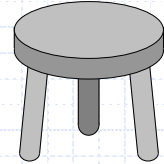


Cambridge University Engineering Department Tripos Examination Skills Session



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Introduction

- Approaches to revision and exams vary.
- Take the advice in this talk that works for you.
- You must be good at exams to be here at all, *but* the Tripos exams may be longer and harder than anything you have done before.

So:

- listen now, & read other advice (e.g. SSJC)
- make up your own mind about what to do

Important Preliminaries

- Check Examiners notice board (Inglis corridor) for the regulations published for your exams.
- Check your coursework marks when they are posted in the Baker Building foyer.
- Close to the exams, check the Baker Building notice boards for the rooms and times of your exams.
- Make sure you know where to go and when, and the order of examinations.

Calculators and Databooks

- Make sure you have an authorised *calculator*.
- Read through your Data Books:
 - know what is in them
 - know what is NOT in them
- Practice using your calculators
- Practice finding data and formulae in the Data Books.

Dates of Exams in 2012

- Don't rely on this slide - check the Examiners notice board (Inglis corridor).
- First Year: 6 June → 12 June
- Second Year: 4 June → 8 June
- Third Year: 23 April → 9 May
- Fourth Year: 23 April → 9 May

The Purpose of Examinations

“... is to determine the extent to which candidates have achieved the aims & objectives of the lecture courses”

Examinations therefore seek to determine the extent to which students:

- know the basic principles, and their limitations;
- have developed skills in applying the basic principles to solve straightforward problems;
- have developed a deeper understanding, going beyond routine exercises to solve unfamiliar problems.

Typical Question Structure

Often (but not always) a series of linked steps:

- Statement of principle, with examples of when and how the principle is employed.
- Perform a straightforward application of the principle. [IA short questions stop here]
- Probe an aspect of the problem in greater depth. [long questions only]

Know the rubric for each paper

Module 3C2 (NB Part IIA)

ENGINEERING MATERIALS AND PROCESSING

Answer not more than **three** questions.

IA: no choice!

All questions carry the same number of marks.

The **approximate** percentage of marks allocated to each part of a question is indicated in the right margin.

There are no attachments.

IA: short/long questions

STATIONERY REQUIREMENTS

Single-sided script paper

SPECIAL REQUIREMENTS

Engineering Data Book

CUED approved calculator allowed

Exam Technique I

- 10 minutes reading time allowed – use it!
- Identify the order in which to attempt the questions.
- First do the questions that you think you'll find easiest.
- Attempt the correct number of questions.

Manage the time strictly – know how many minutes per question, and stick closely to it.

Exam Technique II

Time per question in IA:

8 short (10 marks)

4 long (30 marks)

Total: 200 marks

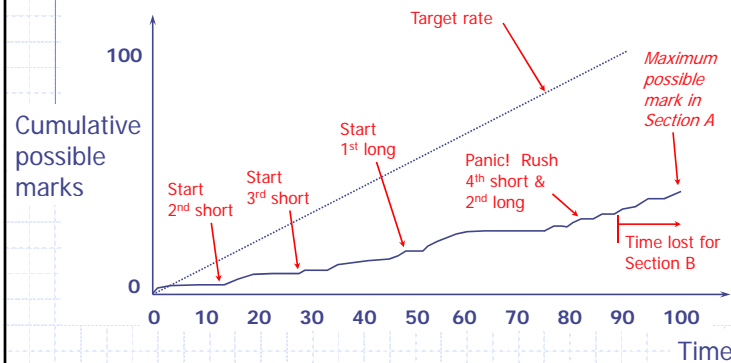
3 hours \Rightarrow 180 minutes

\Rightarrow short: 9 minutes

long: 27 minutes

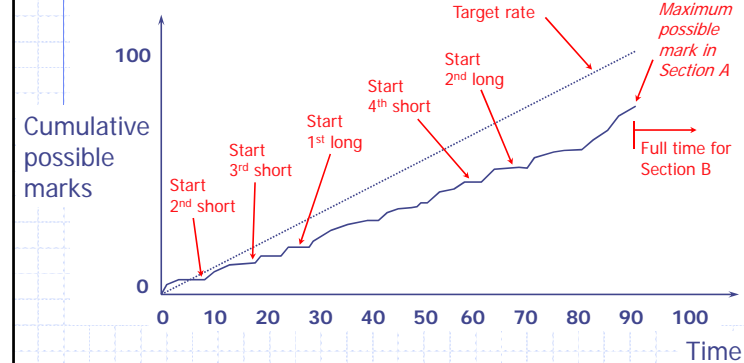
Exam Technique III

Bad tactics: (e.g. for one half-paper in IA)



Exam Technique IV

Good tactics: (e.g. for one half-paper in IA)



Exam Technique V

- Key points on timing:
 - know when to move on
 - practice against the clock beforehand
- Most of the marks are for *method*, *understanding* and *insight* rather than for getting the right answer.
- Calculator errors (and their knock-on effects) are not severely punished – unless the result is clearly nonsense.
- Explain clearly what you are doing
If time short, or you are stuck: make a few notes on what you are trying to do

Help the Examiner

- Write legibly (on one side of the paper only).
- Lay out your answers so that they are easy to follow, and highlight answers.
- New question: new sheet of paper.
- In descriptive answers, highlight keywords and use bullet points.
- “Explain *briefly*.....” means just that.
- Diagrams: neat & clearly labelled (use a ruler; graph paper is provided), make them **BIG ENOUGH**. Diagrams are a major part of your method.

Ending an Exam

- Take time to put together your script.
- Make sure that the right pages are included.
- Make sure the pages are in the right order.
- Tie up questions in numerical order.
- Tie up sections individually.
- Complete the cover sheets correctly.

Approximate Class Boundaries

Class	% on Exams †	% of Cohort
1 st	> 70%	26%
II.1	60 → 70%	38%
II.2	50 → 60%	27%
III	40 → 50%	8%
O/F	< 40%	1%

† i.e. not including coursework marks

Revision Strategy I

- Revision methods:
 - make abbreviated notes on the lecture notes
 - make “mind maps” etc
 - re-visit selected Examples paper questions
 - past papers, using notes and/or cribs
 - past papers, without notes and cribs
 - past papers, without notes, against the clock
- Always *revise actively*:
Don't just sit and read the notes, hoping something will sink in.
Do something (as above) with your reading.

Revision Strategy II

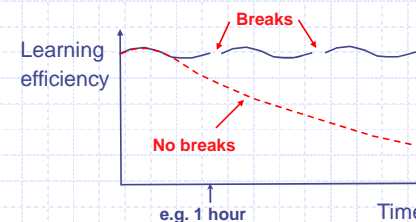
- Draw up a revision timetable, including past papers.
- Allow for new material in Easter Term.
- Start work early in the vacation rather than in a rush at the end.
- Plan for some final revision of later papers, to do after the exams have started.
- Important to keep all subjects on the go:
 - learning is cumulative: need to limit the gaps between visits to a topic
 - but, need at least a minimum block of time on a topic to be productive

Revision Strategy III

- Extremes – neither effective:
 - (1) Long blocks:
 - Weeks 1+2: Mechanics
 - Weeks 3+4: Thermofluids
 - (2) Chop and change:
 - Day 1: Mechanics (15 minutes),
Thermo (10 minutes),
Electrical (30 minutes)
- Find your own optimum: typically stick with one topic for a few hours, up to (at most) one day

Revision Strategy IV

- Maintaining concentration:
 - concentration fades with time
 - divide days/hours into manageable blocks, with planned breaks, and stick to them
 - concentration picks up towards the end of each block



- Again, find your own optimum

Revision Strategy V

- In IA, don't "topic spot", i.e. guess what topics will come up and concentrate on these - this is a high risk strategy.
- Ditching topics may be tempting, but this may come back to haunt you in IB!
- Learn *all* the basic material - get the easy marks.
- Maintain a balance — do not focus too much on your weaknesses or your strengths.

Using the cribs

- Cribs may not be 100% accurate.
- Don't look at the cribs before attempting a question for the first time.
- Read through and make sure you understand every step.
- Try again another day.
- In summary: cribs are a valuable learning aid, but be disciplined and don't fool yourself.

Staying Fit & Healthy I

- Sleep, eat and drink sensibly.
- Don't work late into the night and sleep in.
For a 9.00 am exam, you need to be used to being awake at that time of the day.
- Don't work all the time! Sport, music, socialising etc are just as important in the exam term.
- But if you got behind with work in the first two terms, back off on your other activities (without dropping them altogether).
- Remember: the river will still be there in your 4th year!

Staying Fit & Healthy II

- Aim for a *steady* work-rate, interspersed with recreational activities.
- Do this and you are unlikely to fail.
- Make a strict division between work and relaxation. Work hard when you work, completely relax when you relax.

If You Get Stressed

- Talk to your Tutor first (or another College Tutor if you prefer).
- You can also talk to:
 - your Director of Studies, and Supervisors
 - your family and friends
 - JCR/SU Welfare Officer
 - College Chaplain, or Counselling Service
- Avoid other stressful commitments for a while.
- If you are ill, see your Doctor immediately.

Exam Day

- Eat a decent breakfast/lunch before exams. You cannot break for snacks!
- If it is pouring with rain (or threatening to) take a towel/spare clothes with you.
- Check beforehand that you have functional calculator, pens etc (Databooks will be provided).
- Arrive 15 to 20 minutes before the start of the exam.

Checklist

- Practice using your calculator.
- Become familiar with your Data Books.
- Draw up a revision timetable.
- Practice plenty of Tripos questions.
- Practice doing Tripos questions at Tripos speed.
- Sleep, eat and drink sensibly.
- Work steadily, and revise actively.
- Make time to relax.
- Make sure you know where/when your exams are.

Good luck !

Any Questions?