

Exercises to the text "Thermodynamics"

1. Answer the questions to the text:

1. What is thermodynamics?

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

2. Where can thermodynamics be applied?

Thermodynamics can be used in chemistry, physics, biology and other sciences.

3. How can physical life be described?

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

4. Are transformations perfectly efficient?

According to the second law of thermodynamics, transformations are never absolutely effective.

5. 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.

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

According to the first law of thermodynamics, transformations are never absolutely effective. Therefore, it is impossible to create a perpetual motion machine.

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

Due to the laws of thermodynamics, an internal combustion engine and a refrigerator were created.

8. How can any physical system be described?

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

9. What do the laws of thermodynamics predict?

Three laws of thermodynamics predict the equilibrium state of the system.

2. Insert a preposition or a conjunction if necessary:

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



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

The work output of a system can never be greater than the net energy input.

The three laws of thermodynamics describe these changes and predict the equilibrium state of the system.

The laws of thermodynamics made possible such highly useful creations as the internal combustion engine and the refrigerator.

It has a clear application to chemistry, biology, and other sciences.

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

Any physical system will spontaneously approach an equilibrium.

3. Insert a necessary word or word combination:

Thermodynamics, application, transformations, efficient, output, input, perpetual motion machine, internal combustion engine, equilibrium, external constraints, predict, physical system

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

Any physical system will spontaneously approach an equilibrium.

If external constraints are allowed to change, these properties generally change.

Many industrialists of the early nineteenth century believed it might be possible to create a perpetual motion machine.

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

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

The laws of thermodynamics made possible such creations as the internal combustion engine and the refrigerator.

The three laws of thermodynamics describe these changes and predict the equilibrium state of the system.

The transformations are never perfectly efficient.

The work output of a system can never be greater than the net energy input.

Thermodynamics has a clear application to chemistry, biology, and other sciences.

