

Solid state physics 2020 Minitest 2 (120 minutes)

12 March 2020

These are example solutions for your reference under the following conditions.

- If these solutions contain mistakes (and they may), the physical correctness has priority over them in grading.
- You may not distribute or repost this document.

(c) (5 points) Explain how this dispersion relation with $t_1 \neq 0$ and $t_2 = 0$ relates to that of a simpler model.

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(d) (5 points) Explain how this dispersion relation with $t_1 = 0$ and $t_2 \neq 0$ relates to that of a simpler model.

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(e) (15 points) In the general case $t_1 \neq 0$ and $t_2 \neq 0$ sketch the dispersion relation and sketch the density of states. In your sketches remember to label the axes and relevant parameter values.



