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 caries 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 O 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