Sainik School Chandrapur (Ministry of Defence)

Class XI Physics Winter Vacations Homework

Solve the following questions

- 1. Explain how the definition of work in physics is different from general perception.
- 2. State and prove work energy theorem analytically.
- 3. Explain with graphs the difference between work done by a constant force and by a variable force.
- 4. Write the differences between conservative and non-conservative forces. Give two examples each.
- Calculate the work done by a force of 30 N in lifting a load of 2 kg to a height of 10m (g = 10 ms⁻²)
- 6. Explain the characteristics of elastic and inelastic collision.
- 7. An object of mass 0.4kg moving with a velocity of 4m/s collides with another object of mass 0.6kg moving in the same direction with a velocity of 2m/s. If the collision is perfectly inelastic, what is the loss of K.E. due to impact?
- 8. Compare the kinetic energies of two objects of masses 10 kg and 50 kg respectively but having same momentum.
- 9. Can any object have mechanical energy even if its momentum is zero? Explain.
- 10. Arrive at an expression for power and velocity. Give some examples for the same.

<u>Project</u>

Solve Term 1 Question paper.

Note: Use project papers/A4 size paper for the holiday homework.