

Physics Practice Test

Part I

1. A body starting from rest attains a speed of 25 m/sec in 5 seconds in a one dimensional motion. What is its acceleration?
 - a) 5 m/s²
 - b) 10 m/s²
 - c) 15 m/s²
 - d) 1m/s²
2. Pick out the scalar quantity among the below given physical quantities:
 - a) displacement
 - b) force
 - c) linear momentum
 - d) work
3. When light travels from air to water, its speed :
 - a) increases
 - b) decreases
 - c) unchanged
 - d) doubles

Part II

1. A 10000 kg truck is moving with a speed of 12 m/s. What speed would a 2000 kg SUV have to attain in order to have the same momentum and if the truck moves with the speed of this SUV, how much kinetic energy would increase for this truck compared to its initial value?
 - a) 60 m/sec, 25 times
 - b) 50m/s, 10 times
 - c) 30m/s, 10 times
 - d) 34 m/s, unchanged
2. How many 30 μ F capacitors must be connected in parallel to store a charge of 0.12 C with a potential of 200V across the capacitors?
 - a) 20
 - b) 30
 - c) 25
 - d) 4
3. How much time does it take to increase the temperature of 1 kg of water from 20 °C to 60 °C if we boil it in a 2kW electric kettle? (The specific heat of water = 4200 J/kg K.)
 - a) 4 s
 - b) 84 s
 - c) 62 s
 - d) 20 s