Guess Paper – 2009
Class – X
Subject –Physics
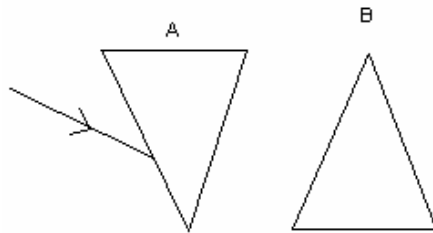
1. Define inertia and force from the 1st law?
2. Differentiate between mass and weight.
3. State Newton's second law of motion and show that F=ma from second law of motion.
4. A bullet of mass 40gm moving with a speed of 80m/sec enters a heavy wooden block and is stopped after traveling a distance of 50cm. What is average force exerted by the bullet.
5. A body "X" of mass 5kg is moving with velocity 20m/sec while another body "Y" of 20kg is moving with velocity 5m/sec. Compare the momentum of the two bodies.
6. Find the weight of an object of mass 320gm in the earth and on the moon. For earth g=10m/sec square and for the moon it is 1/6th of this value.
7. In what case is the P.F. equal to Zero?
8. A light mass and a heavy mass have equal momentum. Which will have more K.E? Explain
9. State the work energy theorem.
10. For a freely falling body, show that the sum of P.E. and K.E. are equal.
11. A bullet of mass 50kg is moving with a velocity of 500m/sec. It penetrates 10cm into a still target and comes to rest. Calculate:-
    (1) The kinetic possessed by the bullet.
    (2) The average retarding force offered by the target.
12. Two bodies of equal masses are placed at height h and 2h. Find the ratio of their potential energy.
13. A body has K.E. 16 times more than that of another moving body of same mass. Calculate their velocity ratio.
14. Draw a neat diagram for a pulley system having a velocity ratio five. Derive an expression for the mechanical advantage.
15. A pulley system has V.R. = 4 and efficiency 70% when a load of mass 1.4kg is raised by it. Calculate:
    (1) the M.A of the system, and
    (2) the effort.
16. Explain, when a test tube containing water is kept inclined in a beaker filled with water, the part of the tube containing air and immersed in water appears to shine.
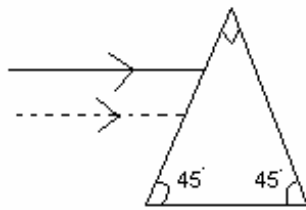
17. Complete the following:-

(1)

(2)

(3)