

Name of the Student: \_\_\_\_\_

Max. Marks : 18 Marks

Time : 18 Minutes

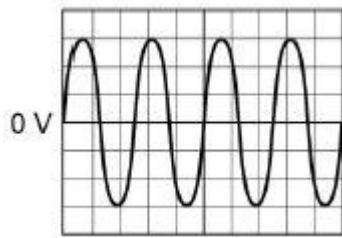
Mark Schemes

**Q1.**

- (a) K = step-up transformer 1
- L = transmission cables  
*allow power cables*  
*ignore wires* 1
- M = step-down transformer  
*allow 1 mark if K and M are labelled transformer but step-up and step-down labels are incorrect or not present* 1
- (b) 8 (%) and 32 (%)  
*both required* 1
- Number of times = 4 1
- (c) (burning gas) releases carbon dioxide 1
- which causes global warming  
*allow greenhouse effect **or** climate change* 1
- (d) An energy resource that can be replenished quickly. 1
- (e) higher power output  
*allow more electricity generated* 1
- lower variation in power output 1
- [10]**

**Q2.**

- (a) 50 Hz 1
- (b)



1

(c)  $P = 0.020 \times 230$

1

$P = 4.6 \text{ (W)}$

1

(d)  $E = 180 \times 230$

1

$E = 41\,400 \text{ (J)}$

1

- (e) Hazard:  
live wire  
**or**  
high potential difference  
*ignore current in his body*

1

Risk:  
electric shock  
**or**  
electrocution  
*allow (electrical) burn*  
*allow death (by electric shock)*  
*allow 1 mark for hazard and risk in incorrect order*

1

[8]