CiE iGCSE Physics Checklist

Section 32: Electromagnetic Effects 1

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| **CORE** |  |  |  |
| Show understanding that a conductor moving across a magnetic field or a changing magnetic field linking with a conductor can induce an e.m.f. in the conductor |  |  |  |
| Describe an experiment to demonstrate electromagnetic induction |  |  |  |
| State the factors affecting the magnitude of an induced e.m.f. |  |  |  |
| Distinguish between direct current (d.c.) and alternating current (a.c.) |  |  |  |
| Describe the construction of a basic transformer with a soft-iron core, as used for voltage transformations |  |  |  |
| Recall and use the equation (Vp / Vs) = (Np / Ns) |  |  |  |
| Understand the terms step-up and step-down |  |  |  |
| Describe the use of the transformer in high-voltage transmission of electricity |  |  |  |
| Give the advantages of high-voltage transmission |  |  |  |
| **SUPPLEMENT** |  |  |  |
| Show understanding that a conductor moving across a magnetic field or a changing magnetic field linking with a conductor can induce an e.m.f. in the conductor |  |  |  |
| Describe an experiment to demonstrate electromagnetic induction |  |  |  |
| State the factors affecting the magnitude of an induced e.m.f. |  |  |  |
| Describe and explain a rotating-coil generator and the use of slip rings |  |  |  |
| Sketch a graph of voltage output against time for a simple a.c. generator |  |  |  |
| Relate the position of the generator coil to the peaks and zeros of the voltage output |  |  |  |
| Describe the principle of operation of a transformer |  |  |  |
| Recall and use the equation Ip Vp = Is Vs (for 100% efficiency) |  |  |  |
| Explain why power losses in cables are lower when the voltage is high |  |  |  |