SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR

Siddharth Nagar, Narayanavanam Road – 517583

(Autonomous)

QUESTION BANK (DESCRIPTIVE)

Subject with Code : Digital Control of Power Electronic and Drive Systems (19EE2113)
Course & Branch: M.Tech - EEE   **Year & Sem:** I & II-Sem
Regulation: R19

UNIT –I
Introduction

1. Explain the review of numerical methods to control power electronic converters?   12M

2. Discuss the numerical methods to solve transients in D.C. switched R circuit?   12M

3. Give the applications of numerical methods to solve transients in D.C. switched L?   12M

4. Explain the application of numerical methods to solve transients in D.C. switched R-L?   12M

5. Explain the application of numerical methods to solve transients in D.C. switched R-C?   12M

6. Compare the transients in D.C. switched R-L-C circuit and R-L circuit?   12M

7. Explain the concept of R-L circuit with dc excitation under steady state condition?   12M

8. Compare the working of R-L circuit and R-C circuit with dc excitation under dynamic state? 12M

9. Explain the working of R-C circuit with dc excitation under steady state?   12M

10. Explain the working of R-L-C circuit with dc excitation under dynamic state?   12M

UNIT –II

1. Discuss the working of diode with R load with AC supply?   12M

2. Give the significance of diode with R-L load with AC supply?   12M

3. With neat waveform explain the working of diode with R-C load with AC supply?   12M

4. Discuss the working of diode with R-L-C load with AC supply?   12M

5. Compare the modeling of SCR and TRIAC in simulation?   12M

6. Explain the modeling of IGBT in simulation?   12M

7. Explain the application of numerical methods to R, L, C circuits with power electronic switches? 12M

8. Explain the Simulation of gate/base drive circuits?   12M

9. Draw the block diagram of modeling of Power transistor in simulation?   12M

10. Explain the importance of snubber circuit and simulation of snubber circuits?   12M

UNIT –III

1. Explain the State space modeling and simulation of linear systems?   12M

2. Write the equations of state space modeling used in simulation?   12M

3. Give the basics of electrical machine modeling of induction machine?   12M

4. Draw the block diagram of electrical machine modeling of DC machine?   12M

5. Explain the introduction to electrical machine modeling of synchronous machine?   12M

6. Explain the simulation of basic electric drives?   12M

7. Explain the simulation of stability aspects?   12M

8. Explain the working of induction machine with neat equivalent circuit diagram?   12M

9. Give the working principle of DC machine with neat diagram?   12M

10. Explain the working of synchronous machine with neat equivalent circuit diagram?   12M

UNIT –IV

1.   Compare the single phase controlled and uncontrolled (SCR) rectifiers?   12M

2.   Explain the Simulation of three phase uncontrolled (SCR) rectifiers?   12M

3.   Draw the block diagram of Simulation of three phase controlled (SCR) rectifiers?   12M

4.   Explain the Simulation of single phase controlled (SCR) rectifiers?   12M

5.   Explain the Simulation Converters with self-commutated devices?   12M

6.   Explain the simulation of power factor correction schemes?   12M

7.   With neat figures explain the power factor correction schemes?   12M

8.   Derive the formulae for the output voltage of single phase controlled (SCR) rectifiers?   12M

9.   Draw the output waveforms of three phase controlled rectifiers and explain

     Principle of operation of three phase controlled (SCR) rectifiers?   12M

10.   Explain the principle of operation of Converters with self-commutated devices?   12M

UNIT –V

1.	Give the current commutation schemes for thyristor choppers?	12M
2.	Explain in detail Simulation of thyristor choppers with voltage commutation schemes?	12M
3.	Compare current commutation and load commutation schemes in detail?	12M
4.	Draw the Simulation diagram of chopper fed DC motor?	12M
5.	Explain in detail Simulation of single phase inverters with thyristors?	12M
6.	Explain in detail Simulation of Three phase inverters with thyristors?	12M
7.	Explain in detail Simulation of self-commutated devices?	12M
8	Give the mathematical equations of Space vector representation?	12M
9.	Explain Pulse-width modulation methods for voltage control and Waveform control?	12M
10.	Write the mathematical equations and explain the Simulation of inverter fed induction motor drives?	12M

Prepared by: **S.MUNISEKHAR**