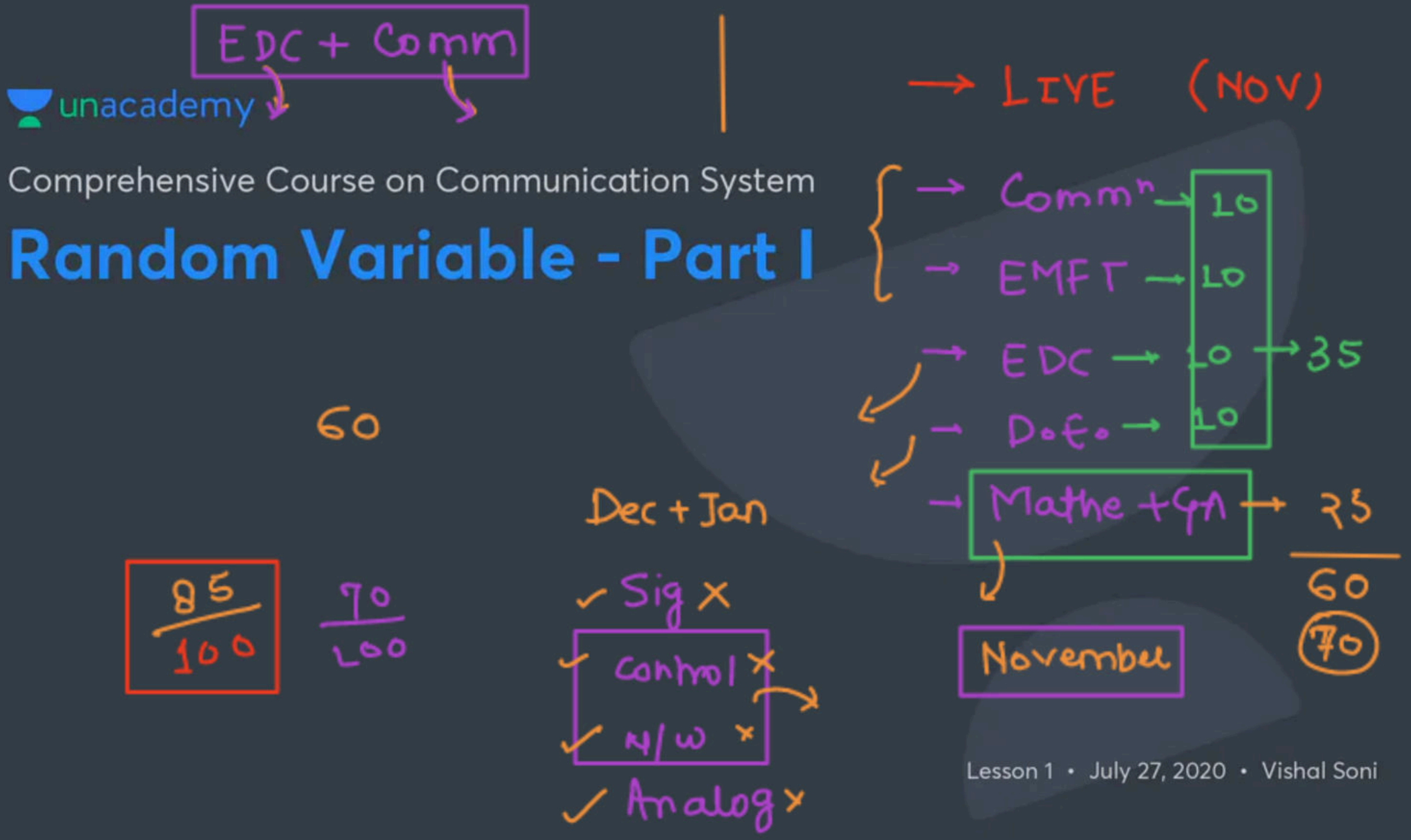
“TABLE-TOP”

BOYA


EDC + Comm
unacademy
→ LIVE (NOV)
Comprehensive Course on Communication System
Random Variable - Part I
→ Commⁿ → 10
→ EMFT → 10
→ EDC → 10 → 35
→ D.E. → 10
60
Dec + Jan
→ Mathe + GA → 25
60
70
85/100
70/100
✓ Sig ✗
✓ Control ✗
✓ N/W ✗
✓ Analog ✗
November
Lesson 1 • July 27, 2020 • Vishal Soni

ESE+GATE

SYLLABUS

1. Random Variable : 22 Hours
2. Random Process : 18 Hours
3. Noise As Random Process : 9 Hours

→ 49

- ✓ Amplitude Modulation : 18 Hours
- ✓ Angle Modulation : 14 Hours
- ✓ Transmission & Reception Of Analog Signal : 9 Hours
- ✓ Sampling Theorem & Pulse Modulation Technique : 18 Hours
- ✓ Digital Receiver : 18 Hours
- ✓ Bandpass Digital Signalling : 18 Hours
- ✓ Information Theory : 15 Hours

SUBJECTS	GATE 2012	GATE 2013	GATE 2014	GATE 2015	GATE 2016	GATE 2017	GATE 2018	GATE 2019	GATE 2020
Engineering Mathematics*	14%	10%	11%	13%	**12%**	14%	14%	13%	13%
Network Theory*	11%	15%	11%	9%	**8.3%**	5.5%	7%	5%	5%
Electronics Devices & Circuits	11%	3%	9%	10%	**9.5%**	11%	12%	13%	10%
Analog Electronics*	9%	15%	9%	8%	**9%**	9%	8%	11%	13%
Digital Circuits	4%	6%	9%	9%	**8.3%**	10%	11%	6%	9%
Signals & Systems*	8%	11%	11%	9%	**9%**	9.5%	7%	8%	8%
Control Systems*	7%	11%	8%	10%	**8%**	9%	7%	10%	10%
Communication	9%	9%	10%	8%	**9%**	9%	11%	10%	9%
Electromagnetic Theory	12%	5%	7%	9%	**11.3%**	8%	8%	9%	8%
General Aptitude*	15%	15%	15%	15%	**15%**	15%	15%	15%	15%

2hours ✓

Antenna ✓

RESOURCES:

1) CLASS NOTES → along with download → printout ✓

2) Questions: My side

3) Books: → Analog Comm^n → Proakis, B P LATHI

+

→ RoVo + RoP → Simon Haykin, Oliver, populis.

+

→ Digital comm^n → B P Lathi, Simon Haykin, Proakis.

P. Ramakrishna Rao

Analog + Digital comm^n

4) TEST SERIES → 15 August: 15 Question →

↳ 1 Test series

5) DOUBT CLEARING:→ "#Facebook Group"

weekly: 2hour → ✓

4th class doubt → 30minutes

Quizz discussion + DPPdiscuss

Saturday: 10pm → 11 pm

c) Revision: → daily of all previous classes.

Special: 12pm-2pm

PREREQ:

1) Basics of signal System upto F.T.

2) Functions and Limits.

3) Diff and Integrations of signal

4) BASICS of probability → "Yourend."

RANDOM VARIABLE:

$x(t)$

1)

Function / Signal

- Amplitude (vertical axis)
  - Continuous
    - Analog sig
  - Discrete
    - Digital sig
- Time (Horizontal axis)
  - Continuous
    - CoTos.
  - Discrete
    - DoTos.

2) Limit of a function at a point.

$$\lim_{t \to a} f(t) = l$$

$$\lim_{t \to a^-} f(t) = \lim_{t \to a^+} f(t) = l$$

$t \to a^-$: L.H.L.

$t \to a^+$: R.H.L.

2) Continuity of a function: {Continuity of Amplitude of a fn}.

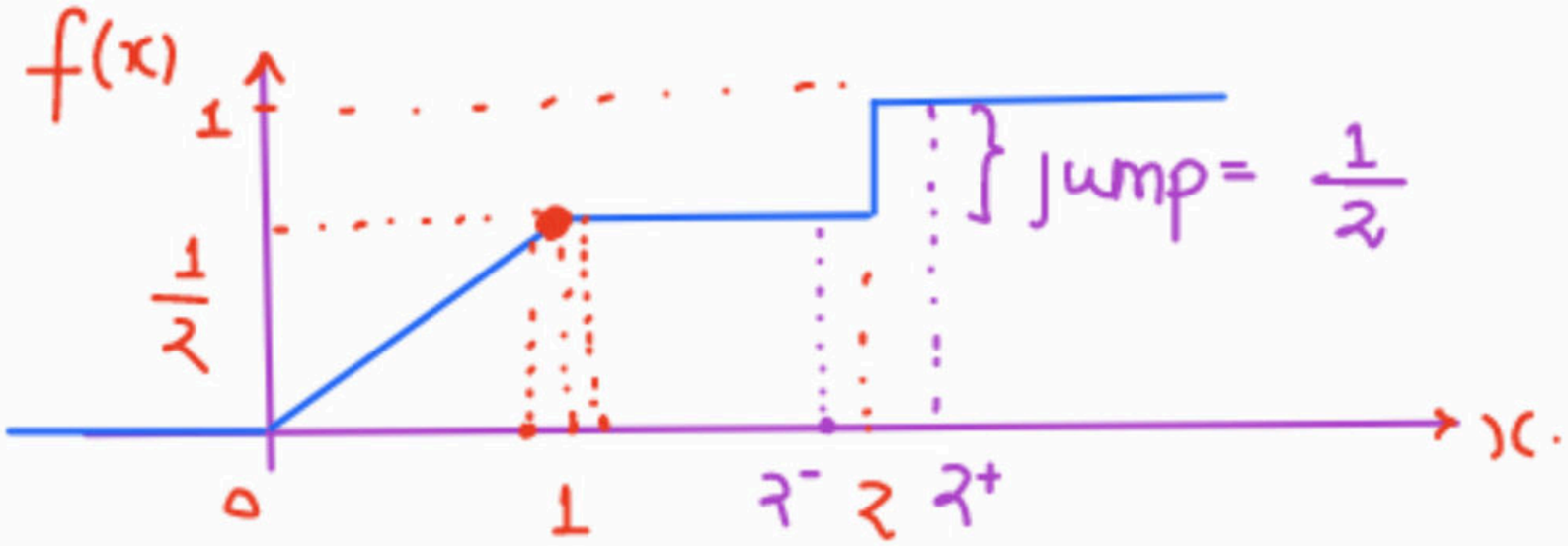
Continuity of a function at a point.

$$\lim_{t \to a^-} f(t) = \lim_{t \to a^+} f(t) = f(a)$$

LHL = RHL = functional value

continuity of complete function.

Function should be continuous at every point.



1) Continuity of amplitude at $x=1 \Rightarrow$

$$\lim_{x\to 1^-} f(x) = \lim_{x\to 1^+} f(x) = f(1) = 1/2$$

$$f(1^+) - f(1^-) = 0$$

2) Continuity of amplitude at $x = 2$

$$\lim_{x \to 2^-} f(x) \neq \lim_{x \to 2^+} f(x) \longrightarrow \text{jump at } x = 2$$

$$f(2^+) - f(2^-) = \frac{1}{2} = \text{size of jump}$$

3) $f(x) \longrightarrow$ discontinuous as a whole.