

## 2. TRUST & PRESSURE & WORK ENERGY (IX)

1. A girl is wearing a pair of flat shoes. She weighs 550N. The area of contact of one shoe with ground is  $160\text{cm}^2$ . What pressure will be exerted by the girl on the ground? (a) If she stands on two feet (b) If she stands on one foot.
2. The density of turpentine is  $840\text{ kg/m}^3$ . What will be its relative density?
3. Calculate the pressure when a force of 200N is exerted on an area of (i)  $10\text{m}^2$  (ii)  $5\text{m}^2$ .
4. A car weighing 1500kg and travelling at 25 m/s stops at a distance of 50m decelerating uniformly. What is the force exerted on it by the brakes? What is the work done by the brakes?
5. How much work should be done on a bicycle of mass 20kg to increase its speed from 2m/s to 5m/s.
6. A bag of wheat weighs 200kg. To what height should it be raised so that the potential energy may be 9800 J.
7. What is the power of a pump which takes 10sec to lift 100kg of water to a water tank situated at a height of 20m?
8. A body does 20 Joules of work in 5 sec. What is its power?
9. An electric bulb consumes 7.2 KJ of electrical energy in 2 min. What is the power of the electric bulb?
10. A car of weight 20000N climbs up a hill at a steady speed of 8m/s. Gaining a height of 120 m in 100 s. Calculate (a) work done by the car (b) power of engine of car.