

Middle School Physics Mastery

Physics · Answer Key · 18 Questions

1. What is the SI unit for luminous intensity, a measure of the visible light emitted from a source?

- A) Lux
- B) Candela**
- C) Lumen
- D) Watt

2. Which of the following is an example of an exothermic reaction, releasing thermal energy into its surroundings?

- A) Melting of ice
- B) Evaporation of water
- C) Combustion of wood**
- D) Dissolving of sugar in water

3. In a series circuit, if the resistance of one component increases, what happens to the total current flowing through the circuit, assuming the voltage remains constant?

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

4. What phenomenon causes a rainbow to form by the dispersion of sunlight into its constituent colors?

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

5. Which type of electromagnetic radiation has the shortest wavelength and highest frequency, making it highly energetic?

- A) Infrared radiation
- B) Ultraviolet radiation
- C) Gamma rays**
- D) Radio waves

6. What is the principle that states that pressure applied to an enclosed fluid is transmitted undiminished to every portion of the fluid and the walls of the containing vessel?

- A) Archimedes' Principle
- B) Bernoulli's Principle
- C) Pascal's Principle**
- D) Huygens' Principle

7. A transformer uses which physical principle to change the voltage of alternating current?

- A) Ohm's Law
- B) Faraday's Law of Induction**
- C) Ampere's Law
- D) Coulomb's Law

8. Which of Newton's Laws of Motion states that for every action, there is an equal and opposite reaction?

- A) First Law
- B) Second Law
- C) Third Law**
- D) Law of Universal Gravitation

9. What is the SI unit of power, defined as the rate at which work is done or energy is transferred?

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

10. When light passes from a denser medium to a less dense medium, and the angle of incidence exceeds the critical angle, what phenomenon occurs?

- A) Diffraction
- B) Total internal reflection**
- C) Scattering
- D) Dispersion

11. What is the name for the phenomenon where a sound wave bends around obstacles or spreads out after passing through an opening?

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

12. Which property of matter describes its resistance to a change in its state of motion?

- A) Mass
- B) Weight
- C) Inertia**
- D) Momentum

13. What is the term for the transfer of heat through direct contact between particles?

- A) Convection
- B) Radiation
- C) Conduction**
- D) Absorption

14. In the context of electrical resistance, what is the relationship described by Ohm's Law?

- A) Resistance is directly proportional to voltage and inversely proportional to current.
- B) Resistance is inversely proportional to voltage and directly proportional to current.
- C) Voltage is directly proportional to current and resistance.
- D) Current is directly proportional to voltage and inversely proportional to resistance.**

15. Which type of mirror always forms a virtual, upright, and diminished image?

- A) Concave mirror
- B) Convex mirror**
- C) Plane mirror
- D) Spherical mirror

16. What is the measure of the average kinetic energy of the particles within a substance?

- A) Heat
- B) Temperature**
- C) Thermal energy
- D) Specific heat capacity

17. What is the fundamental unit of electric charge?

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

18. Which wave characteristic refers to the maximum displacement or distance moved by a point on a vibrating body or wave measured from its equilibrium position?

A) Wavelength

B) Frequency

C) Period

D) Amplitude