

Answer ALL questions in this section.

- 1 A small mass executes simple harmonic motion about a point O with amplitude a and period T . Its displacement from O at time $T/8$ after passing through O is

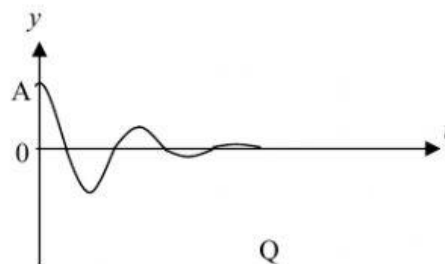
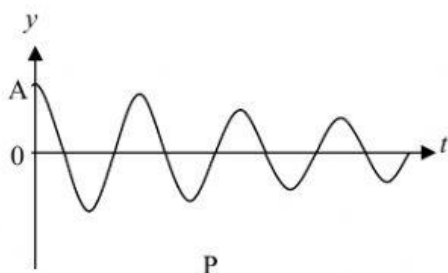
A $\frac{a}{\sqrt{2}}$

B $\frac{a}{2\sqrt{2}}$

C $\frac{a}{2}$

D $\frac{a}{8}$

- 2 Two bodies P and Q are given an initial displacement A and then released. The graphs below show how each of their displacement y vary with time t .



- P and Q are then subjected to a driving force of constant amplitude and of variable frequency f . Which graph below best represents the way in which the amplitudes of P and Q vary with f ?

