



## PHYSICS

### BOOKS S CHAND PHYSICS (HINGLISH)

### MODEL TEST PAPER 5

#### Section A

1. If a balloon filled with air and its mouth untied, is released with its mouth in the downward direction, it moves upwards . Why ?



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2. A ball X of mass 1 kg travelling at 2 m/s has a head-on collision with an identical ball Y at rest. X stops and Y moves off. Calculate the velocity of Y after the collision.



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3. Name these forces:

(a) the upward push of water on a submerged

object

(b) the force which wears away two surfaces as they move over one another

(c) the force which pulled the apple off Isaac Newton's tree.



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4. When a ball is thrown inside a moving bus, does its kinetic energy depend on the speed of the bus ? Explain.



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5. (a) Define the term 'latent heat of fusion' of a solid. How much is the latent heat of fusion of ice?

(b) Draw a labelled diagram of the experimental set-up to study the latent heat of fusion of ice.



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6. (a) State and explain the law of conservation of energy with an example ?

(b) Explain how, the total energy a swinging pendulum at any instant of time remains conserved. Illustrate your answer with the help of a labelled diagram.



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7. (a) Explain the terms 'crests' and 'troughs' of a wave ? What type of waves consist of crests and troughs?

(b) The flash of a gun is seen by a man 3 seconds before the sound is heard. Calculate

the distance of the gun from the man (speed of sound in air is 332 m/s).



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## Section B

1. Derive graphically the equation  $v = u + at$ , where the symbols have their usual meanings.



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2. The echo of a sound is heard after 5 seconds. If the speed of sound in air be  $342\text{m/s}$ , calculate the distance of the reflecting surface.



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