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Question Paper Code: 52731

M.E. DEGREE EXAMINATION, NOV 2016

Third Semester

VLSI Design

15PVL301 - SOLID STATE DEVICE MODELING AND SIMULATION

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

(5 x 20 = 100 Marks)

1. (a) Explain in detail about resistance and capacitance modeling. (20)
Or
(b) Derive the expression for threshold voltage of the MOSFET. (20)
2. (a) Explain single frequency excitation and describe how gain expansion and gain compression are achieved? (20)
Or
(b) Describe the basic non-linearity and hence derive the expressions for non-linear conductance and multi-dimensional trans-conductance. (20)
3. (a) Explain the BSIM 4 channel charge model and mobility model with suitable equations. (20)
Or
(b) Explain the enhanced models for NULD due to pocket Halo Implant. (20)

4. (a) Discuss the charge storage effects of EKV model. (20)

Or

(b) Explain in detail MOSA 1 model. (20)

5. (a) Explain the LPVB influence in resistors and capacitors. (20)

Or

(b) Explain the automation of tests with diagram. (20)
