

Introduction to Mechanical Engineering

Mechanical Engineering · Answer Key · 20 Questions

1. Which simple machine consists of a rigid bar pivoted at a fixed point called a fulcrum?

- A) Pulley
- B) Lever**
- C) Inclined plane
- D) Screw

2. What is the unit of measurement for force in the International System of Units (SI)?

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

3. Which property of a material describes its ability to be stretched into a wire?

- A) Ductility**
- B) Hardness
- C) Brittleness
- D) Malleability

4. What does the acronym 'CAD' stand for in an engineering context?

- A) Computer Aided Design**
- B) Calculated Advanced Drafting
- C) Computer Automated Development
- D) Central Analysis Device

5. Which type of energy is possessed by an object due to its motion?

- A) Potential
- B) Thermal
- C) Chemical
- D) Kinetic**

6. Which of Newton's Laws 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

7. Which mechanical component is primarily used to transmit torque and rotation between shafts?

- A) Gear**
- B) Spring
- C) Bearing
- D) Fastener

8. What is the primary function of a bearing in a mechanical system?

- A) To increase friction
- B) To convert heat to work
- C) To reduce friction between moving parts**
- D) To store potential energy

9. Which material is an alloy made primarily of iron and carbon?

- A) Copper
- B) Aluminum
- C) Steel**
- D) Plastic

10. What is the term for the resistance to motion between two surfaces in contact?

- A) Inertia
- B) Friction**
- C) Torque
- D) Velocity

11. Which form of energy transfer occurs due to a temperature difference?

- A) Work
- B) Pressure
- C) Heat**
- D) Mass

12. In engineering, what is a 'prototype'?

- A) A final mass-produced product
- B) A preliminary model used for testing**
- C) A theoretical mathematical formula
- D) A broken machine

13. What device is used to convert electrical energy into mechanical motion?

- A) Generator
- B) Electric Motor**
- C) Battery
- D) Transformer

14. Which measure represents the amount of matter in an object?

- A) Weight
- B) Volume
- C) Mass**
- D) Density

15. What is the purpose of a lubricant in a mechanical system?

- A) To clean the parts
- B) To reduce wear and friction**
- C) To stop electrical flow
- D) To provide structural support

16. Which type of stress occurs when a force attempts to pull an object apart?

- A) Compression
- B) Shear
- C) Torsion
- D) Tension**

17. What is the ratio of output force to input force in a simple machine called?

- A) Mechanical advantage**
- B) Efficiency
- C) Power output
- D) Energy density

18. Which of these is considered a 'non-renewable' energy source?

- A) Solar
- B) Wind
- C) Coal**
- D) Hydroelectric

19. What is the SI unit for pressure?

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

20. Which part of a vehicle's engine converts linear motion of the pistons into rotational motion?

- A) Crankshaft**
- B) Spark plug
- C) Valve
- D) Radiator