

# Exam Report

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**Module Code/Title: PHYS3004**

**Module Leader: Marcus C. Newton**

*Feedback comments:*

The following is a breakdown of how well in general students approached and answered each question:

A1: This question was generally answered well. Some had difficulty in determining how the electron density might influence the van der Waals bonding.

A2-6: Questions here were received well with most students able to provide answers in full.

B1: There seemed to be some misunderstanding amongst some students as to the mechanism of X-ray scattering. It might be necessary to place more emphasis on clarifying this in future classes. Most students were able to reproduce the diffraction geometry although there were a number who drew the momentum transfer incorrectly. The remaining part of the question was generally answered well.

B2: Sections (a) to (d) were generally answered well. In (e), some students neglected to use the reduced zone scheme although they were not heavily penalised for this. Most grasped the concepts and were able to answer this section reasonably well.

B3: Most students struggled with the last part of this question with several students sketching what appears to be a MOSFET structure rather than a pn-junction. More careful reading of the question might have helped to avoid this mistake.