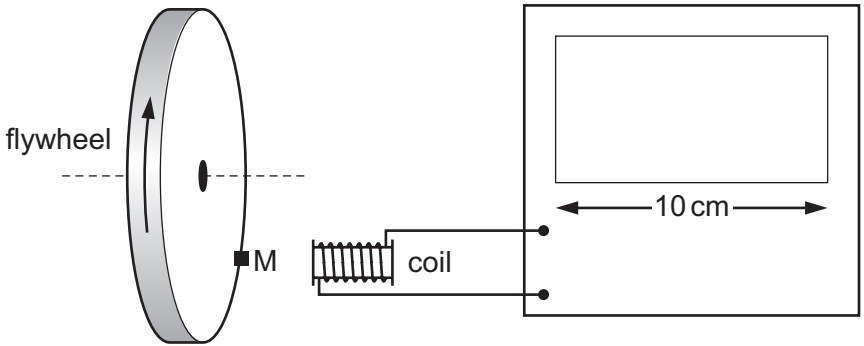
4 The diagram shows a cathode-ray oscilloscope (c.r.o.) being used to measure the rate of rotation of a flywheel.



The flywheel has a small magnet M mounted on it. Each time the magnet passes the coil, a voltage pulse is generated, which is passed to the c.r.o. The display of the c.r.o. is 10 cm wide. The flywheel is rotating at 3000 revolutions per minute.

Which time-base setting will display clearly separate pulses on the screen?

A $1\,\text{s}\,\text{cm}^{-1}$ **B** $10\,\text{ms}\,\text{cm}^{-1}$ **C** $100\,\mu\text{s}\,\text{cm}^{-1}$ **D** $1\,\mu\text{s}\,\text{cm}^{-1}$