ELECTRONICS DEPARTMENT, VTI ROHTAK

Name of Facult : **Anil Tomer (Theory and Practical)**
Dicipline : **Electronics and Communication**
Semester : **4 th Sem.**
Subject : **NFTL**
Lesson Plan Duration : **15 Weeks (From January 2018 to April 2018)**

Week	Lecture Day	Theory Topic (Including Assignment/Test)	Practical Day	Practical Topic
1st	1st	Two port (four terminals) network: Basic concepts of Symmetric Network	1st	1. To measure the characteristic impedance of symmetrical T and Л networks
	2nd	asymmetrical networks: Balanced and unbalanced network		
	3rd	T-network, Л network, Ladder network; Lattice network		
2nd	4th	L-network and Bridge T-network	2nd	2 To measure the image impedance of a given asymmetrical T and Л networks
	5th	Concept and significance of the terms characteristic impedance, propagation constant		
	6th	attenuation constant, phase shift constant and insertion loss of T-network and Л Network		
3rd	7th	Concept and significance of iterative impedance, image impedance, image transfer constant and insertion loss	3rd	3 For a prototype low pass filter: a) Determine the characteristic impedance experimentally b) Plot the attenuation charactics
	8th	The half section (L-section); symmetrical T and Л sections into half sections		
	9th	Units of attenuation (Decibels and Nepers): General characteristics of attenuators		
4th	10th	Analysis and design of simple attenuator of following types; Symmetrical T and Л type, L type	4th	4. To design and measure the attenuation of a symmetrical T/ Л type attenuator
	11th	Brief idea of the use of filter networks in different communication systems, concept of low pass, high pass, band pass and band stop filters.		
	12th	Prototype Filter Section		5. To plot the Impedance characteristic and attenuation charcterics of a prototype band-pass filter
5th	13th	Impedance characteristics vs frequency characteristics of a low and high pass filter and their significance	5th	
	14th	Attenuation Vs frequency; Phase shift Vs frequency, characteristics impedance vs frequency of T and Л filters and their significance		
	15th	Simple design problems of prototype low pass filter		

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6th	16th	M-Derived Filter Sections. Limitation of prototype filters, need of m-derived filters	6th	6 plot the impedance and attenuation characteristic of m- derived low pass filter
	17th	Crystal and its equivalent circuits, special properties of piezoelectric filters and their use		
	18th	Basic concept of active filters and their comparison with passive filters		
7th	19th	Transmission Lines, their types and applications	7th	7. To observe the information of standing waves on a transmission line and measurement of SWR and characteristic impedance of the line
	20th	Distributed constants,		
	21st	T and Л representation of transmission line section		
8th	22nd	Definition of characteristic impedance	8th	8. To observe the information of standing waves on a transmission line and measurement of SWR and characteristic impedance of the line
	23rd	propagátion constant, attenuation constant		
	24th	Assignment No. 2 (Unit 2&3) Test 2		
9th	25th	phase shift constant	9th	9. Draw the attenuation characteristics of a crystal filter
	26th	Concept of infinite line		
	27th	Condition for minimum distortion and minimum attenuation of signal on-the-line		
10th	28th	introduction to loading methods	10th	Experiment No. 1 & 2 Repeat
	29th	Concept of reflection and standing waves		
	30th	definition of reflection coefficient		

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11th	31st	SWR & VSWR and their relation (no derivation).	11th	Experiment No. 3 & 4 Repeat
	32nd	Transmission line equation		
	33rd	expression for voltage		
12th	34th	current and impedance at a point on the line	12th	Experiment No. 5 & 6 Repeat
	35th	Concept of transmission lines at high frequencies		
	36th	Introduction to stubs		
13th	37th	single, open and short stubs.	13th	Experiment No. 7 Repeat
	38th	Assinment No. 3 (Unit 5 & 6) Test No.3		
	39th	Unit 1 Revision		
14th	40th	Unit 2 Revision	14th	Experiment No. 8 Repeat
	41st	Unit 3 Revision		
	42nd	Unit 4 Revision		
15th	43rd	Unit 1 & 2 Revision	15th	Experiment No. 9 Repeat
	44th	Unit 3 & 4 Revision		
	45th	Full Syllabus Revision		