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Question Paper Code: 52558

M.E. DEGREE EXAMINATION, NOV 2016

Elective

Power Electronics and Drives

15PPE518 - NONLINEAR DYNAMICS OF POWER ELECTRONIC CIRCUITS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 20 = 100 Marks)

1. (a) Explain in detail about the dynamics of discrete-time systems. (16)

Or

(b) Explain in detail about border crossing and border collision bifurcation. (16)

2. (a) Write about the analysis method based on transient simulator. (16)

Or

(b) What are the basic operational requirements of bifurcation diagram and give the digital implementation? (16)

3. (a) Describe in detail about border collision bifurcations in the current mode controlled boost converter. (16)

Or

(b) Explain the operation of Cuk converter with discrete time modeling. (16)

4. (a) Explain in detail about voltage source converter with its hysteresis AC current controller. (16)

Or

(b) Explain the non linear phenomenon in PMSM drives. (16)

5. (a) What is switching surface control and give the necessary conditions for switching surface controls. (16)

Or

- (b) Explain in detail about Hysteresis control. (16)
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