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Question Paper Code: 55002

Ph.D COURSE WORK EXAMINATION, MAY 2018

Elective

Course Work

15PPE502- DIGITAL SIMULATION OF POWER ELECTRONIC SYSTEMS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Model a resistor using any semiconductor and explain the process in detail. CO1-App (20)

Or

(b) Model a firing circuit for a thyristor and explain the operation of it. CO1-App (20)

2. (a) Assume a system and derive the incidence matrix for it. CO2- Ana (20)

Or

(b) Discuss the Explicit and Implicit integration method with suitable example. CO2- Ana (20)

3. (a) Demonstrate the electro mechanical model of DC motor with necessary setup. CO3-App (20)

Or

(b) Model a squirrel cage type induction motor and derive the torque expression for it. CO3-App (20)

4. (a) Explain the construction and operation of single phase phase controlled converter with neat diagram. CO4-U (10)
- Or
- (b) Explain the different methods to design the controllers. CO4-U (20)
5. (a) Consider a real time example for DSP based controllers of induction motor and discuss the advantage of it. CO5- Ana (20)
- Or
- (b) Construct an induction motor using P spice simulator and discuss the various parameters can be analyzed by it. CO5- Ana (20)