Model Answers: Medium

1

The correct answer is **D** because heating permanent magnets will demagnetise them.

A is incorrect as cooling magnets actually increases their magnetism.

B is incorrect as this would increase magnetism.

C is incorrect as this is a method of creating a permanent magnet.

2

The correct answer is **B** because:

- As the voltage is stepped up, it causes the current to be stepped down.
- This is because the electrical power must be the same before and after transforming, otherwise you create or destroy energy, which you can't do, and $P = IV$
- The power lost during transmission is given by $P = I^2R$. The resistance of the power lines cannot be reduced, but the current at which the electricity is transmitted can.
- The lower the current, the less power is dissipated as heat in the power lines.
- If less power is wasted, the transmission is more efficient.

A is incorrect as electricity does not flow more or less quickly due to the voltage.

C is incorrect as power cannot be created or destroyed due to the conservation of energy. If the voltage goes up, the current comes down to compensate, since $P = IV$.

D is incorrect as high voltage transmission is much **less** safe than low voltage transmission, but the rewards are worth the risk.

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