

CL24_Q1. Give the basic ideas of quantum free electron theory of metals.

CL24_Q2. Explain the (energy) distribution of free electrons at 0K based on the quantum free electron theory.

CL24_Q3. Discuss the free electron theory of electronic conduction in metals. Comment on the effect of temperature and impurities on conductivity.

CL24_Q4. State Mattheissen's rule and give an account of the nature of total resistivity both at high and low temperature.

CL24_Q5. Describe how quantum free electron theory has been successful in overcoming the failures of classical free- electron theory.

CL24_Q6. Elucidate the difference between classical free electro theory and quantum free electron theory.