

History of Thermodynamics

Thermodynamics · Answer Key · 20 Questions

1. Which scientist is credited with coining the term 'thermodynamics' in 1849?

- A) Lord Kelvin**
- B) James Prescott Joule
- C) Rudolf Clausius
- D) Sadi Carnot

2. Who wrote the foundational work 'Reflections on the Motive Power of Fire' in 1824?

- A) Benjamin Thompson
- B) Sadi Carnot**
- C) Ludwig Boltzmann
- D) Max Planck

3. Which unit of energy was named in honor of the scientist who demonstrated the mechanical equivalent of heat?

- A) Watt
- B) Newton
- C) Joule**
- D) Pascal

4. Rudolf Clausius introduced which fundamental thermodynamic concept in 1865?

- A) Enthalpy
- B) Entropy**
- C) Gibbs Free Energy
- D) Internal Energy

5. Who was the first person to state the Second Law of Thermodynamics in its modern form?

- A) Rudolf Clausius**
- B) William Rankine
- C) James Clerk Maxwell
- D) Robert Mayer

6. What century saw the most significant developments in classical thermodynamics?

- A) 17th Century
- B) 18th Century
- C) 19th Century**
- D) 20th Century

7. Benjamin Thompson, Count Rumford, famously observed heat being generated by the boring of which objects?

- A) Steam engines
- B) Cannons**
- C) Steam locomotives
- D) Coal furnaces

8. The temperature scale that starts at absolute zero is named after which physicist?

- A) Anders Celsius
- B) Daniel Fahrenheit
- C) Lord Kelvin**
- D) Isaac Newton

9. Which scientist is known for developing the 'Maxwell's Demon' thought experiment in 1867?

- A) James Clerk Maxwell**
- B) Ludwig Boltzmann
- C) John Dalton
- D) Michael Faraday

10. The concept of 'caloric' was an early 19th-century theory that incorrectly described heat as what?

- A) A type of motion
- B) An invisible fluid**
- C) A form of light
- D) A magnetic wave

11. Ludwig Boltzmann is famous for linking entropy to which branch of science?

- A) Statistical mechanics**
- B) Fluid dynamics
- C) Nuclear physics
- D) Optics

12. In 1842, who was one of the first to propose the law of conservation of energy?

- A) Robert Mayer**
- B) Nicolas Léonard Sadi Carnot
- C) James Watt
- D) Thomas Newcomen

13. Which invention significantly motivated the early study of thermodynamics in the 18th and 19th centuries?

- A) The lightbulb
- B) The steam engine**
- C) The battery
- D) The telescope

14. What is the surname of the scientist who formulated the Third Law of Thermodynamics in 1906?

- A) Nernst**
- B) Planck
- C) Einstein
- D) Bohr

15. Which city hosted the 1911 Solvay Conference, where thermodynamic principles were debated alongside quantum theory?

- A) London
- B) Paris
- C) Brussels**
- D) Berlin

16. Which scientist experimentally verified that heat is a form of energy using a paddle-wheel apparatus?

- A) James Prescott Joule**
- B) Lord Kelvin
- C) Sadi Carnot
- D) Rudolf Clausius

17. The 'zeroth law' of thermodynamics was formally defined as a law in which century?

- A) 18th Century
- B) 19th Century
- C) 20th Century**
- D) 17th Century

18. What substance did early thermodynamicists frequently use to demonstrate heat expansion?

- A) Iron
- B) Mercury**
- C) Ice
- D) Water vapor

19. Which Nobel Prize winner was a key figure in the development of chemical thermodynamics?

- A) J. Willard Gibbs
- B) Max Planck
- C) Walther Nernst**
- D) Albert Einstein

20. Before 'thermodynamics' was used, the study was often referred to by what name?

- A) Calorics**
- B) Energetics
- C) Mechanics of heat
- D) Kinetic theory