

- 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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.....[3]

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