Mark scheme June 2004

## GCSE

# Science (Modular) Single Award and Physics 

## Module 17

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## Energy and Electricity: Foundation Tier

| Question No. | KEY |
| :---: | :---: |
| One | $\begin{aligned} & \hline 1 \text { - lamp } \\ & 2 \text { - fuse } \\ & 3 \text { - thermistor } \\ & \text { 4- variable resistor } \\ & \hline \end{aligned}$ |
| Two | $\begin{aligned} & 1-\text { brown } \\ & 2-\text { white } \\ & 3-\text { blue } \\ & 4 \text { - green and yellow } \\ & \hline \end{aligned}$ |
| Three | 1 - radiation <br> 2 - insulation <br> 3 - convection <br> 4 - conduction |
| Four | 1 - fossil fuels <br> 2 - hydroelectric schemes <br> 3 - wind farms <br> 4 - nuclear fuels |
| Five | 1 - water flows through the sluice gates <br> 2 - water is trapped behind the barrage <br> 3 - water flows through the turbo-generators <br> 4 - electricity is supplied to the National Grid |
| Six | $\begin{aligned} & \mathrm{Q} \\ & \mathrm{R} \\ & \hline \end{aligned}$ |
| Seven | A has the same frequency as C $B$ has the same peak voltage as A |
| Eight | $8.1-\mathrm{D}, 8.2-\mathrm{A}, 8.3-\mathrm{B}, 8.4-\mathrm{B}$ |
| Nine | 9.1 - D, 9.2 - C, 9.3 - C, 9.4 - C |
| Ten | 10.1 -D, 10.2-B, 10.3-A, 10.4-D |

## Energy and Electricity: Higher Tier

| Question No. | KEY |
| :---: | :---: |
| One | 1 - water flows through the sluice gates <br> 2 - water is trapped behind the barrage <br> 3 - water flows through the turbo-generators <br> 4 - electricity is supplied to the National Grid |
| Two | $\begin{aligned} & 1-\mathrm{R} \\ & 2-\mathrm{P} \\ & 3-\mathrm{S} \\ & 4-\mathrm{Q} \end{aligned}$ |
| Three | A has the same frequency as C B has the same peak voltage as A |
| Four | the brushes change a.c. to d.c. when the coil spins faster the frequency of the a.c. generated decreases |
| Five | $5.1-\mathrm{D}, 5.2-\mathrm{A}, 5.3-\mathrm{B}, 5.4-\mathrm{B}$ |
| Six | 6.1 - D, 6.2 - C, $6.3-\mathrm{C}, 6.4$ - C |
| Seven | $7.1-\mathrm{D}, 7.2-\mathrm{B}, 7.3-\mathrm{A}, 7.4-\mathrm{D}$ |
| Eight | $8.1-\mathrm{C}, 8.2-\mathrm{A}, 8.3-\mathrm{A}, 8.4-\mathrm{B}$ |
| Nine | $9.1-\mathrm{C}, ~ 9.2-B, ~ 9.3-C, ~ 9.4-C$ |
| Ten | $10.1-\mathrm{B}, 10.2-\mathrm{C}, 10.3-\mathrm{D}, 10.4$ - D |

