

Govt. Polytechnic, Manesar

Lesson Plan

Name of the Faculty : - MS. Manju

Discipline : - Electronics & Communication Engg.

Semester : - 6th

Subject : - NFTL

Lesson Plan Duration : - 15 weeks (from January 2019 to April 2019)

WORK LOAD (LECTURE/PRACTICAL) PER WEEK (IN HOURS):- LECTURE-03, PRACTIACL-06

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC (including assignment/test)	PRACTICAL DAY	TOPIC
1 st	1 st	Two port (four terminals) network Basic concept of the Symmetrical and asymmetrical networks	1 st Group-1	Introduction about Practical of NFTL
	2 nd	Balanced and unbalanced network		
	3 rd	T-network, Π network	2 nd Group-2	Introduction about Practical of NFTL
2 nd	4 th	Ladder network, Lattice network	3 rd Group-1	To measure the characteristic impedance of symmetrical T and Π networks
	5 th	L-network and Bridge T-network		
	6 th	Symmetrical Network Concept and significance of the terms characteristic impedance, propagation constant	4 th Group-2	To measure the characteristic impedance of symmetrical T and Π networks
3 rd	7 th	Phase shift constant and insertion loss of T-network	5 th Group-1	To measure the image impedance of a given asymmetrical T and Π networks
	8 th	Phase shift constant and insertion loss of Π Network		
	9 th	Asymmetrical Network Concept and significance of iterative impedance	6 th Group-2	To measure the image impedance of a given asymmetrical T and Π networks
4 th	10 th	Concept and significance of image impedance	7 th	Revision

			Group-1	
	11 th	image transfer constant and insertion loss		
	12 th	The half section (L-section) , Symmetrical T into half sections	8 th Group-2	Revision
5 th	13 th	Π sections into half sections	9 th Group-1	For a prototype low pass filter: a) Determine the characteristic impedance experimentally b) Plot the attenuation characteristic
	14 th	Attenuators Units of attenuation (Decibels and Nepers), General characteristics of attenuators		
	15 th	Analysis and design of simple attenuator of Symmetrical T type	10 th Group-2	For a prototype low pass filter: a) Determine the characteristic impedance experimentally b) Plot the attenuation characteristic
6 th	16 th	Analysis and design of simple attenuator of Π type, L type assignments	11 th Group-1	To design and measure the attenuation of a symmetrical T/ Π type attenuator
	17 th	Test		
	18 th	Brief idea of the Filters and use of filter networks in different communication systems	12 th Group-2	To design and measure the attenuation of a symmetrical T/ Π type attenuator
7 th	19 th	Concept of low pass and high pass filters	13 th Group-1	For a prototype high pass filter: a) Determine the characteristic impedance experimentally b) To plot the attenuation characteristic
	20 th	Concept of band pass and band stop filters		
	21 th	Prototype Filter section Impedance characteristics vs frequency characteristics of a low pass filter and their significance	14 th Group-1	For a prototype high pass filter: a) Determine the characteristic impedance experimentally b) To plot the attenuation characteristic
8 th	22 th	Impedance characteristics vs frequency characteristics of a high pass filter and their	15 th Group-1	a) To plot the Impedance characteristic of a prototype

		significance		band-pass filter b) To plot the attenuation characteristic of a prototype band pass filter
	23 th	Attenuation Vs frequency; Phase shift Vs frequency, characteristics impedance vs frequency of T filters and their significance		
	24 th	Phase shift Vs frequency, characteristics impedance vs frequency of Π filters and their significance	16 th Group-2	a) To plot the Impedance characteristic of a prototype band-pass filter b) To plot the attenuation characteristic of a prototype band pass filter
9 th	25 th	Simple design problems of prototype low pass filter	17 th Group-1	a) To plot the impedance characteristic of m- derived low pass filter b) To plot the attenuation characteristics of m-derived high pass filter
	26 th	M-Derived Filter Sections Limitation of prototype filters, need of m-derived filters		
	27 th	Crystal Filters Crystal and its equivalent circuits,	18 th Group-2	a) To plot the impedance characteristic of m- derived low pass filter b) To plot the attenuation characteristics of m-derived high pass filter
10 th	28 th	Special properties of piezoelectric filters and their use	19 th Group-1	To observe the information of standing waves on a transmission line and measurement of SWR and characteristic impedance of the line
	29 th	Active Filters Basic concept of active filters and their comparison with passive filters. Assignment		
	30 th	Test	20 th Group-2	To observe the information of standing waves on a transmission line and measurement of SWR and characteristic impedance of the line
11 th	31 th	Transmission Lines and their types.	21 th Group-1	Draw the attenuation characteristics of a crystal filter
	32 th	Applications of transmission lines Distributed constants		
	33 th	T and Π representation of transmission line	22 th	Draw the attenuation

		section	Group-2	characteristics of a crystal filter
12 th	34 th	Definition of characteristic impedance, propagation constant	23 th Group-1	Revision
	35 th	attenuation constant and phase shift constant		
	36 th	Concept of infinite line	24 th Group-2	Revision
13 th	37 th	Condition for minimum distortion and minimum attenuation of signal on-the-line	25 th Group-1	Revision
	38 th	introduction to loading methods		
	39 th	Concept of reflection and standing waves, definition of reflection coefficient	26 th Group-2	Revision
14 th	40 th	SWR & VSWR and their relation (no derivation)	27 th Group-1	Revision
	41 th	Transmission line equation, expression for voltage, current and impedance at a point on the line		
	42 th	Expression for Current and impedance at a point on the line.	28 th Group-2	Revision
15 th	43 th	Concept of transmission lines at high frequencies	29 th Group-1	Viva
	44 th	Introduction to stubs. (single, open and short stubs) HVDC		
	45 th	Test	30 th Group-2	Viva