

Work, Energy, and Power – MCQs

1. Work done is said to be zero when:

- A) Force is zero
 - B) Displacement is zero
 - C) Displacement is perpendicular to force
 - D) All of the above
-

2. The SI unit of work is:

- A) Newton
 - B) Watt
 - C) Joule
 - D) Calorie
-

3. Which of the following is not a unit of energy?

- A) Joule
 - B) Calorie
 - C) Watt
 - D) Kilowatt-hour
-

4. 1 kWh is equal to:

- A) $3.6 \times 10^{33} \text{ J}$
 - B) $3.6 \times 10^{53} \text{ J}$
 - C) $3.6 \times 10^{63} \text{ J}$
 - D) $3.6 \times 10^{73} \text{ J}$
-

5. Power is defined as:

- A) Force \times time
 - B) Work done \times time
 - C) Work done / time
 - D) Force / displacement
-

6. The SI unit of power is:

- A) Watt
- B) Joule
- C) Newton
- D) Erg

7. A force of 10 N displaces a body by 2 m in the direction of force. The work done is:

- A) 5 J
 - B) 10 J
 - C) 20 J
 - D) 0 J
-

8. Which of the following has maximum kinetic energy?

- A) A body of mass 5 kg moving at 2 m/s
 - B) A body of mass 2 kg moving at 5 m/s
 - C) A body of mass 10 kg moving at 1 m/s
 - D) A body of mass 20 kg at rest
-

9. Potential energy of a body depends on:

- A) Velocity and mass
 - B) Mass and height
 - C) Force and time
 - D) Speed and acceleration
-

10. When a body falls freely under gravity, its total mechanical energy:

- A) Increases
 - B) Decreases
 - C) Remains constant
 - D) Becomes zero
-

11. The work-energy theorem states:

- A) Work = Energy
 - B) Work done by all forces = Change in kinetic energy
 - C) Work = Force \times Acceleration
 - D) Work = Change in potential energy
-

12. Which of the following is a scalar quantity?

- A) Work
 - B) Force
 - C) Velocity
 - D) Acceleration
-

13. Negative work is done when:

- A) Force and displacement are in same direction
 - B) Force is zero
 - C) Force and displacement are perpendicular
 - D) Force and displacement are in opposite direction
-

14. The energy possessed by a body due to motion is:

- A) Potential energy
 - B) Kinetic energy
 - C) Mechanical energy
 - D) Internal energy
-

15. If speed of a particle becomes double, its kinetic energy becomes:

- A) Double
 - B) Three times
 - C) Four times
 - D) Half
-

16. A 100 W bulb is used for 5 hours. The energy consumed is:

- A) 0.5 kWh
 - B) 1.0 kWh
 - C) 2.0 kWh
 - D) 5.0 kWh
-

17. Mechanical energy is the sum of:

- A) Kinetic and thermal energy
 - B) Potential and thermal energy
 - C) Kinetic and potential energy
 - D) None of these
-

18. The rate of doing work is called:

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

19. Work done by a centripetal force is:

- A) Positive
 - B) Negative
 - C) Zero
 - D) Infinite
-

20. If a man lifts a box and carries it on a horizontal surface, the work done by him against gravity is:

- A) Positive
 - B) Negative
 - C) Zero
 - D) Infinite
-

Answer Key

- 1. D
- 2. C
- 3. C
- 4. C
- 5. C
- 6. A
- 7. C
- 8. B
- 9. B
- 10. C
- 11. B
- 12. A
- 13. D
- 14. B
- 15. C
- 16. A
- 17. C
- 18. B
- 19. C
- 20. C

