

Foundations of Physics

Physics · Answer Key · 25 Questions

1. What is the standard unit of force in the International System of Units (SI)?

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

2. Which form of energy is associated with the motion of an object?

- A) Potential energy
- B) Chemical energy
- C) Kinetic energy**
- D) Elastic energy

3. What is the speed of light in a vacuum approximately equal to?

- A) 300,000 km/s**
- B) 1,000 km/s
- C) 10,000 km/s
- D) 50,000 km/s

4. Which subatomic particle carries a negative electrical charge?

- A) Proton
- B) Neutron
- C) Electron**
- D) Positron

5. What phenomenon causes light to bend when it passes from one medium to another?

- A) Reflection
- B) Diffraction
- C) Refraction**
- D) Polarization

6. According to Newton's first law, what must happen for an object's state of motion to change?

- A) Friction
- B) An unbalanced force**
- C) Gravity
- D) Constant speed

7. Which state of matter has a definite volume but no definite shape?

- A) Solid
- B) Gas
- C) Plasma

D) Liquid

8. What is the primary source of the Earth's magnetic field?

- A) The Moon
- B) Solar wind

C) The Earth's molten outer core

- D) The atmosphere

9. What term describes the rate at which work is done?

A) Power

- B) Energy
- C) Force
- D) Momentum

10. Which color of visible light has the longest wavelength?

- A) Violet
- B) Blue
- C) Green

D) Red

11. What is the freezing point of water on the Celsius scale?

A) 0 degrees

- B) 32 degrees
- C) 100 degrees
- D) 273 degrees

12. What describes the total amount of matter in an object?

- A) Weight
- B) Volume
- C) Density

D) Mass

13. Which law states that energy cannot be created or destroyed, only transformed?

A) Law of Inertia

B) Law of Conservation of Energy

- C) Hooke's Law
- D) Ohm's Law

14. What do we call a material that does not allow electricity to flow through it easily?

- A) Conductor
- B) Semiconductor
- C) Insulator**
- D) Superconductor

15. What is the center of an atom called?

- A) Electron cloud
- B) Nucleus**
- C) Shell
- D) Orbit

16. What force pulls objects toward the center of the Earth?

- A) Magnetism
- B) Friction
- C) Gravity**
- D) Tension

17. What happens to the pressure of a gas if its volume is decreased at a constant temperature?

- A) It decreases
- B) It increases**
- C) It remains the same
- D) It becomes zero

18. Which simple machine consists of a rigid bar pivoting on a fulcrum?

- A) Pulley
- B) Lever**
- C) Screw
- D) Wedge

19. What is the SI unit for electric resistance?

- A) Volt
- B) Ampere
- C) Ohm**
- D) Watt

20. What term describes the distance between two consecutive peaks of a wave?

- A) Amplitude
- B) Frequency
- C) Period

D) Wavelength

21. Which type of radiation consists of high-energy electromagnetic waves with the shortest wavelengths?

- A) Radio waves
- B) Microwaves

C) Gamma rays

- D) Visible light

22. What is the primary method of heat transfer in solids?

- A) Convection
- B) Radiation

C) Conduction

- D) Evaporation

23. Which of these is a measure of the average kinetic energy of particles in a substance?

- A) Heat

B) Temperature

- C) Density
- D) Pressure

24. What is the phenomenon where a wave strikes a surface and bounces off?

A) Reflection

- B) Refraction
- C) Dispersion
- D) Absorption

25. Which scientist is credited with the formulation of the laws of motion and universal gravitation?

- A) Albert Einstein
- B) Nikola Tesla

C) Isaac Newton

- D) Galileo Galilei