

Exam Report

Module Code/Title: PHYS3011: Photons in Astrophysics: Exam Report

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Feedback comments:

Can I begin with my standard request to students: Please explain what you are doing. When an incorrect equation has been written down, there is very little chance of obtaining any credit if no explanation of what the equation means or where it comes from is given. However if some explanation is given, you might justify some marks.

I would also appreciate it if students could keep the various parts of a question together. It was quite common for a student to start with, eg B2 part c, then on the next page do B1 part b, then B1 part a, then back to B2 part a. Sometimes I would find part of an A-section question at the back of the last answer book without any mention of it earlier on. I then wonder if this is just scrap working or a real answer and have to check back carefully to try and find out. Such muddled presentation increases the chances of marks being missed, despite our best efforts to check.

The A-section questions covered the course in broad outline, involving concepts which had been stressed many times, eg particle lifetimes. I did not think that they were particularly difficult but the overall responses were not as good as I had hoped.

A1 required a broad knowledge of various emission mechanisms. Some students had that knowledge, others didn't. Although the question on deriving a particle radiation lifetime (A2) was stated in a new form, the basic idea was the same as always. A3 and A5 were relatively standard questions but still not well answered. A4 simply required that they added up the IR, optical and UV luminosities before using the standard black body Luminosity $\sim T^4$ formula, but not many people did that. I specifically went over Teff in my final 'problems' lecture.

Sometimes a question was only partly answered. For example a temperature might be derived but the important implication is not mentioned. Such small omissions only lose small fractions of points, but it is better to complete the answer.

Most students answered B1 and B3. The answers to B3 were much better than the answers to any other B-section question. However the answers to B1, which was a variation on an old standard, were not good. If you had asked me in advance, I would not have guessed at that outcome.

The exam average mark, for 49 students, was 49 (all marks in per cent). If we ignore the two students with marks below 10, then the average rises slightly to 51. There were no students just below the 40 cut-off but 14 students failed.

The external examiner had commented:

'A carefully structured, demanding paper with interesting questions, thank you'.

The class were, actually, the best behaved class I have taught. They were very attentive and gave the course good questionnaire responses. When I asked questions in the lectures I received good replies which showed that they were following well. This was not a class of lazy or inattentive students. Given also the comment from the external about the exam being 'demanding', I propose that the average be raised to be in line with other courses which this cohort have taken, ie raising the average to at least 60.