

Describe the role of magnetic confinement in a tokamak reactor.

Discuss the significance of achieving net positive energy output in fusion research.

What are the expected environmental benefits of nuclear fusion? (Select all that apply)

- [ ] Reduction in air pollution
- [ ] Increased carbon footprint
- [ ] Minimal radioactive waste
- [ ] Sustainable energy source

What are the challenges faced by nuclear fusion research? (Select all that apply)

- [ ] Achieving net positive energy output
- [ ] High cost of development
- [ ] ExcessIVE greenhouse gas emissions
- [ ] Sustaining reactions for long periods

What are the main scientific and engineering challenges that need to be overcome to make nuclear fusion a viable energy source?

How does the fusion process in stars differ from that in experimental reactors on Earth?