In a 3-dimensional insulator, there are phonons and Ferro-magnetic spin waves. The FM spin wave is known to have dispersion $\omega \propto |k|^2$.

Q1. The dominant contribution for the low energy density of states comes from

A. Phonons B. FM spin waves C. Equally from both

Q2. The dominant contribution for the low temperature specific heat comes from

A. Phonons B. FM spin waves C. Equally from both

Q3. The dominant contribution for the low temperature specific heat is

A. T^3 B. T^5 C. $T^{3/2}$