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 outputDescribe 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; GeneratorsPages 220-221; Coils and Transformers (1).Pages 222-223; Coils and Transformers (2).Pages 224-225; Power across the country.Section 32 checklist.doc | TextbookPage 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 330-331Talking Paper video – Section 32 – Electromagnetic Effects 1Section 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.