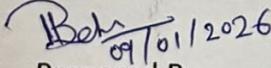
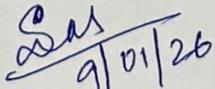


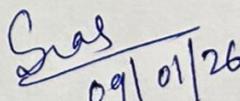
**ACADEMIC SESSION : 2025-26**

<b>Discipline :</b> Mechanical Engineering	<b>Semester :</b> 2 <sup>nd</sup>	<b>Name of the Teaching Faculty :</b> Sri Tilu Behera (Lect. in Electronics)
<b>Subject :</b> Fundamentals of Electrical & Electronics Engineering	No. of days / week class allotted :	Semester From date: 09/01/2026 to 08/05/2026 Nos. of Weeks per semester : 15
<b>Week</b>	<b>Class Day</b>	<b>Theory/ Practical Topics</b>
1 <sup>ST</sup>	1 <sup>st</sup>	Passive Active Components: Resistances, Capacitors, Inductors
	2 <sup>nd</sup>	Diodes
	3 <sup>rd</sup>	Transistors
	4 <sup>th</sup>	FET
2 <sup>ND</sup>	1 <sup>st</sup>	MOS and CMOS and their Applications
	2 <sup>nd</sup>	DC/AC, voltage/current
	3 <sup>rd</sup>	periodic/non-periodic signals
	4 <sup>th</sup>	average, rms, peak values, different types of signal waveforms
3 <sup>RD</sup>	1 <sup>st</sup>	Ideal/non-ideal voltage/current sources
	2 <sup>nd</sup>	independent/dependent voltage current sources
	3 <sup>rd</sup>	Questions Discussion
	4 <sup>th</sup>	Questions Discussion
4 <sup>TH</sup>	1 <sup>st</sup>	Operational Amplifiers-Ideal Op-Amp, Practical op amp
	2 <sup>nd</sup>	Open loop and closed loop configurations
	3 <sup>rd</sup>	Application of Op-Amp as amplifier, adder, differentiator and integrator
	4 <sup>th</sup>	Application of Op-Amp as amplifier, adder, differentiator and integrator
5 <sup>TH</sup>	1 <sup>st</sup>	Questions Discussion
	2 <sup>nd</sup>	Introduction to Boolean Algebra
	3 <sup>rd</sup>	Electronic Implementation of Boolean Operations
	4 <sup>th</sup>	Gates-Functional Block Approach (Simple problems of Number system)
6 <sup>TH</sup>	1 <sup>st</sup>	Storage elements-Flip Flops-A Functional block approach
	2 <sup>nd</sup>	Counters: Ripple, Up/down and decade
	3 <sup>rd</sup>	Counters: Ripple, Up/down and decade
	4 <sup>th</sup>	Introduction to digital IC Gates (of TTL Type).
7 <sup>TH</sup>	1 <sup>st</sup>	Questions Discussion
	2 <sup>nd</sup>	Questions Discussion
	3 <sup>rd</sup>	EMF, Current, Potential Difference, Power and Energy
	4 <sup>th</sup>	M.M.F, magnetic force, permeability, hysteresis loop, reluctance, leakage factor and BH curve
8 <sup>TH</sup>	1 <sup>st</sup>	M.M.F, magnetic force, permeability, hysteresis loop, reluctance, leakage factor and BH curve
	2 <sup>nd</sup>	Electromagnetic induction, Faraday's laws of electromagnetic induction, Lenz's law
	3 <sup>rd</sup>	Electromagnetic induction, Faraday's laws of electromagnetic induction, Lenz's law
	4 <sup>th</sup>	Dynamically induced emf

9 <sup>TH</sup>	1 <sup>st</sup>	Statically induced emf
	2 <sup>nd</sup>	Equations of self and mutual inductance
	3 <sup>rd</sup>	Analogy between electric and magnetic circuits.
	4 <sup>th</sup>	Questions Discussion
10 <sup>TH</sup>	1 <sup>st</sup>	Questions Discussion
	2 <sup>nd</sup>	Cycle, Frequency, Periodic time, Amplitude, Angular velocity, RMS value, Average value, Form Factor Peak Factor, impedance, phase angle, and power factor
	3 <sup>rd</sup>	Cycle, Frequency, Periodic time, Amplitude, Angular velocity, RMS value, Average value, Form Factor Peak Factor, impedance, phase angle, and power factor
11 <sup>TH</sup>	4 <sup>th</sup>	Cycle, Frequency, Periodic time, Amplitude, Angular velocity, RMS value, Average value, Form Factor Peak Factor, impedance, phase angle, and power factor
	1 <sup>st</sup>	Mathematical and phasor representation of alternating emf and current
	2 <sup>nd</sup>	Voltage and Current relationship in Star and Delta connections
	3 <sup>rd</sup>	Voltage and Current relationship in Star and Delta connections
12 <sup>th</sup>	4 <sup>th</sup>	A.C in resistors, inductors and capacitors
	1 <sup>st</sup>	A.C in R-L series, R-C series
	2 <sup>nd</sup>	A.C in R-L series, R-C series
	3 <sup>rd</sup>	R-L-C series and parallel circuits
13 <sup>th</sup>	4 <sup>th</sup>	R-L-C series and parallel circuits
	1 <sup>st</sup>	Power in A. C. Circuits, power triangle
	2 <sup>nd</sup>	Questions Discussion
	3 <sup>rd</sup>	Questions Discussion
14 <sup>th</sup>	4 <sup>th</sup>	General construction and principle of different type of transformers
	1 <sup>st</sup>	General construction and principle of different type of transformers
	2 <sup>nd</sup>	Emf equation and transformation ratio of transformers
	3 <sup>rd</sup>	Auto transformers
15 <sup>th</sup>	4 <sup>th</sup>	Construction and Working principle of motors
	1 <sup>st</sup>	Construction and Working principle of motors
	2 <sup>nd</sup>	Basic equations and characteristic of motors
	3 <sup>rd</sup>	Questions Discussion
	4 <sup>th</sup>	Questions Discussion

  
 Prepared By  
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**ACADEMIC SESSION : 2025-26**

<b>Discipline :</b> Civil Engineering	<b>Semester :</b> 2 <sup>nd</sup>	<b>Name of the Teaching Faculty :</b> Sri Tilu Behera (Lect. in Electronics)
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