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Roll No

MEVD-204
M.E./M.Tech., II Semester
 Examination, June 2017
Microelectronics
Time : Three Hours

Maximum Marks : 70

Note : i) Attempt any five questions.
 ii) All questions carry equal marks.

1. a) What is nearly free electron approximation?
 b) Give a brief review of quantum mechanics theory.
2. a) What do you understand by Effective Mass in Solid State Physics? How was Effective masses Traditionally measured?
 b) Discuss Kronig-Penney Model.
3. Give a study regarding minority carrier life time and recombination mechanism.
4. a) Explain briefly about the Boltzmann transport equation.
 b) Explain the phase space and density function.
5. a) Discuss the effect of high field on drift velocity.
 b) What is the relation between scattering and mobility?

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6. Discuss in detail about excess currents and breakdown in p-n junctions.
7. a) Discuss the switching characteristic of Bipolar Junction Transistor.
 b) Explain High current and High frequency effect.
8. Write short notes on any two of the following :
 a) Non uniformly doped transistor
 b) Eber Moll Model
 c) Statistics of carriers in semiconductors

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