2003 Physics Promotional Examination
Guidelines for Preparation

Sep 2003

Name : _____ **Registration Number : 03S**_____

Date : 15 October 2003 (Wednesday) – Term 4 Week 5
Time : 0815 to about 1120 h
Venue : _____

You may plan your schedule of revision using this table.

	Lecture Topics	Tutorials		1	2	3	4	Remarks
1	Physical Quantities and Units	• Physical Quantities and Units • Scalars and Vectors						
2	Errors and Uncertainties	• Errors and Uncertainties						
3	Temperature	• Temperature						
4	Kinematics	• Linear Kinematics • Non-linear Kinematics						
5	Dynamics	• Newton's laws of motion • Linear Momentum						
6	Forces	• Forces						
7	Work, Energy, Power	• Work, Energy, Power						
8	Motion in a Circle	• Motion in a Circle						
9	Gravitational Field	• Gravitational Field						
10	Physics of Fluids	• Physics of Fluids						
11	Oscillations	• Oscillations						
12	Waves	• Waves						
13	Superposition	• Stationary waves • Interference • Diffraction						
14	Ideal Gases	• Ideal Gases						
15	Thermal Properties of Materials	• ***based on lecture notes only***						

Structure of Paper:

Section	Questions	Marks	Time allocated
A#	20 mcq (shade on optical answer sheet OAS - note your **registration no.**)	40	40 min
B	7 short-structured (write on question paper)	70	About 85 min
C	2 long-structured (writing paper provided)	30	About 45 min
		140	**2 h 50 min**

#There is a short interval after Section A to collect the OAS and question papers and distribute Sections B and C.

General Advice

Revision plan

- Plan ahead what are the topics to be covered in the one week break, Term 4 week 1, 2, etc.
- Spread out your revision topics over several weeks.
- Allow flexibility in your schedule (easy, confident topics can be covered faster) but be self-disciplined to stick to the main schedule in order to complete your revision on time.
- The better you're prepared, the more confident you become!

- **Revision and practice materials**
  - Lecture notes (focus on **Assessment Objectives stated in syllabus**)
  - Do selected **summaries**/mind-maps/concept maps etc. of key concepts, laws, equations, etc.
  - **Tutorial** solutions, tests, quizzes (revise and focus on **problem solving techniques**)
  - Complete all **Revision Exercises** and practise selected questions, review unfamiliar problems (both mcq and structured) in **Past-Year Series**.
  - **Bonus** : Practise questions from
    - Past year Promo Exam papers with solutions (**Redspot** file no. 1.14 or 1.14a – 1999 to 2002)
    - Additional problems in other reference books, e.g. *Physics* (Robert Hutchings) in red-spot.

- **The day before**
  - Get ready your **calculator** (in good working order, have a spare if possible), **stationery** and a watch.
  - Have sufficient sleep/rest the day before the paper.
  - **Know the venue for your class!**

- **Actual day**
  - Have a light breakfast.
  - **Do not bring any valuable and electronic communication device to the venue!**
  - Bring a sweater/wind-breaker (if necessary)
  - Be at the correct venue **about 30 minutes before** start of paper.
  - Raise your hand immediately if you have any problem/request.

Hints for Solving Physics Problems

1. Try to understand the physics of the problem before launching into a mathematical analysis
   - identify given and required variables
   - recall related physical laws, formulae and equations
   - recall similar systems
2. Show your working neatly and clearly on the page, and explain what you are doing and why you are doing it.
3. Draw a clearly-labelled diagram if it helps (it nearly always does).
4. Try to keep expressions algebraic (using suitable symbols) rather than numerical.
   Advantages:
   - units of your answer can be checked easily at the end of your calculation.
   - less likely to make mistakes if you are manipulating a few symbols rather than actual numbers.
   - expressing your answer algebraically first allows easier checking later.
5. Check the units of your answer.
6. Check the magnitude of your answer against common sense or other knowledge.
7. Generally, **intermediate** results should be calculated to 4 or more significant figures. However, **do not** use more than **3** significant figures in your **final** answer (unless the given data has more than 3 significant figures).