ASSIGNMENT-1

Course- M.TECH (1st year/ 1st sem) **Sub code-MT-EE-111**

Sub- Analysis of machine drives

Last date of Submission- 06/11/2016

Instruction

1) Write the responses to the assignment in your own handwriting.

2) Submit the responses to your HOD within the due date.

3) Write your name, program and Enrollment number clearly at the top of the page.

Q1.

a) Explain the energy conversion in drives in brief?

b) Describe the switching and surge voltage transients in transformers?

Q2

a) Explain the frame theory of three phase symmetrical alternating current machines?

b) Describe the transformation model of static and rotating frames?

ASSIGNMENT-2

Course- M.TECH (1st year/ 1st sem) **Sub code- MT-EE-111**

Sub- Analysis of machine drives

Last date of Submission-06/11/2016

Instruction

1) Write the responses to the assignment in your own handwriting.

2) Submit the responses to your HOD within the due date.

3) Write your name, program and Enrollment number clearly at the top of the page.

Q1

a) Explain the lineralized and non lineralized analysis of three phase machine?

b) Explain the analysis and dynamic modeling of single phase and two phase asymmetrical induction motor?

Q2

a) Explain the operating characteristics and analysis of switch reluctance motor?

b) Explain the dynamic modeling and self controlled operation of synchronous machine?

ASSIGNMENT-1

Course- M.TECH (1st year/ 1st sem) **Sub code-MT-EE-112**

Sub- HVAC and HVDC transmission system

Last date of Submission- 06/11/2016

Instruction

1) Write the responses to the assignment in your own handwriting.

2) Submit the responses to your HOD within the due date.

3) Write your name, program and Enrollment number clearly at the top of the page.

Q1.

a) Details the areas of HVDC transmission. Also discuss various types of D.C links and show clearly how one type is different from other types?

b) Give a comparison between HVDC system and EHV AC system based on economics, technical performance and reliability if bulk power is transmitted over a longer length of lines?

Q2

a) Explain the design concepts and analysis of static VAr system?

b) Why are converter faults caused? Discuss various types of faults against which protection has to be provided. Discuss protection against over currents in terms of selectivity, reliability and back up?

ASSIGNMENT-2

Course- M.TECH (1st year/ 1st sem) **Sub code- MT-EE-112**

Sub- HVAC and HVDC transmission system

Last date of Submission-06/11/2016

Instruction

1) Write the responses to the assignment in your own handwriting.

2) Submit the responses to your HOD within the due date.

3) Write your name, program and Enrollment number clearly at the top of the page.

Q1

a) Discuss parallel operation of AC and DC systems. How is AC operation interfaced with DC system. Discuss in brief?

b) Discuss corona loss in HVDC link. Also explain VI characteristics of HVDC system?

Q2

a) What is importance of harmonics in HVDC operation? How characteristic harmonics is different from non characteristic harmonics-discuss?

b) Discuss criteria of design of a.c filters? Also mention various types of a.c filters and show their circuit configuration and impedance characteristics?

ASSIGNMENT-1

Course- M.TECH (1st year/ 1st sem) **Sub code-MT-EE-113**

Sub- Power Converters

Last date of Submission- 06/11/2016

Instruction

1) Write the responses to the assignment in your own handwriting.

2) Submit the responses to your HOD within the due date.

3) Write your name, program and Enrollment number clearly at the top of the page.

Q1.

a) What is power semiconductor device? How many types of power semiconductor device? Explain the operation and characteristics of semiconductor devices?

b) Describe the PWM inverter? Also explain the power factor improvement through PWM strategies?

Q2

a) Explain the design consideration of the drive circuits in brief?

b) Explain the space vector and hysteresis band current control techniques in brief with examples?

ASSIGNMENT-2

Course- M.TECH (1st year/ 1st sem) **Sub code- MT-EE-113**

Sub- Power Converters

Last date of Submission-06/11/2016

Instruction

1) Write the responses to the assignment in your own handwriting.

2) Submit the responses to your HOD within the due date.

3) Write your name, program and Enrollment number clearly at the top of the page.

Q1

a) Explain operation of single phase full wave fully controlled rectifier circuit with highly inductive load and draw the following:

i) Input voltage wave form

ii) Input current wave form

iii) Output voltage and current wave form

iv) Voltage across a single SCR.

b) A basic three phase bridge inverter is supplied from a 600V source. For a star connected resistive load of 15Ω/phase. Find the RMS load current, the load power and the thyristor ratings for

i) 1200 conduction

ii) 1800 conduction

Q2

a) What is an inverter? What help of circuit and waveforms explain the operation of single phase bridge inverter?

b) Describe the basic principle of working of single phase to single phase step down cyclo converter for both continuous and discontinuous conductions for a bridge type cyclo converter with circuit and waveforms. Mark the conduction of various thyristors also?

MONAD UNIVERSITY
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Tehsil Hapur (U.P), India
E.E Department

Course: POWER SYSTEM DYNAMICS AND STABILITY

(M.TECH I SEM) MT-EE-114

Assignment No: 1

Due date of submission: 10.11.2016

Instructions

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Programme and Enrolment No. clearly at the top of this page.

Q.1

1. a) Define Power system stability and explain in detail different types of stability.

   b) Derive the expression for electrical power and torque in a synchronous machine.

Q.2

a) Obtain the IEEE ST1A excitation system model.

b) Obtain the transfer function of hydraulic turbine.

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E.E Department

Course: POWER SYSTEM DYNAMICS AND STABILITY

(M.TECH I SEM) MT-EE-114

Assignment No: 2

Due date of submission: 10.11.2016

Instructions

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Programme and Enrolment No. clearly at the top of this page.

Q.1

a) Explain the effect of AVR on Synchronizing and damping torque components

b) Explain the small signal stability of single machine infinite bus system. Develop the block diagram of SMIB using Classical Generator Model for Small Signal Stability Analysis.

Q.2

a) Explain the Special techniques for the analysis of very large systems

b) What is power system stabilizer and why it is used? How can you model a power system stabilizer?

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E.E Department

Course: POWER SYSTEM TRANSIENTS (M.TECH – I SEM) MT-EE-115

Assignment No: 1

Due date of submission: 10.11.2016

Instructions

4. Write the responses to the assignment in your own handwriting.
5. Submit the responses to your HOD within the due date.
6. Write your Name, Programme and Enrolment No. clearly at the top of this page.

1a) Explain the various types of power system transients.

b) Explain in detail about,

i) Resistance switching and

ii) Load switching with their equivalent circuits.

2 a.) Discuss transient response of systems with series and shunt lumped parameters and distributed lines.

b) Give the mathematical models for lightning discharges and explain them.

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E.E Department

Course: POWER SYSTEM TRANSIENTS (M.TECH – I SEM) MT-EE-115

Assignment No: 1

Due date of submission: 10.11.2016

Instructions

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Programme and Enrolment No. clearly at the top of this page.
4.

1a) Explain the over voltage induced by faults

b) Explain with appropriate waveform,

(i) Current suppression.

(ii) Current chopping

(iii) Capacitance switching with one and multiple restrikes.

(iv) Ferro resonance.

2 a) Discuss the mechanism of lightning strokes and over voltages on transmission lines.

b) Explain the various type of traveling wave concept in step response