23.1 First we need to use Faraday's law of induction to calculate the emf $\mathcal{E}$ due to the change of magnetic field:

$$\mathcal{E} = -N\frac{d\Phi_B}{dt} = -1 \times \frac{S\Delta B}{\Delta t} = -\frac{8 \times 10^{-4}m^2 \times (2.5T - 0.5T)}{1s} = -1.6 \times 10^{-3}V.$$

So the magnitude of the induced current is:

$$I = \frac{|\mathcal{E}|}{R} = \frac{1.6 \times 10^{-3}V}{2\Omega} = 8 \times 10^{-4}A.$$

23.6 The magnetic field inside the solenoid is [22.32] on page 751:

$$B(t) = \mu_0 nI = 4\pi \times 10^{-7}T \cdot m/A \times 10^3/m \times 5A \times sin(120t) = 6.3 \times 10^{-3}sin(120t)T.$$

So the induced emf is(note that the magnetic field is only within the solenoid):

$$\mathcal{E} = -N\frac{d\Phi_B}{dt} = -15 \times \pi \times (0.02m)^2 \times 6.3 \times 10^{-3} \times 120 \times cos(120t)T/s = -0.014 \times cos(120t)V,$$

which is a function of time.
23.12 The movement of the bar induces the motional emf:

$$|\mathcal{E}| = Blv.$$

Then this emf induces a current:

$$|\mathcal{E}| = IR.$$

So we have:

$$Blv = IR.$$

Then we can solve for the speed of the bar:

$$v = \frac{IR}{Bl} = \frac{0.5A \times 6\Omega}{2.5T \times 1.2m} = 1m/s.$$