

**KIIT POLYTECHNIC**  
Department of Electrical Engineering

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***LESSON PLAN***

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**Session** :: Winter – 2022  
**Course Type** :: Theory  
**Semester/Branch** :: 3<sup>rd</sup> Semester, Electronics and Telecom. Engineering  
**Subject (with code)** :: Circuit Theory (Th-2)  
**Contact hours/week** :: 4 hours  
**Name of Faculty** :: Gautam Kumar Mahto

SL. No.	CLAS S ID	COURSE CONTENT	MODE OF DELIVERY	EXHIBIT/ REFERENCE
1	1	CIRCUIT ELEMENTS & ENERGY SOURCES	Lecture (Explanation)	Study Material
2	2	Circuit elements (Resistance, Inductance, Capacitance), Scope of network analysis & synthesis	Lecture (Explanation)	Study Material
3	3	Voltage Division & Current Division, Energy Sources	Lecture (Explanation)	Study Material
4	4	Electric charge, electric current, Electrical energy, Electrical potential, R-L-C parameters, Active & Passive Elements.	Lecture (Explanation)	Study Material
5	5	Energy Sources, Current and voltage sources and their transformation & mutual inductance	Lecture (Explanation)	Study Material
6	6	Star – Delta transformation	Video Presentation	<a href="https://nptel.ac.in/courses/108105159">https://nptel.ac.in/courses/108105159</a>
7	7	NETWORK THEOREMS	Lecture (Explanation)	Study Material
8	8	numerical problems	Lecture (Explanation)	Text Book
9	9	Quiz Test-1		
10	10	Nodal Analysis, Nodal Equations by inspection	Video Presentation	<a href="https://nptel.ac.in/courses/108105159">https://nptel.ac.in/courses/108105159</a>
11	11	Super node Analysis.	Lecture (Explanation)	Study Material
12	12	Source Transformation Technique	Lecture (Explanation)	Study Material
13	13	Solve numerical problems (With Independent Sources Only)	Lecture (Explanation)	Text Book

14	14	Solve numerical problems (With Independent Sources Only)	Lecture (Explanation)	Text Book
15	15	Practice Test-1		
16	16	<b>NETWORK THEOREMS</b> Star to delta and delta to star transformation	Lecture (Explanation)	Study Material
17	17	Super position Theorem	Lecture (Explanation)	Study Material
18	18	Thevenin's Theorem	Lecture (Explanation)	Study Material
19	19	Norton's Theorem	Video Presentation	<a href="https://nptel.ac.in/courses/108105159">https://nptel.ac.in/courses/108105159</a>
20	20	Maximum power Transfer Theorem.	Lecture (Explanation)	Study Material
21	21	Solve numerical problems (With Independent Sources Only)	Lecture (Explanation)	Text Book
22	22	Solve numerical problems (With Independent Sources Only)	Lecture (Explanation)	Text Book
23	23	<b>AC CIRCUIT AND RESONANCE</b> A.C. through R-L, R-C & R-L-C Circuit	Lecture (Explanation)	Study Material
24	24	Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.	Lecture (Explanation)	Study Material
25	25	Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits	Lecture (Explanation)	Study Material
26	26	Power factor & power triangle.	Lecture (Explanation)	Study Material
27	27	Deduce expression for active, reactive, apparent power.	Lecture (Explanation)	Study Material
28	28	Numerical Problems on AC series & parallel circuit	Lecture (Explanation)	
29	29	Derive the resonant frequency of series resonance and parallel resonance circuit	Lecture (Explanation)	Study Material
30	30	Define Bandwidth, Selectivity & Q-factor in series circuit.	Lecture (Explanation)	Study Material
31	31	Solve numerical problems	Lecture (Explanation)	Text Book
32	32	Quiz Test-2		
33	33	Numerical Problems on Star & Delta	Lecture (Explanation)	Text Book
34	34	Measurement of 3-phase power by two wattmeter method, Solve numerical problems.	Lecture (Explanation)	Study Material
35	35	<b>TRANSIENTS:</b> Steady state & transient state response.	Lecture (Explanation)	Study Material

36	36	Response to R-L, R-C & RLC circuit under DC condition.	Lecture (Explanation)	Study Material
37	37	Solve numerical problems on RL,RC	Lecture (Explanation)	Text Book
38	38	Review class	Recap/Summary	Text Book
39	39	<b>TWO-PORT NETWORK:</b> Open circuit impedance (z) parameters	Video Presentation	<a href="https://nptel.ac.in/courses/108105159">https://nptel.ac.in/courses/108105159</a>
40	40	Short circuit admittance (y) parameters	Lecture (Explanation)	Study Material
41	41	Transmission (ABCD) parameters	Lecture (Explanation)	Study Material
42	42	Hybrid (h) parameters.	Lecture (Explanation)	Study Material
43	43	T and $\pi$ representation.	Lecture (Explanation)	Study Material
44	44	Solve numerical problems	Lecture (Explanation)	Text Book
45	45	Practice Test-2		
46	46	<b>FILTERS:</b> Define filter, Classification of pass Band, stop Band and cut-off frequency.	Lecture (Explanation)	Study Material
47	47	Classification of filters.	Lecture (Explanation)	Study Material
48	48	Solve Numerical problems	Lecture (Explanation)	Text Book

Signature of Concern Teacher

#### REFERENCE BOOKS:

1. Network Analysis and Synthesis- B.R.Gupta
2. Circuit and Networks- Sakhija & Nagsarkar
3. CIRCUIT & NETWORKS- A. Sudhakar & Shyam Mohan
4. Introduction to Circuit and Network- Gargi Basu