Course convenor: Dr. Mohammad Abdur Rashid
Course title: Condensed Matter Physics
Course code: PHY 5111
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Quiz # 3 | Time: 20 min | Date: 07/09/2021

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: The electron density is defined by the expression given below. What is the unit of ρ? 3 points

$$\rho(\mathbf{r}_1) = N \int \cdots \int |\Psi(\mathbf{x}_1, \mathbf{x}_2, \ldots, \mathbf{x}_N)|^2 \, ds_1 \, d\mathbf{x}_2 \cdots d\mathbf{x}_N$$

Your answer

Q2: What are the assumptions upon which the Thomas-Fermi model is based on? 5 points

Your answer

Q3: What are the advantages the Hohenberg-Kohn theorem have over the Thomas-Fermi model? 5 points

Your answer

Q4: When a density is called v-representable? 3 points

Your answer

Q5: What does the exchange-correlation term in the Kohn-Sham density functional theory represents? 4 points

Your answer

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

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