

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]

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