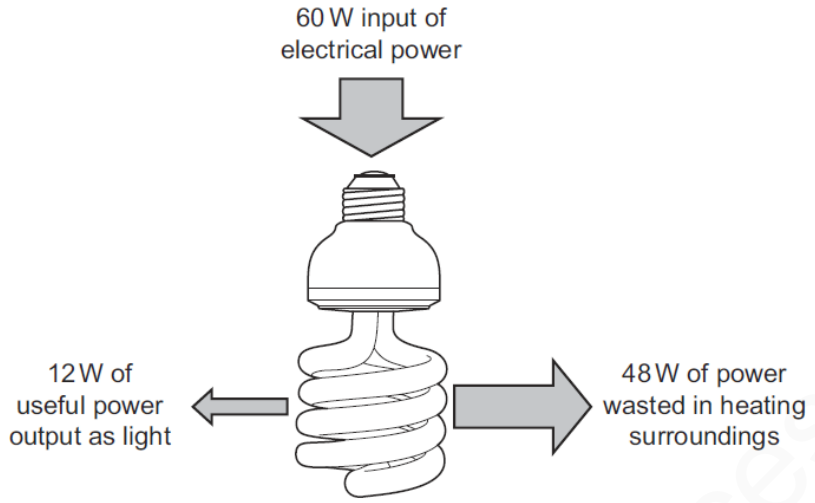
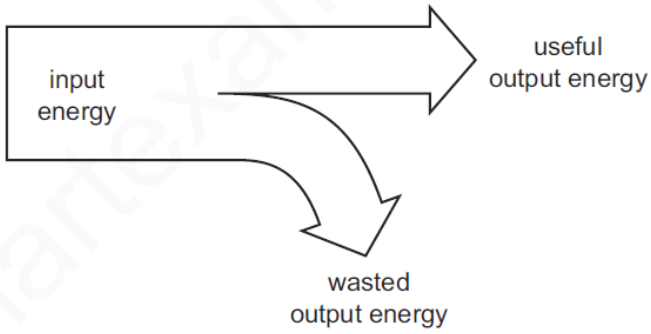
EFFICIENCY-SET-1	
1	A certain machine is very efficient. What does this mean? **A** It produces a large amount of power. **B** It uses very little energy. **C** It wastes very little energy. **D** It works very quickly.
MS-1	C
2	Some processes are more efficient than others. Which expression gives the efficiency of a process? **A** $\frac{\text{total energy output}}{\text{total energy input}} \times 100\%$ **B** $\frac{\text{useful energy output}}{\text{total energy input}} \times 100\%$ **C** $\frac{\text{wasted energy output}}{\text{total energy input}} \times 100\%$ **D** $\frac{\text{wasted energy output}}{\text{useful energy output}} \times 100\%$
MS-2	B

3	The diagram shows the energy used by a modern lamp.  Which expression gives the efficiency of the lamp? **A** $\frac{12}{60} \times 100\%$ **B** $\frac{12}{48} \times 100\%$ **C** $\frac{48}{60} \times 100\%$ **D** $\frac{48}{12} \times 100\%$
MS-3	A
4	The diagram represents the energy transfers for a device.  The device is 50% efficient. Which equation is correct? **A** input energy = useful output energy ÷ 2 **B** useful output energy = wasted output energy ÷ 2 **C** wasted output energy = useful output energy **D** wasted output energy = useful output energy ÷ 2
MS-4	C

5	A lamp has a power input of 5.0 W. It wastes 1.0 W of power heating the surroundings. What is the efficiency of the lamp? **A** 20% **B** 50% **C** 80% **D** 120%
MS-5	C
6	Different processes have different efficiencies. Which row shows the most efficient process? **A**: energy input / J = 10; useful energy output / J = 3 **B**: energy input / J = 40; useful energy output / J = 10 **C**: energy input / J = 100; useful energy output / J = 25 **D**: energy input / J = 2000; useful energy output / J = 250
MS-6	A
7	A 150 W filament lamp has an efficiency of 10%. A 40 W compact fluorescent lamp (CFL) has an efficiency of 30%. Each lamp is switched on for the same amount of time. Which lamp produces more light and which lamp converts more energy into other forms of energy? **A**: produces more light = CFL lamp; converts more energy into other forms = CFL lamp **B**: produces more light = CFL lamp; converts more energy into other forms = filament lamp **C**: produces more light = filament lamp; converts more energy into other forms = CFL lamp **D**: produces more light = filament lamp; converts more energy into other forms = filament lamp
MS-7	D