

Chapter-4

Worksheet-1

Section 1

- Q1. Define Work. How it is different from energy?
- Q2. What do you mean by positive work and negative work?
- Q3. Give three differences between acceleration due to gravity (g) and universal gravitational constant (G).
- Q4. What is Kinetic energy? Derive an expression for it.
- Q5. Define Gravitational Potential energy.
- Q6. What will be the gravitational potential energy of an object which is at height 'h' from the ground? Explain.
- Q7. State Law of conservation of energy. Give Examples.
- Q8. What is Power?
- Q9. Why Joule is not used as Commercial unit of energy? What is used instead?
- Q10. Give four examples in which one form of energy is converted into other form(s) of energy.

Section 2

Q11. The unit of work is joule. The other physical quantity that has same unit is

- a) Power
- b) Velocity
- c) Energy
- d) Force

Answer: c

Q12. The spring will have maximum potential energy when

- a) It is pulled out
- b) It is compressed
- c) Both (a) and (b)
- d) None of the above

Answer: c

Q13. The energy possessed by an oscillating pendulum of a clock is

- a) Kinetic Energy
- b) Potential Energy
- c) Restoring Energy
- d) Mechanical Energy

Answer: d

Q14. The gravitational potential energy of an object is due to

- a) Its mass
- b) Its acceleration due to gravity
- c) Its height above the earth's surface
- d) All of the above

Answer: d

Q15. A ball is dropped from a height of 10 m.

- a) Its potential energy increases and kinetic energy decreases during the falls
- b) Its potential energy is equal to the kinetic energy during the fall.
- c) The potential energy decreases and the kinetic energy increases during the fall.

d) The potential energy is 0 and kinetic energy is maximum while it is falling.

Answer: c

Q16. If the velocity of a body is doubled its kinetic energy

- a) Gets doubled
- b) Becomes Half
- c) Does not changed
- d) Becomes 4 times

Answer: d

Q17. How much time will be required to perform 520 J of work at the rate of 20 W?

- a) 24 s
- b) 16 s
- c) 20 s
- d) 26 s

Answer: d

Q18. A student carries a bag weighing 5 kg from the ground floor to his class on the first floor that is 2 m high. The work done by the boy is

- a) 1 J
- b) 10 J
- c) 100 J
- d) 1000 J

Answer: c

Q19. The work done is 0 if

- a) The body shows displacement in the opposite direction of the force applied.

- b) The body shows displacement in the same direction as that of the force applied.
- c) The body shows a displacement in perpendicular direction to the force applied.
- d) The body masses obliquely to the direction of the force applied.

Answer: c

Q20. One unit of electrical energy is equal to

- a) 3.6×10^5 J
- b) 3.6×10^6 J
- c) 3.6×10^{-5} J
- d) Both a) and c)

Answer: b