3.	One end of a thin conducting rod of length ℓ is pivoted to a fixed point. The rod has a resistance of R and its two ends of the rod are connected to a resistor with resistance R_0 The rod is rotating with a constant angular velocity ω in a uniform magnetic field of flux density B. This direction of magnetic field is normal to the plane of rotation of the rod.

(a)	What is the emf induced in the rod?

(b)	Determine the electric power developed in the resistor.

(c)	Describe, with evidence, the origin of the electric power developed in the resistor.

[10 marks]