Waves Energy Conversion

1. What causes water waves to form?

A. Earthquakes only
B. Wind or disturbances on the water surface
C. Sound waves underwater
D. Solar energy

2. Water waves move water in what type of motion?

A. Straight line
B. Small circles (orbital motion)
C. Only up and down
D. Only back and forth

3. In water waves, what is the transverse component?

A. Water moving up and down perpendicular to wave direction
B. Water moving back and forth along the wave direction
C. Water moving in a straight line
D. Water staying still

4. In water waves, what is the longitudinal component?

A. Water rising and falling perpendicular to wave motion
B. Water moving back and forth parallel to wave motion
C. Water staying stationary
D. Water spinning in a turbine

5. Waves can be used to generate electricity through what type of energy transformation?

A. Mechanical → Kinetic → Potential
B. Kinetic → Mechanical → Electrical
C. Electrical → Mechanical → Kinetic
D. Potential → Thermal → Electrical

6. Which of the following is an example of ocean wave energy conversion?

A. Solar panel
B. Oscillating water column
C. Wind turbine
D. Fossil fuel generator

7. How do dams produce electricity?

A. By converting sunlight directly into electricity
B. By storing water, then letting it flow through turbines
C. By using wind to turn propellers
D. By heating water with microwaves

8. Which of the following is a benefit of using dams for energy?

A. Creates greenhouse gases
B. Provides reliable, clean energy
C. Increases air pollution
D. Causes water waves to stop

9. Solar panels convert which type of energy into electricity?

A. Kinetic energy from water
B. Electromagnetic energy from sunlight
C. Mechanical energy from turbines
D. Sound energy from vibrations

10. Wind turbines generate electricity by converting which type of energy?

A. Air → Mechanical → Electrical
B. Water → Mechanical → Electrical
C. Sunlight → Heat → Electrical
D. Sound → Vibrations → Electrical