HSC Examination Advice – Physics

In Preparation:

Use the syllabus (available from the BOS website) as a guide as to what you will have to study. Every syllabus dot point is examinable in the final exams.

Successful students prepare their own summary notes based on the syllabus. Summarising relevant information from a variety of sources yourself will help you to learn the coursework more deeply.

Make sure you include notes on all practical work. Make a list of all first hand investigations and ensure that you can recount each, its relevance and any safety considerations.

Remember also to revise practical related concepts such as:

- Dependent and independent variables
- Graphing skills
- Risk Assessments
- Validity and reliability in experiments
- Experimental controls

Make a list of all experiments performed by scientists listed in your course. e.g. Thomson’s discovery of the electron, Faraday’s discovery of EM induction, etc

Make a list of all scientists mentioned in your syllabus and their contributions.

Be aware of common tricks in questions eg. The acceleration of a projectile on Earth is constant (usually 9.8 ms\(^{-2}\) down) irrespective of its position, the velocity of light is always 3x10\(^8\) ms\(^{-1}\) irrespective of the observer’s velocity.

Revise your summary notes regularly. Consider re-writing them (not just copying them out).

As part of your revision, complete as many past papers as possible. HSC past papers are best to use. However, past HSC trial papers can also be good practice. There are books on the market that have full solutions to all past papers eg. Success One HSC Physics. Dot Point HSC Physics is also helpful for your revision and gives questions on each dot point in the syllabus.

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“The only person who is educated is the one who has learned how to learn... and change.” Carl Rogers
When doing past papers try to do at least a few under examination conditions and time constraints. Use the data sheets and formula sheets from the Board of Studies site and make sure you are familiar with these.

Mark all the questions you do using the examination marking criteria. If possible get someone else to mark your answers and give you feedback.

Make sure you know the definition of all the HSC verbs, this will be essential for you to answer all questions correctly and obtain full marks from questions.

Learn your formulae. Although you are given a list in the exam you still need to know when to use them, what each symbol in them represents, and what the units are for each quantity.

Note that the Preliminary HSC course is assumed knowledge.

Students must understand the terms “control”, “validity” and “reliability”. Note that these latter two terms do not have the same meaning for first hand data and secondary sources.

**During the Examination:**

- Make sure your writing is legible.
- Draw neat and labeled diagrams.
- Students must have a pencil and a clear plastic ruler for diagrams and graphs.
- Do not use liquid paper. Neatly cross out incorrect working.
- Ask for additional sheets or booklets if necessary, rather than squeezing the answer in to the space provided. Make sure you clearly refer to these on the answer sheet. E.g. “continued in answer booklet”.
- Carry-through errors are not penalised. If you have no idea how to calculate the answer to an earlier part of a question, but you need the answer to complete a latter part, just write down any value for the earlier part and use it in the latter part. You may still get full marks for the latter part.
- Ration your time. You have 1.8 minutes per mark.
- Try to leave time at the end of the paper to check and review.

**Extended Response Questions (4 to 8 marks):**

- Read the question carefully.
- Read it again, underlining the verb and key terms in the question.
- Check to see if the question could be interpreted in more than one way.
- (If so, you should try and answer it in both ways!)
- **Brainstorm relevant points** (including the obvious ones) and jot them down somewhere.
- Prioritise and order your points.
- **Re-read the question to ensure that your points address all parts of it.**
- Write your answer. (*Do not limit yourself to the space allocated on the paper!*)
- Draw relevant labeled diagrams to assist with explanations, even when they are not explicitly asked for.

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- Re-read your answer to ensure it is clear and says what you intended it to, checking that you have covered all the points that you jotted down (check them off).

**Numerical Problem Solving Questions**

- Read the question carefully.
- Read it again, extracting and tabulating the data, converting to SI units when needed.
- Write the appropriate formulae from the sheet.
- Show substitution into the formula.
- Show clear and complete working, including the original formula and the substitution step.
- Take care not to omit any squares or cubes.
- Draw a clear, labelled vector diagram if necessary.
- If the calculated quantity is a vector, state the direction.
- Re-read the question and check that you have answered all parts of it.
- Answers should always be given to at least two significant figures.
- Highlight, underline or box your final answer.

**Graphs**

- Make sure you include all the points of CUTLASS when drawing graphs.
  (Plot points with Crosses, Units on axes, Title, Line of best fit, Axes labeled, Scale even, Size large).
- Always label each axis with the quantity and its units.
- Identify the independent variable (usually the x axis) and the dependant variable (usually the y axis).
- Remember when taking units from gradients look carefully at the prefixes on the axes.
  Eg. Current may be measured in mA and your answer could be 1000x what you thought.

**More subject specific advice will be issued to students at our “Trial Exam Revision Lectures”.**

Good luck with your exam preparations! TSFX

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