

ACADEMIC LESSON PLAN OF WINTER 2023

Discipline: ELECTRICAL	Semester: 3 rd Sem (SEC-A)	Name of the Teaching Faculty: ANANYA SHUBHADARSINEE
Subject: TH-2 (CIRCUIT & NETWORK THEORY)	No. of days/per week class allotted: 4p/week No. Tutorial period 1p/week	Semester From: 1 st Aug 2023 to 30 th Nov 2023 No. of Weeks: 17 weeks
1 st	1 st	1.MAGNETIC CIRCUITS 1.1 Introduction
	2 nd	1 . 2 Magnetizing force, Intensity, MMF, flux and their relations
	3 rd	1 . 3 Permeability, reluctance and permeance.
	4 th	1 . 4 Analogy between electric and Magnetic Circuits
	5 th	Tutorial
2 nd	1 st	1 . 5 B-H Curve
	2 nd	1 . 6 Series & parallel magnetic circuit.
	3 rd	1 . 7 Hysteresis loop
	4 th	2.COUPLED CIRCUITS: 2 . 1 Self Inductance and Mutual Inductance
	5 th	Tutorial
3 rd	1 st	2 . 2 Conductively coupled circuit and mutual impedance 2 . 3 Dot convention 2 . 4 Coefficient of coupling
	2 nd	2 . 5 Series and parallel connection of coupled inductors.
	3 rd	2 . 6 Solve numerical problems (Contd.)
	4 th	2 . 6 Solve numerical problems
	5 th	Tutorial
4 th	1 st	3. CIRCUIT ELEMENTS AND ANALYSIS: 3 . 1 Active, Passive, Unilateral & bilateral, Linear & Non linear elements
	2 nd	3 . 2 Mesh Analysis, Mesh Equations by inspection
	3 rd	3 . 3 Super mesh Analysis
	4 th	3 . 4 Nodal Analysis, Nodal Equations by inspection
	5 th	Tutorial
5 th	1 st	3 . 5 Super node Analysis. 3 . 6 Source Transformation Technique
	2 nd	3 . 7 Solve numerical problems (With Independent Sources Only)
	3 rd	4. NETWORK THEOREMS: 4.1 Star to delta and delta to star transformation
	4 th	4.2 Super position Theorem
	5 th	Tutorial
6 th	1 st	4.3 Thevenin's Theorem
	2 nd	4.4 Norton's Theorem
	3 rd	4.5 Maximum power Transfer Theorem.
	4 th	4.6 Solve numerical problems (With Independent Sources Only)(Contd.)
	5 th	Tutorial
7 th	1 st	4.6 Solve numerical problems (With Independent Sources Only)(Contd.)
	2 nd	4.6 Solve numerical problems (With Independent Sources Only)
	3 rd	5. AC CIRCUIT AND RESONANCE: 5.1 A.C. through R-L, R-C & R-L-C Circuit
	4 th	5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	5 th	Tutorial
8 th	1 st	5.3 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits
	2 nd	5.4 Power factor & power triangle.
	3 rd	5.5 Deduce expression for active, reactive, apparent power.
	4 th	5.6 Derive the resonant frequency of series resonance and parallel resonance circuit
	5 th	Tutorial

9 th	1 st	5.7 Define Bandwidth, Selectivity & Q-factor in series circuit.
	2 nd	5.8 Solve numerical problems
	3 rd	6. POLYPHASE CIRCUIT 6.1 Concept of poly-phase system and phase sequence
	4 th	6.2 Relation between phase and line quantities in star & delta connection
	5 th	Tutorial
10 th	1 st	6.3 Power equation in 3-phase balanced circuit
	2 nd	6.4 Solve numerical problems
	3 rd	6.5 Measurement of 3-phase power by two wattmeter method.
	4 th	6.6 Solve numerical problems.
	5 th	Tutorial
11 th	1 st	7. TRANSIENTS 7.1 Steady state & transient state response. (Contd.)
	2 nd	7.1 Steady state & transient state response
	3 rd	7.2 Response to R-L, R-C & RLC circuit under DC condition. (Contd.)
	4 th	7.2 Response to R-L, R-C & RLC circuit under DC condition.
	5 th	Tutorial
12 th	1 st	7.3 Solve numerical problems(Contd.)
	2 nd	7.3 Solve numerical problems
	3 rd	8. TWO-PORT NETWORK 8.1 Open circuit impedance (z) parameters
	4 th	8.2 Short circuit admittance (y) parameters
	5 th	Tutorial
13 th	1 st	8.3 Transmission (ABCD) parameters
	2 nd	8.4 Hybrid (h) parameters.
	3 rd	8.5 Inter relationships of different parameters.
	4 th	8.6 T and π representation.
	5 th	Tutorial
14 th	1 st	8.7 Solve numerical problems
	2 nd	8.7 Solve numerical problems
	3 rd	9. FILTERS: 9.1 Define filter
	4 th	9.2 Classification of pass Band, stop Band and cut-off frequency 9.3 Classification of filters. 9.4 Constant – K low pass filter. 9.5 Constant – K high pass filter.
	5 th	Tutorial
15 th	1 st	9.6 Constant – K Band pass filter.
	2 nd	9.7 Constant – K Band elimination filter.
	3 rd	9.8 Solve Numerical problems
	4 th	9.8 Solve Numerical problems
	5 th	Tutorial
16 th	1 st	Revision Class
	2 nd	Revision Class
	3 rd	Revision Class
	4 th	Revision Class
	5 th	Revision Class
17 th	1 st	Revision Class
	2 nd	Revision Class
	3 rd	Revision Class
	4 th	Revision Class
	5 th	Revision Class

Ananya Shubhadarsinee

Signature of the Faculty

ACADEMIC LESSON PLAN OF WINTER 2023

Discipline: ELECTRICAL	Semester: 3 rd Sem (SEC-B)	Name of the Teaching Faculty: ANANYA SHUBHADARSINEE
Subject: TH-1 (CIRCUIT & NETWORK THEORY)	No. of days/per week class allotted: 4p/week No. Tutorial period 1p/week	Semester From: 1 st Aug 2023 to 30 th Nov 2023 No. of Weeks: 17 weeks
1 st	1 st	1.MAGNETIC CIRCUITS 1.1 Introduction
	2 nd	1 . 2 Magnetizing force, Intensity, MMF, flux and their relations
	3 rd	1 . 3 Permeability, reluctance and permeance
	4 th	1 . 4 Analogy between electric and Magnetic Circuits
	5 th	Tutorial
2 nd	1 st	1 . 5 B-H Curve
	2 nd	1 . 6 Series & parallel magnetic circuit.
	3 rd	1 . 7 Hysteresis loop
	4 th	2.COUPLED CIRCUITS: 2 . 1 Self Inductance and Mutual Inductance
	5 th	Tutorial
3 rd	1 st	2 . 2 Conductively coupled circuit and mutual impedance 2 . 3 Dot convention
	2 nd	2 . 4 Coefficient of coupling
	3 rd	2 . 5 Series and parallel connection of coupled inductors.
	4 th	2 . 6 Solve numerical problems (Contd.)
	5 th	2 . 6 Solve numerical problems Tutorial
4 th	1 st	3. CIRCUIT ELEMENTS AND ANALYSIS: 3 . 1 Active, Passive, Unilateral & bilateral, Linear & Non linear elements
	2 nd	3 . 2 Mesh Analysis, Mesh Equations by inspection
	3 rd	3 . 3 Super mesh Analysis
	4 th	3 . 4 Nodal Analysis, Nodal Equations by inspection
	5 th	Tutorial
5 th	1 st	3 . 5 Super node Analysis. 3 . 6 Source Transformation Technique
	2 nd	3 . 7 Solve numerical problems (With Independent Sources Only)
	3 rd	4. NETWORK THEOREMS: 4.1 Star to delta and delta to star transformation
	4 th	4.2 Super position Theorem
	5 th	Tutorial
6 th	1 st	4.3 Thevenin's Theorem
	2 nd	4.4 Norton's Theorem
	3 rd	4.5 Maximum power Transfer Theorem.
	4 th	4.6 Solve numerical problems (With Independent Sources Only)(Contd.)
	5 th	Tutorial
7 th	1 st	4.6 Solve numerical problems (With Independent Sources Only)(Contd.)
	2 nd	4.6 Solve numerical problems (With Independent Sources Only)
	3 rd	5. AC CIRCUIT AND RESONANCE: 5.1 A.C. through R-L, R-C & R-L-C Circuit
	4 th	5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	5 th	Tutorial
8 th	1 st	5.3 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits
	2 nd	5.4 Power factor & power triangle.
	3 rd	5.5 Deduce expression for active, reactive, apparent power.
	4 th	5.6 Derive the resonant frequency of series resonance and parallel resonance circuit
	5 th	Tutorial

9 th	1 st	5.7 Define Bandwidth, Selectivity & Q-factor in series circuit.
	2 nd	5.8 Solve numerical problems
	3 rd	6. POLYPHASE CIRCUIT 6.1 Concept of poly-phase system and phase sequence
	4 th	6.2 Relation between phase and line quantities in star & delta connection
	5 th	Tutorial
10 th	1 st	6.3 Power equation in 3-phase balanced circuit
	2 nd	6.4 Solve numerical problems
	3 rd	6.5 Measurement of 3-phase power by two wattmeter method.
	4 th	6.6 Solve numerical problems.
	5 th	Tutorial
11 th	1 st	7. TRANSIENTS 7.1 Steady state & transient state response. (Contd.)
	2 nd	7.1 Steady state & transient state response
	3 rd	7.2 Response to R-L, R-C & RLC circuit under DC condition. (Contd.)
	4 th	7.2 Response to R-L, R-C & RLC circuit under DC condition.
	5 th	Tutorial
12 th	1 st	7.3 Solve numerical problems(Contd.)
	2 nd	7.3 Solve numerical problems
	3 rd	8. TWO-PORT NETWORK 8.1 Open circuit impedance (z) parameters
	4 th	8.2 Short circuit admittance (y) parameters
	5 th	Tutorial
13 th	1 st	8.3 Transmission (ABCD) parameters
	2 nd	8.4 Hybrid (h) parameters.
	3 rd	8.5 Inter relationships of different parameters.
	4 th	8.6 T and π representation.
	5 th	Tutorial
14 th	1 st	8.7 Solve numerical problems
	2 nd	8.7 Solve numerical problems
	3 rd	9. FILTERS: 9.1 Define filter 9.2 Classification of pass Band, stop Band and cut-off frequency
	4 th	9.3 Classification of filters. 9.4 Constant – K low pass filter. 9.5 Constant – K high pass filter.
	5 th	Tutorial
15 th	1 st	9.6 Constant – K Band pass filter.
	2 nd	9.7 Constant – K Band elimination filter.
	3 rd	9.8 Solve Numerical problems
	4 th	9.8 Solve Numerical problems
	5 th	Tutorial
16 th	1 st	Revision Class
	2 nd	Revision Class
	3 rd	Revision Class
	4 th	Revision Class
	5 th	Revision Class
17 th	1 st	Revision Class
	2 nd	Revision Class
	3 rd	Revision Class
	4 th	Revision Class
	5 th	Revision Class

Ananya Shubhadassinee

Signature of the Faculty

