




AQA Chapter 15 Checklist 2017

(Triple)

<i>Can you...?</i>			
Chapter 15: Electromagnetism			
State the force rule for two magnetic poles near each other.			
Describe the pattern of magnetic field lines around a bar magnet.			
Describe what induced magnetism is.			
Explain why steel, not iron, is used to make permanent magnets.			
Describe the pattern of the magnetic field around a straight wire carrying a current and in and around a solenoid.			
Describe how the strength and direction of the field varies with position and with the current.			
Describe what a uniform magnetic field is.			
Describe what an electromagnet is.			
State what electromagnets can be used for.			
Explain how devices that use electromagnets work.			
Describe how to change the size and reverse the direction of the force on a current-carrying wire in a magnetic field.			
Explain how a simple electric motor works.			
Explain what is meant by magnetic flux density.			
Calculate the force on a current-carrying wire.			
Explain what the generator effect is.			
Explain how a potential difference can be induced in a wire.			
Describe what affects the size of the induced potential difference.			
Deduce the direction of an induced current.			
Describe how a simple alternator (alternating-current generator) is constructed and operated.			
Describe how the induced potential difference of an a.c. generator varies with time.			
Explain how a simple dynamo (direct-current generator) is constructed and operated.			
State what transformers are used for.			
Describe what a step-up transformer does and what a step-down transformer does.			
Explain why transformers only work with a.c.			
Describe what a transformer is made up of.			
Explain how the ratio of the primary potential difference to the secondary potential difference depends on the number of turns on each coil.			
Explain how the number of turns on the secondary coils relates to the number of coils on the primary coil for a step-down transformer and for a step-up transformer.			
State what you can say about a transformer that is 100% efficient.			

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Explain why less power is wasted by using high potential difference to transfer power through the grid system.			
Chapter 15: Equations I need to know.			
None!			
Chapter 15: Equations I am given and need to use.			
$\frac{\text{potential difference across primary coil}}{\text{potential difference across secondary coil}} = \frac{\text{number of turns in primary coil}}{\text{number of turns in secondary coil}}$ $\text{primary potential} \times \text{primary current } (I_p) = \text{secondary potential} \times \text{secondary current } (I_s)$ $\text{difference } (V_p) \qquad \qquad \qquad \text{difference } (V_s)$			
Chapter 15: Key words I need to know.			
Alternator: <i>an alternating current generator.</i>			
Electromagnet: <i>an insulated wire wrapped around an iron bar that becomes magnetic when there is a current in the wire.</i>			
Electromagnetic induction: <i>the process of inducing a potential difference in a wire by moving the wire so it cuts across the lines of force of a magnetic field.</i>			
Fleming's left-hand rule: <i>a rule that gives the direction of the force on a current-carrying wire in a magnetic field according to the direction of the current and the field.</i>			
Generator effect: <i>the production of a potential difference using a magnetic field.</i>			
Magnetic field: <i>the space around a magnet or a current-carrying wire.</i>			
Motor effect: <i>when a current is passed along a wire in a magnetic field, and the wire is not parallel to the lines of the magnetic field, a force is exerted on the wire by the magnetic field.</i>			
Step-down transformer: <i>electrical device that is used to step-down the size of an alternating potential difference.</i>			
Step-up transformer: <i>electrical device used to step-up the size of an alternating potential difference.</i>			
Transformer: <i>electrical device used to change a (alternating) voltage.</i>			