

## WORK AND ENERGY

**Question (1):** Work done = Force x \_\_\_\_\_

1. distance
2. acceleration
3. velocity
4. speed

**Ans: 1**

**Question (2):** 1 joule = 1 \_\_\_\_\_

1.  $\text{N m}^2$
2.  $\text{kg m/s}^2$
3.  $\text{N m}$
4.  $\text{N}^2 \text{ m}^2$

**Ans: 3**

**Question (3):** Which form of energy does the flowing water possess?

1. gravitational energy
2. potential energy
3. electrical energy
4. kinetic energy

**Ans: 4**

**Question (4):** A body of mass 2 kg is dropped from a height of 1m. Its kinetic energy as it touches the ground is \_\_\_\_\_

1. 19.6 N
2. 19.6 J
3. 19.6 kg
4. 19.6 m

**Ans: 2**

**Question (5):** The unit of power is \_\_\_\_\_

1. watt per second
2. joule
3. kilojoule
4. joule per second

**Ans: 4**

**Question (6):** 3730 watts = \_\_\_\_\_ h.p.

1. 5
2. 2
3. 746
4. 6

**Ans: 1**

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**Question (7):** A coolie carries a load of 500 N to a distance of 100 m. The work done by him is

1. 5 N
2. 50,000 Nm
3. 0
4. 1/5 N

**Ans: 3**

**Question (8):** The P.E. of a body at a certain height is 200 J. The kinetic energy possessed by it when it just touches the surface of the earth is

1. > P.E.
2. < P.E.
3. = P.E.
4. cannot be known

**Ans: 1**

**Question (9):** Power is a measure of the \_\_\_\_\_

1. rate of change of momentum
2. force which produces motion
3. change of energy
4. rate of change of energy



**Ans: 4**

**Question (10):** Two objects of masses  $1 \times 10^{-3}$  kg and  $4 \times 10^{-3}$  kg have equal momentum. What is the ratio of their kinetic energies?

1. 4:1
2. 2:1
3. 16:1
4.  $\sqrt{2} : 1$

**Ans: 1**

**Question (11):** A 40 newton object is released from a height of 10 m. Just before it hits the ground, its kinetic energy, in joules is \_\_\_\_\_

1. 400
2. 3920
3. 2800
4. 4000

**Ans: 1**

**Question (12):** If the speed of an object is doubled then its kinetic energy is \_\_\_\_\_

1. doubled
2. quadrupled
3. halved

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4. tripled

**Ans: 2****Question (13):** 1.5 kW = \_\_\_\_\_ watts

1. 1500
2. 150
3. 15000
4. 15

**Ans: 1****Question (14):** A man of mass 50 kg jumps to a height of 1 m. His potential energy at the highest point is ( $g = 10 \text{ m/s}^2$ )

1. 50 J
2. 60 J
3. 500 J
4. 600 J

**Ans: 3****Question (15):** The type of energy possessed by a simple pendulum, when it is at the mean position is

1. kinetic energy
2. potential energy
3. potential energy + kinetic energy
4. sound energy

**Ans: 1****Question (16):** An iron sphere of mass 30 kg has the same diameter as an aluminium sphere whose mass is 10.5 kg. The spheres are dropped simultaneously from a cliff. When they are 10 m from the ground, they have the same \_\_\_\_\_.

1. acceleration
2. momentum
3. potential energy
4. kinetic energy

**Ans: 1****Question (17):** A 1 kg mass has a kinetic energy of 1 joule when its speed is

1. 0.45 m/s
2. 1 m/s
3. 1.4 m/s
4. 4.4 m/s

**Ans: 3**

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**Question (18):** If air resistance is negligible, the sum total of potential and kinetic energies of a freely falling body \_\_\_\_\_

1. increases
2. decreases
3. becomes zero
4. remains the same

**Ans: 4**

**Question (19):** Name the physical quantity which is equal to the product of force and velocity.

1. work
2. energy
3. power
4. acceleration

**Ans: 3**

**Question (20):** An object of mass 1 kg has potential energy of 1 joule relative to the ground when it is at a height of \_\_\_\_\_.

1. 0.102 m
2. 1 m
3. 9.8 m
4. 32 m

**Ans: 1**