

Oscillations

Question Paper

Level	Pre U
Subject	Physics
Exam Board	Cambridge International Examinations
Topic	Oscillations
Booklet	Question Paper

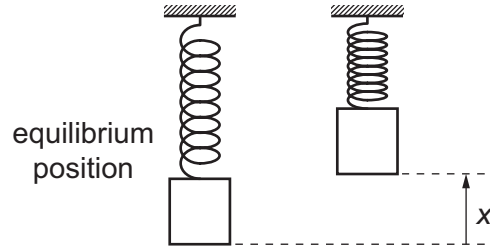
Time Allowed: 4 minutes

Score: /3

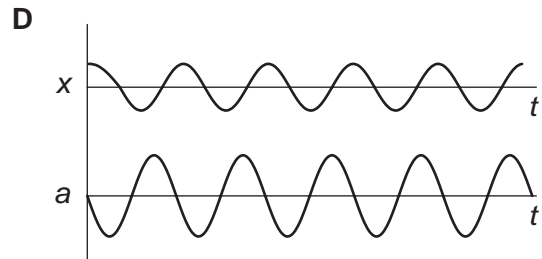
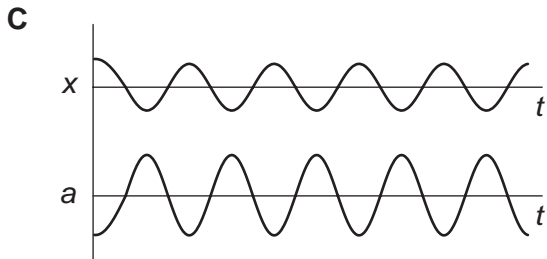
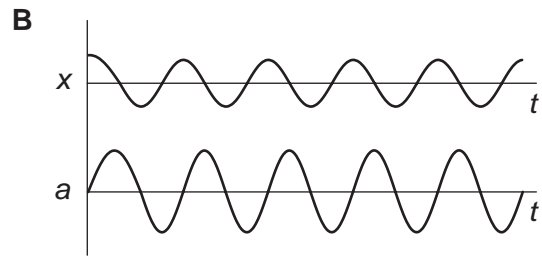
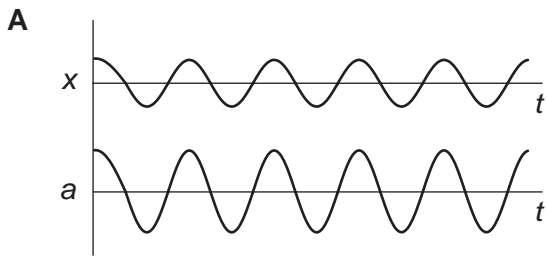
Percentage: /100

Grade Boundaries:

- 1 A mass is suspended from a vertical spring. The mass is displaced upwards from its equilibrium position and released.



Which pair of graphs shows how the displacement x and the acceleration a of the mass change with time t ?

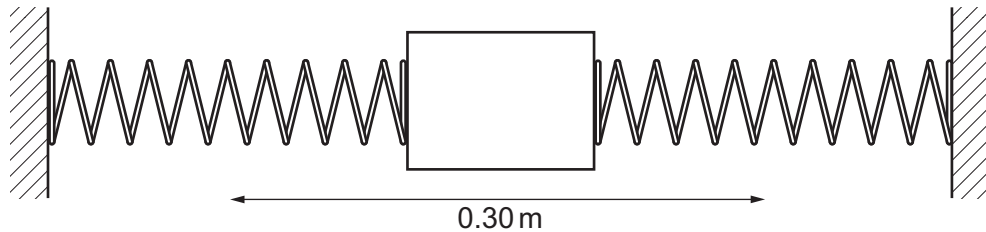


Space for working

- 2 An object of mass 0.60 kg is held in place by two horizontal springs.

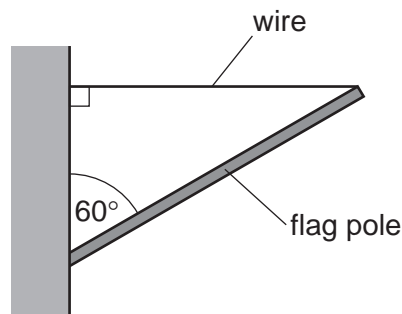
It is displaced sideways and undergoes simple harmonic motion of period 5.0 s.

In each oscillation, it moves from left to right through a total distance of 0.30 m.



What is the total energy of the simple harmonic motion?

- A $4.3 \times 10^{-3} \text{ J}$
 - B $1.1 \times 10^{-2} \text{ J}$
 - C $1.7 \times 10^{-2} \text{ J}$
 - D $4.3 \times 10^{-2} \text{ J}$
- 3 A flag pole of length 3.0 m and mass 75 kg is attached to a building. The angle between the pole and the building is 60° . The end of the pole is supported by a wire attached to the building at a right angle.



What is the tension in the wire?

- A 65 N
- B 210 N
- C 640 N
- D 1300 N