

**M1.** (a) iron

*accept any unambiguous correct indication*

1

(b) (i) step-down (transformer)

*do **not** accept down step or a description*

1

(ii) less than

*accept any unambiguous correct indication*

1

(c) (i) 2000

1

(ii) There is no pattern.

1

**[5]**

**M2.** (a) (i) iron 1

(ii) step-down (transformer) 1

(b) any **one** from:

- after the power station
- after the generator
- before the power lines
- before the pylons

1

(c) each correct (1)  
*in its correct place*

current

coil

field

core

ends

5

**[8]**

<b>M3.</b>	(a) <i>there is a magnetic field (around the magnet)</i>	1
	<i>(this magnetic field) changes / moves</i>	1
	<i>and cuts through coil</i> <i>accept links with coil</i>	1
	<i>so a p.d. <u>induced</u> across coil</i>	1
	<i>the coil forms a complete circuit</i>	1
	<i>so a current (is induced)</i>	1
	(b) <i>ammeter reading does not change</i> <i>must be in this order</i> <i>accept ammeter has a small reading / shows a current</i>	1
	<i>zero</i>	1
	<i>greater than before</i> <i>accept a large(r) reading</i>	1

same as originally but in the opposite direction  
*accept a small reading in the opposite direction*

1

(c) 0.30

*allow 1 mark for correct substitution, ie  $0.05 = Q / 6$*

2

*C / coulomb*

*allow A s*

1

**[13]**

- M4.** (a) step-down (transformer) 1
- (b) alternating current 1  
*accept minor misspellings but  
do **not** credit 'alternative current'*
- (c) (i)(ii) magnet 3  
attracts  
upwards  
*correct order essential  
accept 'up'*

[5]

- M5.** (a) iron *correct positions only* 1
- primary 1
- secondary 1
- (b) (it) decreases the p.d.  
*accept it would increase current*  
*accept voltage for p.d.*  
*the voltage goes from 230(V) to 20(V) is insufficient*  
*do **not** accept decreases current / energy / power*  
*do **not** accept decreases p.d. / voltage and current* 1
- (c) an environmental 1
- [5]