

UM-SJTU JI Summer 2019 VE 320 Quiz 1

Name:

Student ID:

1. Determine the phase velocity and group velocity of a free electron with wavelength of 7.3 nm, given that the electron mass is 9.1×10^{-31} kg.

2. Determine the width (in eV) of the second forbidden energy band existing at $ka=2\pi$. Assume that the coefficient $P'=8$ and the potential width is $a=4.5\text{\AA}$. Please provide the process of derivation.

