# JSUNIL TUTORIAL

CBSE TEST PAPER-01

CLASS - IX Science (Work and Energy)

1. If the force applied on the body distances the body in the opposite direction of force applied then work done is

(a) Positive (b) Negative (c) Zero (d) Data incomplete

2. If the force is applied at an angle θ then work done is

(a) W = FS Cos θ (b) W = FS θ (c) W = FS Sin θ (d) none

3. What is the work done in lifting a body of mass 5Kg vertically through 9m?

(a) 450J (b) -450J (c) 45J (d) 540J

4. How are Joule (J) and ergs (erg) related?

(a) $1J = 10^7$ erg (b) $1erg = 10^7$ J (c) $1J = 10^{-7}$ erg (d) None

5. State the difference between Power and energy?

6. Write the expression for a) the potential energy of the body b) the kinetic energy of the body [2]

7. If a 100J of work was done, when a force of 12.5N acts, what was the distance moved by the force? [2]

8. A 1800 Kg car is moving at 30m/s. when brakes are applied. If the average force exerted by the brakes is 6000N, find the distance travelled by the car before it comes to rest? [2]

9. Derive an expression for the potential energy of the body. Calculate P.E of body of mass 10Kg at a height of 10m. [3]

10. Show that total energy is conserved if the ball of mass 'm' is the thrown downwards from a height 'h '[3]

11. What is Power? Show that power = Force × velocity? Calculate power of a body of Mass 10Kg accelerating with 10m/s2 acquires a velocity of 5m/s? [3]

12. What do you understand by the units of electrical energy? How many joules of energy is consumed if the electrical meter shows 400 units of energy? [3]

13. Derive an expression for the kinetic energy of the body? Calculate the kinetic energy for a body of mass 5 Kg moving a velocity $2.5m/s^2$ [3]

14. A stone is thrown vertically upwards with a velocity of 40m/s.

a) At what height will its kinetic energy and potential energy be equal?

b) Calculate the P. E. of the body if it's mass = 10Kg [3]

15. A body of mass 5Kg is lifted vertically at a constant velocity of 12m. Calculate

a) The force applied b) work done in lifting the body c) what happens to the work performed? [3]