## EXAM FORMAT

- **Multiple choice questions**
  - These are often application questions that involve small calculations
  - Long answer questions
  - These questions can be related to one or more course concepts. It is therefore important to recognize how some of the formulas you are given can interact with one another

## HOW TO STUDY

- Summarize key points from lectures
  - While there is a textbook, anything in the textbook that is not covered in class is not testable material
- Redo in-class examples
  - Ensure you understand where numbers are coming from as well as how and why a certain formula was chosen
- It may be useful to:
  - Create a fact sheet for yourself to aid your studying
  - Annotate your formula sheet while you are studying
  - At the beginning of the exam write in your annotations on the formula sheet to avoid mixing up small details later on in the exam
- Familiarize yourself and practice with the formula sheet; it will be the same format as the one given to you during the exam and knowing where certain formulas are can save you time

## DO’S AND DON’TS

<table>
<thead>
<tr>
<th>Do</th>
<th>Don’t</th>
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<tbody>
<tr>
<td>Watch out for unit conversions</td>
<td>Get caught up on one multiple choice question</td>
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<tr>
<td>Look for irrelevant information given in questions. The GRASS Method can be helpful to avoid getting caught up in information that is not needed to solve the problem</td>
<td>Some are harder than others but they are all worth the same number of marks</td>
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<tr>
<td>Use Diagrams! They can be especially helpful for questions with forces or directions</td>
<td>Sit and stare at one long answer question. These questions often vary in difficulty as well; move on and come back to it</td>
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<td>Show all your work for the long answer questions</td>
<td>Sometimes answering other questions on the exam can help remind you of different strategies to solve the long answer</td>
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<td>Read the entire question before starting to solve it</td>
<td>Assume you know what the question is asking for because it is similar to another question you did previously</td>
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<td>Remember that multiple formulas may be needed to solve a question</td>
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## FINDING PRACTICE QUESTIONS

- Re-do in-class problems! It is beneficial to understand:
  - How and why a formula is being chosen
  - Where numbers are coming from
  - It’s easy to be overwhelmed by practice questions online. While this might work for some, if you find it stresses you out, stick to the course material given to you.
  - Use your past term tests to your advantage!
  - For additional questions, the textbook is also a good resource to use

## HOW TO CHOOSE THE CORRECT FORMULA

1. **GRASS Method**
   - G - Given; Write out all of the given information in the question
   - R - Required; Write down what the question is asking you to solve for
   - A - Assess; Analyze your “given” and “required” data and see what formula(s) may be useful. Rearrange your formula(s) if necessary
   - S - Substitute; Input your given data into your chosen formula(s)
   - S - Solve; Complete the calculation and state your answer ensuring correct units

2. **Working Backwards**
   - Find all the formulas that include the variable the question is asking you to solve for. From there you can see if you have the rest of the required variables
   - If you do, you can proceed to complete the calculation
   - If you don’t, look at what other formulas you could use to obtain the required variables

## ADDITIONAL RESOURCES

- Need help on how to approach application based questions?
- Want to review common types of difficult problems?
- Do you struggle with multiple choice questions?
- Looking for special techniques about how to write math and science exams?
- Want useful advice about how to manage your time and reduce test anxiety?
- Then visit SASS’ online exam prep guide at http://sass.queensu.ca/exam-prep

Also try:
- Asking profs questions at office hours – it’s not too late!
- Creating a small study group
- Looking for course-specific workshops run by student groups such as the Physics DSC
- ASUS’ Peer Tutoring service (or ask the Department of Physics for their list of tutors)
- Search for explanations of foundational concepts on the Khan Academy website: https://www.khanacademy.org/science/physics