

Question number	Answer	Notes	Marks
11 (a) (i)	Reference to a (magnetic) field / flux / field lines; Which changes in the coil / cuts the coil ORA ;	MUST refer to relative motion between coil / wire and (magnetic) <u>field</u> – references to moving magnet insufficient (and repeat of stem)  'wire cuts (magnetic) field' = 2 marks	2
(ii)	Faster/more energetic movement (shaking);	ACCEPT More <u>turns</u> on the coil (not bigger coil);  ACCEPT Stronger magnet / magnetic field (not bigger magnet);  REJECT 'more coils' / 'more loops' REJECT 'add another magnet'	1
(b) (i)	C (there is a current in the circuit)		1
(ii)	LED wastes less energy / produces less heat (than a filament lamp); ORA Useful energy output ÷ total energy input is larger for the LED / useful output is closer to total (energy) input; ORA		2

**Total 6 Marks**