

- 4 The conservation of energy is an important principle that features in all branches of Physics. Discuss how energy is conserved in the following scenarios.

(a) When water in an electric kettle is boiling, the temperature of the water remains the same.

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.....[3]

(b) When coherent light passes through a thin slit and falls onto a screen, the centre of the screen has intensity I . When the light passes through two slits in a similar setup, the intensity at the centre of the screen becomes approximately $4I$.

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[Total: 6]

