

6(a)(i)	$F = BIL$
	force on QR = $5.2 \times 10^{-3} \times 1.2 \times 0.054 \times 190$
	= 0.064 N
6(a)(ii)	torque = force $\times$ perpendicular distance between forces
	= $0.064 \times 0.025 \cos \theta = (1.6 \times 10^{-3}) \cos \theta$ N m
6(a)(iii)	one complete cycle of a sinusoidal curve between 0 and 360°
	τ axis labelled to show maximum and minimum torques at $\pm 1.6 \times 10^{-3}$ N m
	maximum at 0 and 360° and minimum at 180° (or vice versa), with torque shown as zero at 90° and 270°
6(b)	(ferrous core) increases magnetic flux density
	amplitude of torque increases