HOW NATURAL ARE NATURAL HAZARDS? EXPLAIN BASED ON ITS ONSET, SEVERITY, CONTROLLING CAPACITY, AND NATURE OF THE STUDY AREA IN CONNECTION WITH DISASTER PREPAREDNESS.

SOLID-STATE BATTERIES

- Description: Use solid electrolytes instead of liquid ones found in traditional lithium-ion batteries.
- Benefits: Higher energy density, improved safety, and longer lifespan

FLOW BATTERIES

- Types: Vanadium redox flow batteries, zinc-bromine flow batteries.
- Benefits: Scalability, long cycle life, and ability to store large amounts of energy.

HYDROGEN FUEL CELLS

- Description: Convert hydrogen into electricity through a chemical reaction.
- Benefits: High energy density, long-term storage potential, and zero emissions when using green hydrogen.

PUMPED HYDRO STORAGE

- Description: Uses gravity to store and release energy by moving water between two reservoirs at different elevations.
- Benefits: High efficiency, large capacity, and long lifespan.

COMPRESSED AIR ENERGY STORAGE (CAES)

- Description: Stores energy by compressing air in underground caverns and releasing it to generate electricity.
- Benefits: Large-scale storage, long duration, and integration with renewable energy sources.

FLYWHEEL ENERGY STORAGE

- Description: Uses a rotating mass to store kinetic energy and release it when needed.
- Benefits: High power output, rapid response, and long cycle life.