Answer ALL questions in this section.

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

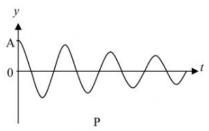
A $\frac{a}{\sqrt{2}}$

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

 $C \frac{a}{2}$

 $D = \frac{6}{8}$

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.



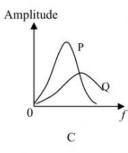
A Q Q

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?

Amplitude 0 A

Amplitude P



Amplitude P D D