### Format of the Papers

<table>
<thead>
<tr>
<th>Content</th>
<th>Assessment</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 1: Force and Motion, Energy, Moments and Radioactivity</strong></td>
<td>An externally assessed written examination consisting of a number of compulsory structured questions that provide opportunities for short answers, extended writing and calculations&lt;br&gt;&lt;br&gt;Foundation Tier: 1 hour 15 mins&lt;br&gt;Higher Tier: 1 hour 30 mins</td>
<td>35%</td>
</tr>
<tr>
<td><strong>Unit 2: Waves, Sound and Light, Electricity, and the Earth and Universe</strong></td>
<td>An externally assessed written examination consisting of a number of compulsory structured questions that provide opportunities for short answers, extended writing and calculations&lt;br&gt;&lt;br&gt;Foundation Tier: 1 hour 30 mins&lt;br&gt;Higher Tier: 1 hour 45 mins</td>
<td>40%</td>
</tr>
</tbody>
</table>
THE REVISION SCHEME

The sooner you start your revision the better. If you follow the schedule below most of the hard work will be completed prior to study leave!

For each section you should:
- Summarise your notes
- Learn your notes
- Check the revision PowerPoint
- Test your learning by attempting worksheets and past paper questions – you should spend the same amount of time on questions as note making

The revision PowerPoints can be accessed on the school website. They contain summary notes, worked examples, past paper questions and solutions. To open each PowerPoint, click the read only option.

In addition to the PowerPoints, you will also receive a folder of past papers. It is essential that you test your learning by attempting these. The majority of papers included are from the previous specification, but most of the questions still apply:

<table>
<thead>
<tr>
<th>Week beginning</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>25th February</td>
<td>Unit 1: Forces and Kinetic Theory</td>
</tr>
<tr>
<td>4th March</td>
<td>Unit 1: Motion</td>
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<td>11th March</td>
<td>Unit 1: Energy</td>
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<td>18th March</td>
<td>Unit 1: Radioactivity</td>
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<td>8th April</td>
<td>Unit 2: Waves, Sound and Light</td>
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<tr>
<td>15th April</td>
<td>Unit 2: Electricity 1</td>
</tr>
<tr>
<td>22nd April</td>
<td>Unit 2: Electricity 2</td>
</tr>
<tr>
<td>29th April</td>
<td>Unit 2: The Earth and Universe</td>
</tr>
</tbody>
</table>
Unit 1 Formulae

* denotes equations which must be written in full

Forces and Kinetic Theory

\[ W = mg \]
\[ F = ma \]
\[ F = \text{resultant force} \]
\[ m = \text{mass in kg} \]
\[ a = \text{acceleration} \]

Moment

\[ \text{moment} = \text{force} \times \text{distance} \]
\[ \Delta M = \text{force} \times \text{time} \]

\[ \text{clockwise moment} = \text{anticlockwise moment} \]

Density

\[ \text{density} = \frac{\text{mass}}{\text{volume}} \]

Motion

\[ \text{speed} = \frac{\text{distance}}{\text{time}} \]
\[ \text{velocity} = \frac{\text{displacement}}{\text{time}} \]
\[ \text{acceleration} = \frac{\text{change in velocity}}{\text{time}} \]
\[ \text{displacement} = \text{area between graph and time axis of velocity-time graph} \]

\[ \text{speed} = \text{gradient of distance-time graph} \]
\[ \text{velocity} = \text{gradient of displacement-time graph} \]
\[ \text{acceleration} = \text{gradient of velocity-time graph} \]

\[ s = \frac{1}{2}(u+v) \cdot t \]
\[ v = u + a \cdot t \]
\[ v^2 = u^2 + 2a \cdot s \]
\[ s = ut + \frac{1}{2}at^2 \]

\[ W = mg \]
\[ W = \text{weight in N} \]
\[ m = \text{mass in kg} \]
\[ g = \text{gravitational field strength} = 10 \text{m/s}^2 \text{on Earth} \]

\[ W = \text{weight in N} \]
\[ m = \text{mass in kg} \]
\[ g = \text{gravitational field strength} = 10 \text{m/s}^2 \text{on Earth} \]

\[ m \times g \]

\[ m \times a \]

\[ m \times v \]

\[ \Delta M \]

\[ F \times t \]

\[ \text{moment before} = \text{moment after} \]
**Energy**

\[
\text{efficiency} = \frac{\text{useful output energy}}{\text{total input energy}}
\]

\[
\text{work done} = \text{force} \times \text{distance}
\]

\[
\text{power} = \frac{\text{work done}}{\text{time}}
\]

**GPE = mgh**

GPE = gravitational potential energy in J
m = mass in kg
\(g = 10 \text{ m/s}^2\)
h = height in m

\[
\text{KE} = \frac{1}{2}mv^2
\]

KE = kinetic energy in J
m = mass in kg
v = speed or velocity in m/s

**Unit 2 Formulae**

* denotes equations which must be written in full

**Waves, Sound and Light**

\[
v = f\lambda
\]

\(v = \text{wave speed in m/s}\)
\(f = \text{frequency in Hz}\)
\(\lambda = \text{wavelength in m}\)

**Electricity**

\[
Q = It
\]

\(Q = \text{charge in coulombs}\)
\(I = \text{current in amps}\)
\(t = \text{time in s}\)

\[
V = IR
\]

\(V = \text{voltage in volts}\)
\(I = \text{current in amps}\)
\(R = \text{resistance in ohms}\)

**Series:**

\[
R_T = R_1 + R_2 + R_3
\]

**Parallel:**

\[
\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}
\]

\[
E = Pt
\]

\(E = \text{energy in J}\)
\(P = \text{power in watts}\)
\(t = \text{time in s}\)

\[
\text{number of units} = \text{power in kW} \times \text{time in hrs}
\]

\[
\text{cost} = \text{number of units} \times \text{cost of 1 unit}
\]

\[
P = VI
\]

\(P = \text{power in W}\)
\(V = \text{voltage in V}\)
\(I = \text{current in A}\)

\[
\frac{Ns}{Np} = \frac{Vs}{Vp}
\]

\(Ns = \text{number of turns on secondary}\)
\(Np = \text{number of turns on primary}\)
\(Vs = \text{secondary voltage}\)
\(Vp = \text{primary voltage}\)