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**Personal Learning Checklist (PLC) Name ……………………………**

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| --- |
| **Subject WJEC Level 1 / 2** Engineering |
| **Topic** Revision for the Written Exam Unit 3 |

**S = I have Summarised**  **O = I have Organised (RAG or** ☺😐☹**) R = I have Recalled**  **T = I have Tested Myself** 

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **I can explain….** | **S** | **O** | **R** | **T** |
| **Describe engineering developments**  • Engineering o Structural o Mechanical o Electronic  • Engineers involved o UK o International  • Key outputs  • Applications  • Technologies  • Materials |  |  |  |  |
| **Explain effects of engineering achievements**  • In the home  • In industry  • In society |  |  |  |  |
| **Explain how environmental issues affect engineering applications**  Environmental issues  • Use  • Disposal  • Recycling  • Materials development  • Engineering processes  • Costs  • Transportation  • Sustainability Applications  • Engineering processes  • Engineering products |  |  |  |  |
| **Describe properties required of materials for engineering products**  Engineering products  • Structural, e.g. buildings, bridges  • Mechanical, e.g. gearbox, crane, bicycle  • Electronic, e.g. mobile phone, communications, alarm Properties  • Tensile strength  • Hardness  • Toughness  • Malleability  • Ductility  • Conductivity  • Corrosive resistance  • Environmental degradation  • Elasticity |  |  |  |  |
| **Explain how materials are tested for properties**  Tests  • Destructive tests  • Non-destructive tests |  |  |  |  |
| **Select materials for a purpose**  • Ferrous  • Non-ferrous  • Thermoplastics  • Thermosetting plastics  • Smart  • Composite | | | | |
| **Describe engineering processes**  Processes  • Marking out  • Cutting  • Finishing  • Preparing  • Shaping  • Drilling  • Turning  • Brazing  • Joining o Permanent o Temporary fixings  • Filing  • Soldering |  |  |  |  |
| **Describe applications of engineering processes**  Applications  • For material removal  • For shaping and manipulation  • For joining and assembly  • For heat and chemical treatment |  |  |  |  |
| **Use mathematical techniques for solving engineering problems**  Mathematical techniques  • Use of formulae o Ohms law o Efficiency  • Areas and volumes of geometric shapes  • Calculation  • Measuring  • Estimation  • Mean  • Units of measurement o Metric o Metres, millimetre |  |  |  |  |
| **Convert between isometric sketches and 3rd angle orthographic projections**  Convert  • Section views  • Construction lines  • Centre lines  • Hidden detail  • Standard conventions |  |  |  |  |
| **Analyse situations for engineering problems**  Analyse  • Filter information  • Synthesise information  • Identify salient points  • Identify requirements |  |  |  |  |
| **Propose solutions in response to engineering problems**  Propose solutions  • Communication  • Logical structure |  |  |  |  |