

JSUNIL TUTORIAL

CLASS 9TH

WORK AND ENERGY

Numerical problem

1. A rickshaw puller pulls the rickshaw by applying a force of 100 N. If the rickshaw moves with constant velocity of 36 kmh^{-1} . Find the power of rickshaw puller. (1000w)
2. A athlete weighing 60kg runs up a staircase having 10 steps each of 1m in 30 sec. Calculate power ($g=8.8\text{ms}^{-1}$ 200W)
3. The heart does 1.5 J of work in each heartbeat. How many times per minute does it beat if its power is 2watt? (80 times) hint: total work =p x t =120J , number times heartbeat in 1 min.
=total work done / work done in each beat=120/1.5=80 times
4. Calculate the time taken 60 w bulb to consume 3000 J of energy . (50sec.)
5. A horse exert a force of 200N to pull the cart. If the horse cart system moves with velocity 36kmh^{-1} on the level road., then find the power of horse in term of horse power (1hp=746W)
Ans. 2.68h.p
6. An electric kettle of 500W is used to heat water everyday for 2 hours . Calculate the number of unit of electrical energy consumed y it in 10 days. (ANS. 10 UNIT)
7. Calculate the cost of using a 2kwh immersion rod for heating water in a house for one hour each day for 60 days if the rate is Rs. 1.50 per unit kWh. (Rs. 180)
8. How many unit of energy will be consume by a 100 W refrigerator in 30 days , if it works for 16 hrs. Every day. {48kWh(unit)}
- 9 . A 1000w oven is used everyday for 90 min. Calculate the unit of electrical energy oven consume in 30days. (45 unit.)
- 1 0 . The power of a heart which beats 72 times in a minute is 1.2kW. Calculate the work done by heart for each beat. (1kJ)