**Answer the questions:**

1. What is thermodynamics?

Thermodynamics is the study of the relationships between heat, work, and energy.

1. Where can thermodynamics be applied?

Thermodynamics can be applied a clear application to chemistry, biology, and other sciences.

1. How can physical life be described?

Physical life itself can be described as a continual thermodynamic cycle of transformations between heat and energy.

1. Are transformations perfectly efficient?

These transformations are never perfectly efficient, as the second law of thermodynamics shows.

1. Can the work output of a system be greater than the net energy input?

The work output of a system can never be greater than the net energy input. (the first law of thermodynamics demonstrates).

1. Is it possible to create a perpetual motion machine?

It is impossible to create a perpetual motion machine.

1. What creations were made due to the laws of thermodynamics?

The internal combustion engine and refrigerator.

1. How can any physical system be described?

It can be described by specifying its properties, such as pressure, temperature, or chemical composition.

1. What do the laws of thermodynamics predict?

Predict the equilibrium state of the system.

**A preposition or a conjunction:**

1. as
2. between
3. than
4. of
5. as
6. to
7. by

**Insert a necessary word or word combination:**

1. thermodynamics
2. equilibrium
3. external constraints
4. perpetual motion machine
5. transformations
6. physical system
7. internal combustion engine
8. predict
9. efficient
10. output
11. application