CiE iGCSE Physics 0625 Learning Plan

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| **Section 32: Electromagnetic Effects 1** | | |
| Specification | Resources | Assessment |
| **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 | Video: Physics Section 5 – Lesson 8 – Electromagnetic effects (Part 1)  Powerpoint: Physics 32 –Electromagnetic effects 1.  Textbook  Pages 206-207; Magnetic effect of a current.  Pages 214-215; Electromagnetic induction.  Pages 216-217; More about induced currents.  Pages 218-219; Generators  Pages 220-221; Coils and Transformers (1).  Pages 222-223; Coils and Transformers (2).  Pages 224-225; Power across the country.  Section 32 checklist.doc | Textbook  Page 207; Questions (1) to (2)  Page 215; Questions (1) to (2)  Page 217; Questions (1) to (3)  Page 219; Questions (1) to (2)  Page 221; Questions (1) to (3)  Page 223; Questions (1) to (3)  Page 225; Questions (1) to (7)  Textbook answers: Page 330-331  Talking Paper video – Section 32 – Electromagnetic Effects 1  Section 32 Exam Question - pdf  Section 32 Exam Question mark scheme - pdf |

Videos – www.igcsesciencecourses.com

Textbook Ref: Complete Physics for Cambridge iGCSE (Stephen Pople) - OUP

DVD Assessments – see resource DVD in textbook.