Information Communication Technology (ICT) Tools

Innovative teaching methods encircle a wide range of approaches that aim to enhance student engagement, favor deeper learning, and address diverse learning styles. Here are several innovative teaching methods that are used at SMVITM:

Flipped Classroom is an instructional strategy that reverses the traditional learning environment by delivering instructional content, often online, outside of the classroom, while using class time for activities, discussions, and collaborative work.

Mind Mapping involves creating a diagram that branches out from a central topic, with related subtopics radiating outward like branches on a tree. Mind maps are often used to brainstorm ideas, plan projects, summarize information, and facilitate creative thinking.

Think-Pair-Share is a cooperative learning strategy that encourages active participation, collaboration, and critical thinking among students.

Minute Paper is a simple and effective formative assessment technique used in classrooms to gauge student understanding, reflection, and feedback in just a few minutes.

Role Play is a pedagogical technique where students take on specific roles or characters to act out scenarios, simulations, or real-life situations. It's a powerful instructional strategy that promotes active learning, critical thinking, empathy, communication skills, and problem-solving abilities.

Quiz is a innovative teaching learning tool and which can be conducted using several online platforms like teachmint, mentimeter. Where attractive animation and effects increases students' involvement.

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STUDENTS LIST FOR SEMINAR

SEMINAR TOPICS		
USN	Name	Topic Name
4MW20EC062	Sumanth Mutalik	Discuss BPSK by considering any communication related application as case study
4MW20EC044	Rahamathunnisa	
4MW20EC048	Rashi	
4MW20EC049	Rimsha	
4mw20ec055	Shravya Sm	Discuss QPSK by considering any communication related application as case study
4mw20ec065	Suraksha Acharya	
4mw20ec057	Shreya Tantry	
4mw20ec059	Soumya Shetty	
4MW20EC041	Prasha S	Discuss M-ary-PSK by considering any communication related application as case study
4MW20EC047	Ramya Deshapande	
4MW20EC054	Shivaprasad	
4MW20EC058	Shrinidhi Devadiga	
4MW20EC046	Raksha Nayak	Discuss FSK by considering any communication related application as case study
4MW20EC051	Sanjana Rao U S	
4MW20EC056	Shreeta jayakar shetty	
4MW20EC069	Vinaya S	
4MW20EC040	Prasanna	Discuss QAM by any communication related application as case study
4MW20EC042	Pratham	
4MW20EC043	Prathviraj	
4MW20EC045	Rahul	
4MW20EC036	NISHA JOSNA DSOUZA	Discuss direct sequence spread spectrum technique by communication related application as case study
4MW20EC037	PAVAN SHETTIGAR	
4MW21EC400	SAMPREETH	
4MW20EC052	SANKALP R	
4MW20EC067	Tanmay kalkur	Discuss frequency hopped spread spectrum technique by any communication related application as case study
4MW20EC066	Swasthik	
4MW20EC060	Sourabh	
4MW20EC062	Sumanth	
4MW20EC068	VIKAS VK	Discuss DPSK by any communication related application as case study
4MW20EC063	SUMANTH ACHARYA	
4MW20EC050	SAGAR ACHARYA	
4MW20EC070	VIGHNESH NAIK	

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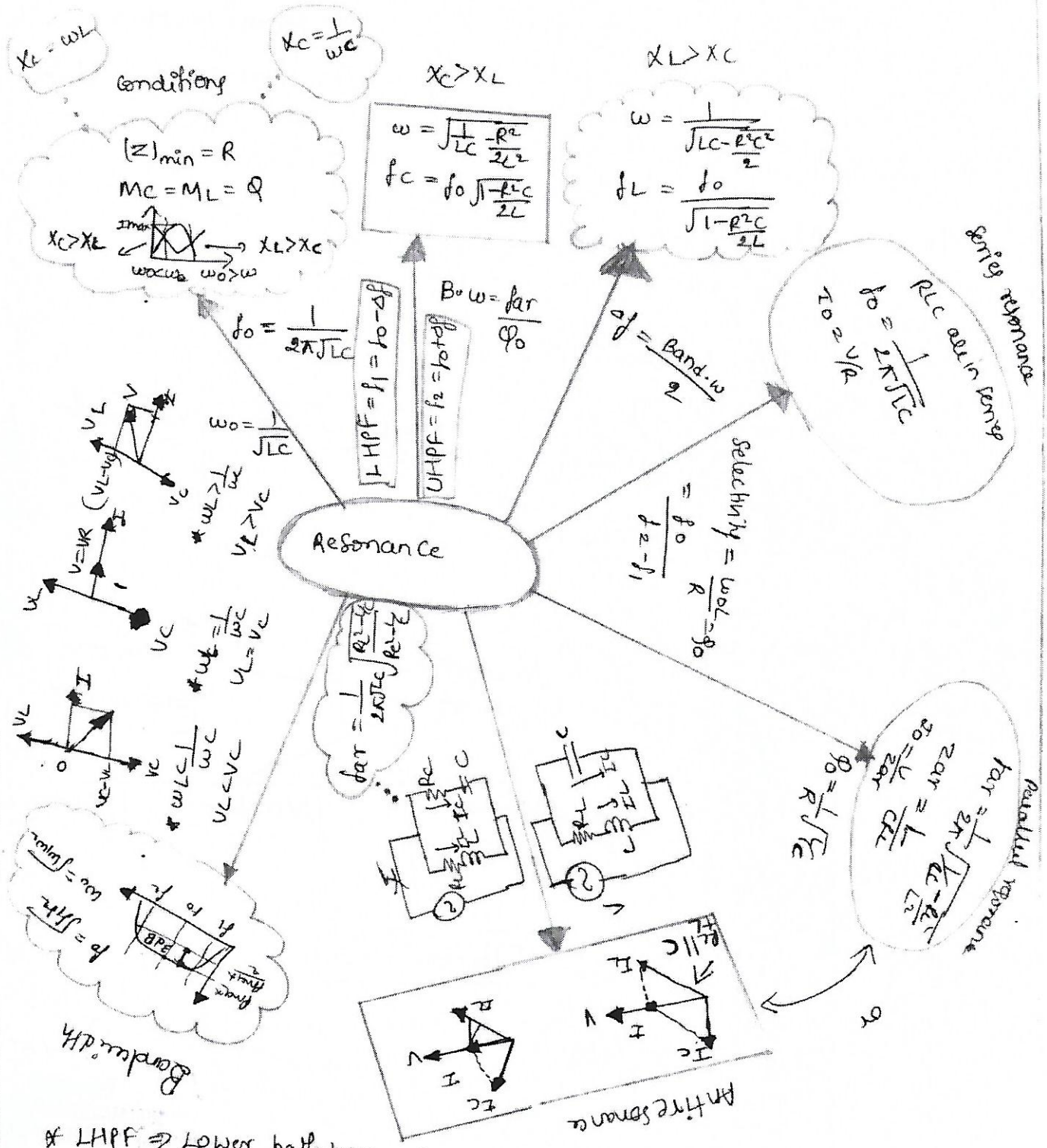
RESONANCE :-

ANUSHA (4MW20EC012)
MANASA (4MW20EC029)
MEDINI (4MW20EC031)
SOWJANYA (4MW20EC033)



* LHPF ⇒ Lower half frequency
* UHPF ⇒ Upper half frequency

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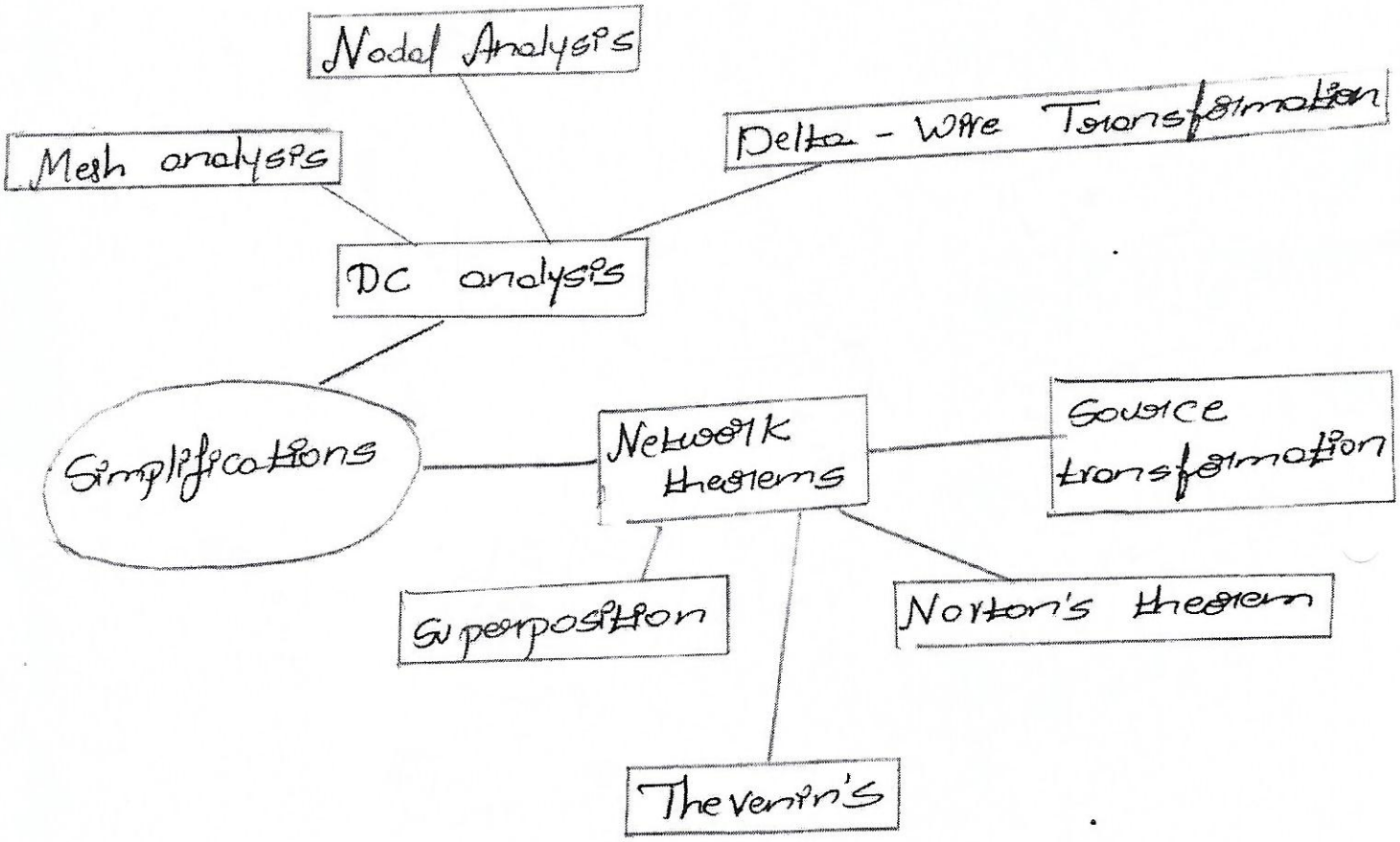
Network Theory

Team members

1] Nikhitha Shetty
2] Manasa.
3] Hoorshatha
4] Ankitha Shet

Mind Map



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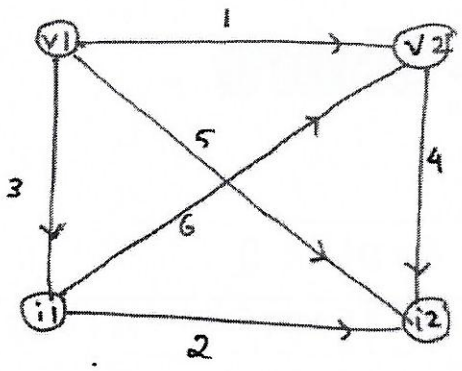
Mind map for

Network Parameters

team
Nagaraj
Auston
Adarsh
Abhishek



where

1 → Z - Parameter
2 → Y - Parameter
3 → ABCD Parameter
5 → h - Parameter
4 → A'B'C'D' Parameter
6 → g - Parameter

Z - Parameter

$V1 = Z11 * I1 + Z12 * I2$

$V2 = Z21 * I1 + Z22 * I2$

Y - Parameter

$I1 = Y11 * V1 + Y12 * V2$

$I2 = Y21 * V1 + Y22 * V2$

ABCD Parameter

$V1 = A * V2 + B * I2$

$I1 = C * V2 + D * I2$

A'B'C'D' Parameter

$V2 = A' * V1 - B' I1$

$I2 = C' * V1 - B' * I2$

h - Parameter

$V1 = h11 * I1 + h12 * V2$

$I2 = h21 * I1 + h22 * V2$

g - Parameter

$I1 = g11 * V1 + g12 * I2$

$V2 = g21 * V1 + g22 * I2$

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Think – Pair - Share

Name: Nagraj		AY- 2021-22
Date: 11 – 3 - 22.	Course: NT	Course Code: 18EC32
Question or Topic:		

What I Think	What my partner thinks	What we share
I used MPT theorem I got R value as 1.36 & I didnot maximum power vala	Adarsh : 4MW20EC005 Method was ~~wrong~~ standard got wrong Answer R = 2Ω AUSTON : 4MW20EC018 used MPT Theorem Method I got R value as 1.628Ω ABHISHEK : 4MW20EC003 used MPT Theorem I got Req = 1.62Ω Pmax = 36.3W	I & AUSTON ABHISHEK used MPT but we ~~don't~~ got answer Adarsh tried star Delta he also got no ans

Student's Signature:- Nagaraj Abhishek Adarsh Auston

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Think – Pair - Share

Anusha, Preethika, Adithya Prakash

Name: Ashwini (TL)		AY- 2021-22
Date: 11/03/2022	Course: Network Theory	Course Code: 18EC32
Question or Topic:		

What I Think	What my partner thinks	What we share
Ashwini To find the R value I have used series & parallel combination. Ist I have shorted voltage sources & open circuited the R value $Z_{eq} = 3.5135\,\Omega$ $V_{TH} = 50V$ $P_{max} = 177.89\,W$.	Anusha, I think that, and made voltage source s.c & R as o.c. then 20||2 is series with 5 and i got $P_{max} = 37.1581\,W$. $Z_{eq} = 16.52$ Preethika, 1st I have taken voltage source shorted and 20Ω & 2Ω are parallel & 10Ω & 5Ω are in series, $V_{TH} = 50V$. $Z_{eq} = 16.818\,\Omega$, $P_{max} = 37.162\,W$ Adithya. Prakash Voltage source shorted unknown resistance is o.c 20 & 2Ω are parallel then equivalent is series with 10Ω and it is parallel with 5Ω. $Z_{eq} = 8.5135\,\Omega$, $I = 1.027$ $V_{TH} = 44.865$, $P_{max} = 184.2199\,W$	First short circuit the voltage source values, and using series & parallel combination, $Z_{eq} = 3.5135\,\Omega$ $V_{TH} = 50.V$ $P_{max} = 177.89\,W$

Student's Signature:- Ko ath. Anusha, Ashwini.,

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Name: Ashwini
USN. No: 4MW20EC016
Coarse: Network Theory

Summary of Laplace Transform :-

The Laplace transform allows equations in the "time domain" to be transformed into an equivalent equation in the Complex S Domain.

$\mathcal{L}\{f(t)\} = F(s)$. , where the letter 's' has no special significance, and is used with the Laplace Transform as a matter of common convention.

Laplace transform is the integral transform of the given derivative variable function with real variable t to convert into a complex function with variable s.

$$\mathcal{L}\{f(t)\} = \int_0^\infty f(t)\, e^{-st}\, dt.$$

The properties of Laplace transform are :-

* Linearity : The transform of a finite sum of time functions is the sum of Laplace transforms of the individual functions

$$\mathcal{L}\{f_1(t) + f_2(t) + f_3(t) + \cdots + f_n(t)\} = F_1(s) + F_2(s) + F_3(s) + \cdots + F_n(s)$$

* Scaling theorem : (Multiplication by K).
If K is a constant, then

$$\mathcal{L}\{K f(t)\} = K * \mathcal{L}\{f(t)\} = K * F(s).$$

* Real differentiation :

$$\mathcal{L}\left\{\frac{df(t)}{dt}\right\} = sF(s) - f(0^-)$$ where $f(0^-)$ is the value of $f(t)$ when $t = 0^-$.

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* Real Integration property:

$$\mathcal{L}\left\{\int_0^t f(t)\,dt\right\} = \frac{F(s)}{s}$$

* Differentiation by 's' (Multiplication by 't') property.

$$\mathcal{L}\{-t f(t)\} = \frac{-d F(s)}{ds}$$

* Complex Translation property.

$\mathcal{L}\{e^{at} f(t)\} = F(s-a)$ where 'a' is a complex number &

$\mathcal{L}\{e^{-at} f(t)\} = F(s+a)$.

* Real Translation (Shifting) theorem:

$$\mathcal{L}\{f(t-T)\} = e^{-Ts} F(s).$$

* Initial Value theorem:

$$f(0^+) = \lim_{t\to 0^+} f(t) = \lim_{s\to\infty} sF(s)$$

* Final Value theorem:

$$\lim_{t\to\infty} f(t) = \lim_{s\to 0} sF(s).$$

* Convolution theorem:

$$f_1(t) * f_2(t) = \int_0^t f_1(\tau) f_2(t-\tau)\,d\tau = \int_0^t f_2(\tau) f_1(t-\tau)\,d\tau$$

↑ convolution where τ is the dummy variable.

$$\therefore \mathcal{L}\{f_1(t) * f_2(t)\} = F_1(s) \cdot F_2(s).$$

There are four basic Standard Time functions :-

* Step $\Rightarrow$ $\mathcal{L}\{u(t)\} = 1/s$
* Ramp $\Rightarrow$ $\mathcal{L}\{r(t)\} = 1/s^2$
* Parabolic ~~$\Rightarrow \mathcal{L}\{\delta(t)\} = 1$~~
* Impulse $\Rightarrow$ $\mathcal{L}\{\delta(t)\} = 1$

* Step function is a function which has a value of A for $t \geq 0$ and 0 for $t<0$.

* Ramp function is one which has slope 'A' where 'A' is called Magnitude or amplitude of ramp function.

* Impulse function is one which exists only at $t=0$ and is zero elsewhere. ⇒ It is also called Delta function $\{\delta(t)\}$.

Then,

$r(t)$ —Differentiate→ $u(t)$ —Differentiate→ $\delta(t)$

ramp function — unit step function — Impulse function

$\delta(t)$ —Integrate→ $u(t)$ —Integrate→ $r(t)$.

Laplace transform of periodic function,

$$F(s) = \frac{1}{1-e^{-ST}} \cdot F_1(s).$$

Inverse laplace transform:-

If $\mathcal{L}\{f(t)\} = F(s)$, then,

$$\mathcal{L}^{-1}\{F(s)\} = f(t).$$

Two cases:

i) If Degree of $N(s)$ < degree of $D(s)$, then apply partial fraction method directly.

$$F(s) = \frac{N(s)}{D(s)}$$

ii) If degree of $N(s) \geq$ degree of $D(s)$, then, divide $N(s)$ by $D(s)$, then apply partial fraction method to second term.

$$F(s) = Q + F_1(s) = Q + \frac{N'(s)}{D'(s)}.$$

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Application of Laplace transform:

Laplace transform can be used to transform the time domain circuits into s domain circuits to simplify the solution of integral differential equations to the manipulation of a set of algebraic equations.

* * *

Summary

Adithya Prakash
4MW20EC008

Laplace transform is the integral transform of the given derivative function with real variable to convert into a complex function with variable S. It is useful in reducing the solution of a ordinary linear differential equation with constant coefficients to the solution of a polynomial equation. In laplace transform, we calculate or analyse the circuit based open their frequency and time properties.

We have many number of properties in laplace transform they are linear property, shifting property and so on. We are having inverse laplace transform also the laplace transform of $\sin at$ is $\frac{a}{s^2+a^2}$. The laplace transform of $\cos at$ is $\frac{s}{s^2+a^2}$.

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