

1. What is the unit of force in mechanics?

- A. Joule
- B. Watt
- C. Newton ✓
- D. Pascal

Answer: C

2. Which law states that for every action, there is an equal and opposite reaction?

- A. Newton's First Law
- B. Newton's Second Law
- C. Newton's Third Law ✓
- D. Law of Gravitation

Answer: C

3. What is the formula for Ohm's Law?

- A.  $P = IV$
- B.  $V = IR$  ✓
- C.  $F = ma$
- D.  $Q = mc\Delta T$

Answer: B

4. Which of the following is a renewable energy source?

- A. Coal
- B. Oil
- C. Solar energy ✓
- D. Natural gas

Answer: C

5. The ability of a material to resist being deformed by force is called:

- A. Elasticity ✓
- B. Conductivity
- C. Magnetism
- D. Density

Answer: A

6. Which particle is responsible for electric current?

- A. Proton
- B. Neutron
- C. Electron ✓
- D. Photon

Answer: C

7. What does a magnetic field surround?

- A. A moving electron ✓
- B. A resting electron
- C. A piece of wood
- D. A plastic rod

Answer: A

8. Which branch of physics studies motion and forces?

- A. Optics
- B. Mechanics ✓
- C. Thermodynamics
- D. Quantum physics

Answer: B

9. Which is an example of a vector quantity?

- A. Mass
- B. Speed
- C. Velocity ✓
- D. Temperature

Answer: C

10. What layer of the Earth contains most of the Earth's mass?

- A. Crust
- B. Mantle ✓
- C. Outer Core
- D. Inner Core

Answer: B

11. What is the SI unit of power?

- A. Joule
- B. Watt ✓
- C. Newton
- D. Volt

Answer: B

12. In magnetism, like poles:

- A. Attract
- B. Repel ✓
- C. Neutralize
- D. Overlap

Answer: B

13. Which type of wave requires a medium to travel?

- A. Electromagnetic wave
- B. Sound wave ✓
- C. Light wave
- D. Gamma ray

Answer: B

14. What type of simple machine is a ramp?

- A. Lever
- B. Pulley
- C. Inclined plane ✓
- D. Wheel and axle

Answer: C

15. The study of earthquakes is called:

- A. Geology
- B. Seismology ✓
- C. Meteorology
- D. Volcanology

Answer: B

16. Which gas is most abundant in Earth's atmosphere?

- A. Oxygen
- B. Nitrogen ✓
- C. Carbon dioxide
- D. Argon

Answer: B

17. In applied mathematics, the derivative of a constant is:

- A. Zero ✓
- B. One
- C. The constant itself
- D. Undefined

Answer: A

18. Which of the following is an example of potential energy?

- A. A moving car
- B. Water stored in a dam ✓
- C. Sound from a speaker
- D. Electric current in a wire

Answer: B

19. What happens when an object's net force is zero?

- A. It accelerates
- B. It changes direction
- C. It remains at rest or in uniform motion ✓
- D. It gains energy

Answer: C

20. Which of the following best shows the application of engineering thinking?

- A. Solving puzzles for fun
- B. Designing a bridge to carry heavy loads ✓
- C. Writing a poem
- D. Memorizing dates of history

Answer: B