Reg. No. :

Question Paper Code: 95T14

Ph.D. COURSE WORK EXAMINATION, NOV 2019

Elective

Power electronics and Drives

19PPE514 – DIGITAL SIMULATION OF POWER ELECTRONIC SYSTEMS

(Regulation 2019)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Elucidate the theory of computer formulation of digital equations with neat flow chart. CO1- U (20)

Or

   (b) Explain about the various methods of analysis of power electronic systems. Mention the importance of digital simulation. CO1- U (20)

2. (a) Elucidate the theory of formulation of proper tree algorithm with neat diagrams. CO2- U (20)

Or

   (b) Explain with neat diagram the formulation of fundamental cutest matrix. CO2- U (20)

3. (a) Draw the equvivalent circuit for three phase induction machine. Also Derive the electromagnetic torque equation. CO3- U (20)

Or

   (b) Explain in detail about State Space Modelling. Derive the State Space Model for Induction machine for Control and Monitoring Purpose. CO3- U (20)

4. (a) Explain the operation of three phase fully controlled bridge rectifier (six pulse converter) with RLE load and draw the necessary wave forms. CO4- U (20)

Or

(b) Derive the transfer function for the three phase fully controlled bridge converter for simulation using using pspice simulator.   CO4- U   (20)

5. (a) Draw the power circuit arrangement of three phase variable frequency inverter for the speed control of three phase induction motor and explain its working using DSP Controller.   CO5- U   (20)

Or

(b) Simulate the pspice model of Half and Full Wave rectifier using PSPICE Simulator.   CO5- U   (20)

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