

Course convenor: Dr. Mohammad Abdur Rashid
Course title: Condensed Matter Physics
Course code: PHY 5111
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Quiz # 1 | Time: 20 min | Date: 07/08/2021

For MS first semester (2019-2020) students who are attending Condensed Matter Physics (PHY 5111) course.

* Required

Email *

Your email

Your full name: *

Your answer

Q1: What are the assumptions made in constructing the Hamiltonian for free Fermi gas? 4 points

Your answer

Q2: For gold the conduction band electron density is $5.90 \times 10^{28} \text{ 1/m}^3$. 4 points
What are the values of Fermi velocity and Fermi temperature?

Your answer



Q3: Write down the characteristics of Fermi Function.

4 points

Your answer

Q4: Define Fermi energy.

2 points

Your answer

Q5: Why is the derivative of Fermi function only nonzero over an energy range of order kT (k is Boltzmann constant) around the Fermi energy?

2 points

Your answer

Q6: State and explain the Bloch's Theorem.

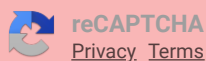
4 points

Your answer

A copy of your responses will be emailed to the address you provided.

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