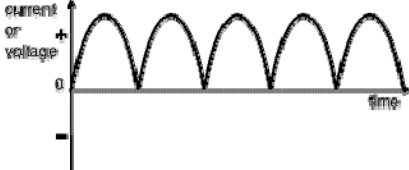
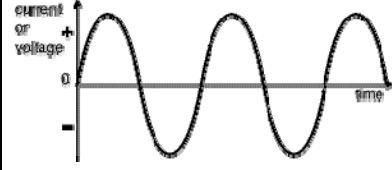
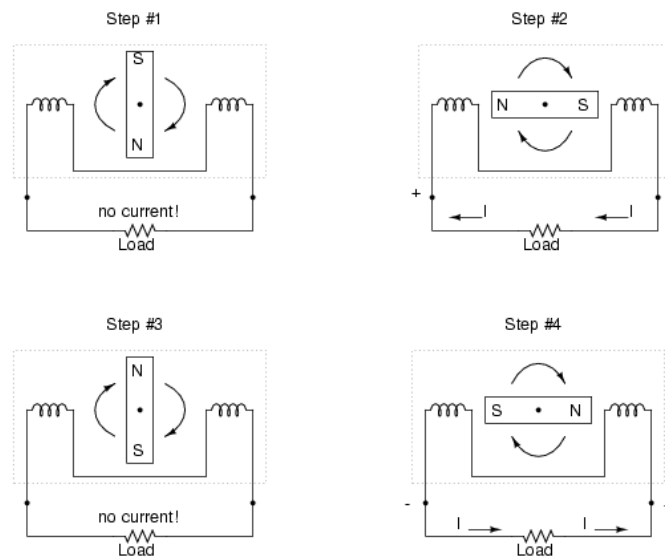


Table comparing Direct Current (DC) and Alternating Current (AC)

	DC	AC
Source of electricity type	cells (battery)	wall socket
Direction of electron flow	single, forward	forwards then backwards
Relation to magnetic field	Magnetic fields near a wire cause electrons to flow in a single direction along the wire because they are repelled and attracted by the north or south poles	Instead of applying the magnetism along the wire steadily, <u>he used a magnet that was rotating</u> . When the magnet was oriented in one direction, the electrons flowed towards the positive, but when the magnet's orientation was flipped, the electrons turned as well
Discoverer	Thomas Edison	Nikola Tesla
Amount of energy it can carry	Each battery is designed to produce only one voltage, and that voltage of DC cannot travel very far until it begins to lose energy	AC voltage from a generator in a power plant can be bumped up or down in strength by another mechanism, called a transformer
Conversion	Not possible	AC \Leftrightarrow DC
Graphs (current and voltage)	 <p>The graph shows a horizontal line at a constant positive value on the y-axis (labeled 'current or voltage') over time on the x-axis. The y-axis has a '+' sign at the top and a '-' sign at the bottom, with '0' in the middle.</p>	 <p>The graph shows a sinusoidal wave oscillating above and below the zero line on the y-axis (labeled 'current or voltage') over time on the x-axis. The y-axis has a '+' sign at the top and a '-' sign at the bottom, with '0' in the middle.</p>

The basis of Tesla's alternating current (revolving magnet)



PART ONE: MOTORS

Figure 1: A simple DC motor

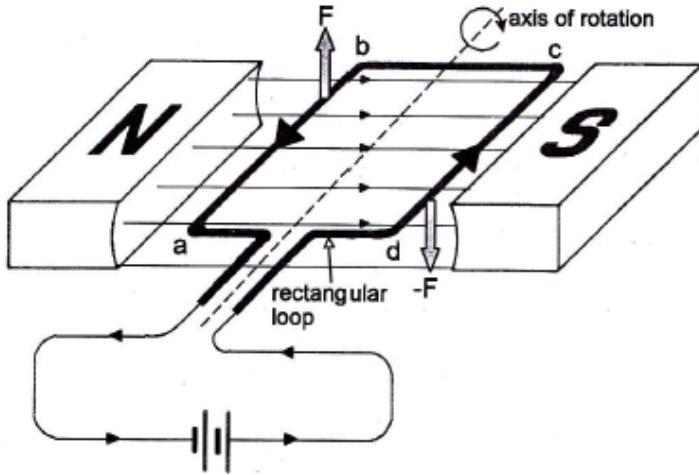


Figure 2: The anatomy of a DC motor

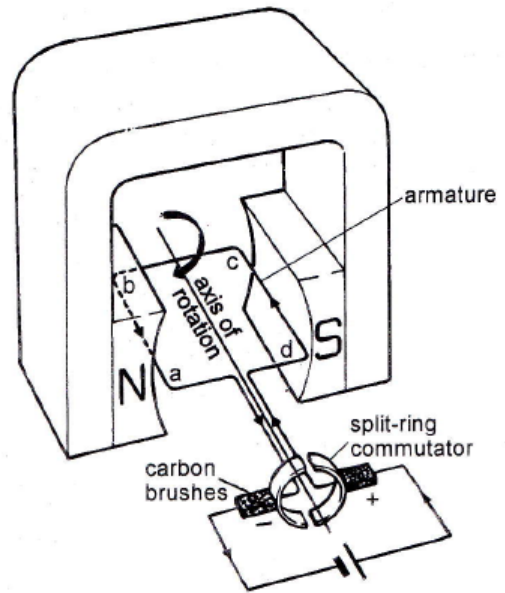
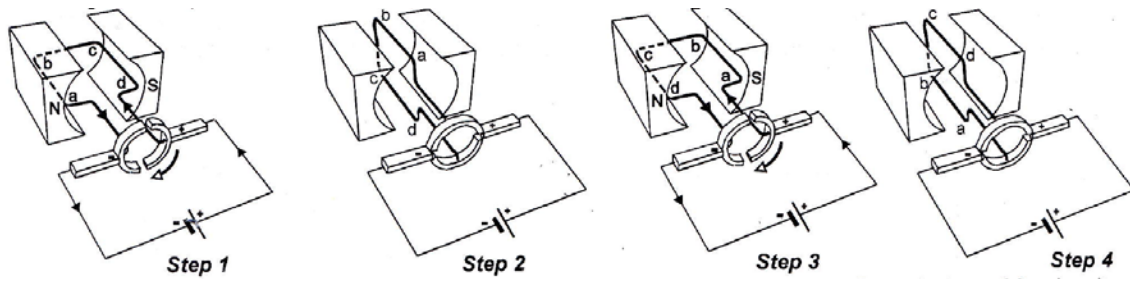


Figure 3: The functioning of a DC motor



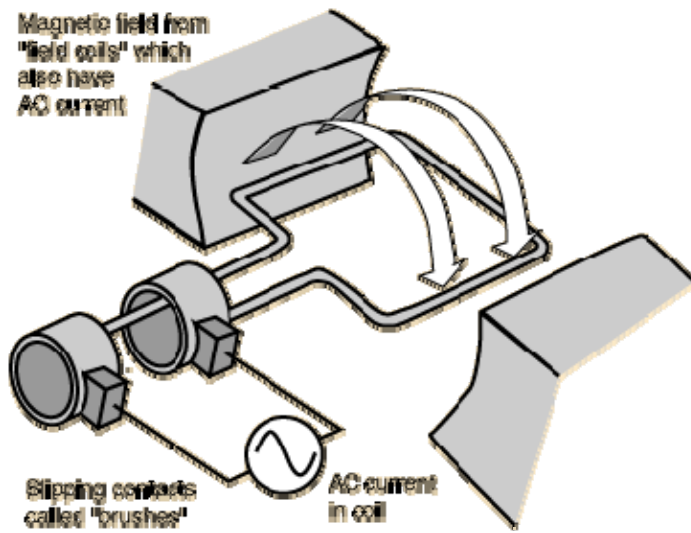
Step 1

Step 2

Step 3

Step 4

Figure 4: The functioning of an AC motor



PART TWO: DYNAMOS

Figure 5: Generating current

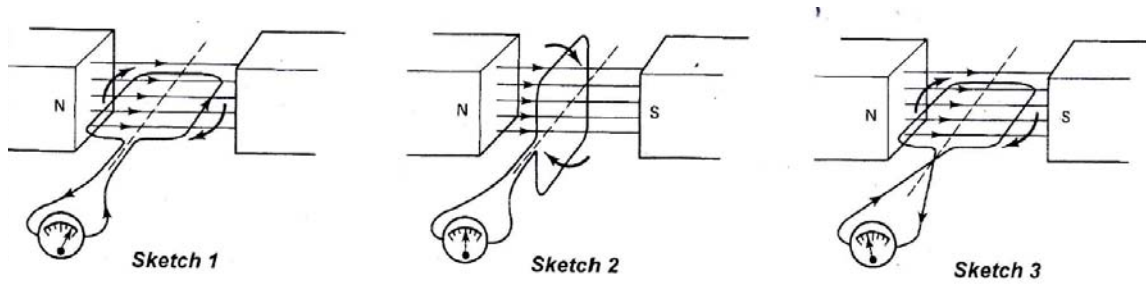


Figure 6: The anatomy of an AC dynamo

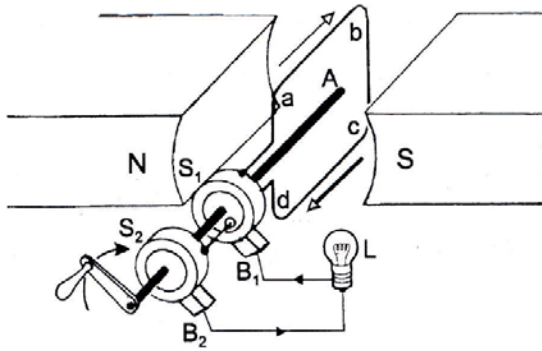


Figure 7: The functioning of an AC motor

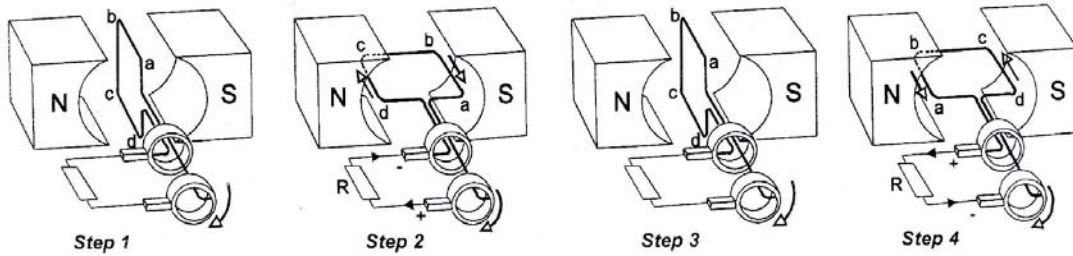


Figure 8: Deriving the curves of AC and DC

Figure 8a: AC

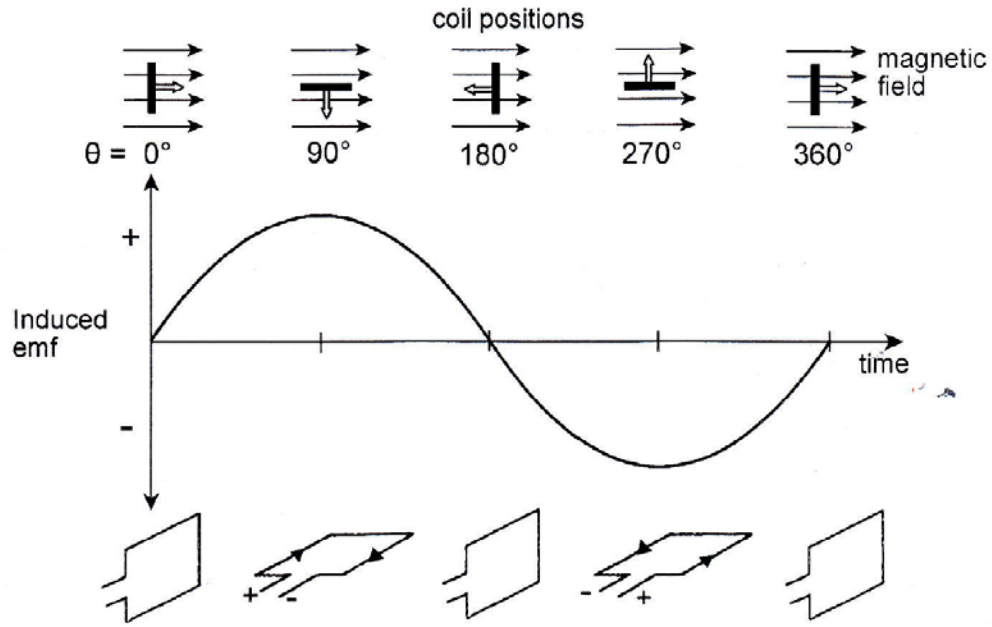


Figure 8b: DC

