



**ACADEMIC LESSON PLAN FOR SUMMER SEMESTER 2024.**

Dept. Of Electronics & Telecommunication, Govt. Polytechnic, Balasore.

Name of the Faculty: DEBASISH MOHAPATRA. (GF, ETC)

Analog Electronics Lab./PR-2

Course code: Analog Electronic LAB. Pr2

Total Period s: 45 P/ SEM

Examination: 03 Hours

SEM ester : 4<sup>th</sup> ELECT.ENGG

Term Work

End Semester Exam

TOTAL MARKS

Class Start

: 25 Marks

: 50marks

: 75 Marks

: 16<sup>TH</sup> JAN. 2024

WEEK	PERIOD	TOPIC
1 <sup>st</sup>	1 <sup>st</sup>	1. Determine the input and output Characteristics of CE & CB transistor configuration.
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
2 <sup>nd</sup>	1 <sup>st</sup>	2. Determine Drain & Transfer Characteristics of JFET.
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
3 <sup>rd</sup>	1 <sup>st</sup>	3. Construct Bridge Rectifier using different filter circuit and to determine Ripple factor & analyze wave form with filter & without filter.
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
4 <sup>th</sup>	1 <sup>st</sup>	4. Construct Bridge Rectifier using different filter and to determine Ripple factor.
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
5 <sup>th</sup>	1 <sup>st</sup>	5. Construct & test the regulator using Zener diode.
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
6 <sup>th</sup>	1 <sup>st</sup>	6. Construct different types of biasing circuit and analyze the wave form (i) Fixed bias (ii) Emitter bias (iii) Voltage divider bias
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
7 <sup>th</sup>	1 <sup>st</sup>	7. Study the single stage CE amplifier & find Gain.
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
8 <sup>th</sup>	1 <sup>st</sup>	8. Study multi stage R-C coupled amplifier & to determine frequency- response & gain.
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
9 <sup>th</sup>	1 <sup>st</sup>	9. Construct & Find the gain (i) Class A. Amplifier (ii) Class B. Amplifier (iii) Class C Tuned Amplifier
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
10 <sup>th</sup>	1 <sup>st</sup>	10. Construct & test push pull amplifier & observe the wave form
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
11 <sup>th</sup>	1 <sup>st</sup>	11. Construct & calculate the frequency of Hartly Oscillator (ii) Collpit's Oscillator (iii) Wein Bridge Oscillator
	2 <sup>nd</sup>	

		transistor amplifier, 6.2DC load line and DC equivalent circuit
		6.3AC load line and AC equivalent circuit ,6.4Calculation of gain
9 <sup>th</sup>	4 <sup>th</sup>	
	1 <sup>st</sup>	Phase reversal
	2 <sup>nd</sup>	H-parameters of transistors
	3 <sup>rd</sup>	Simplified H-parameters of transistors
10 <sup>th</sup>	4 <sup>th</sup>	Generalised approximate model
		Analysis of CB, CE, CC amplifier using generalised approximate model
	1 <sup>st</sup>	Multi stage transistor amplifier
	2 <sup>nd</sup>	R.C. coupled amplifier
11 <sup>th</sup>	3 <sup>rd</sup>	Transformer coupled amplifier, Feed back in amplifier
	4 <sup>th</sup>	General theory of feed back .Negative feedback circuit
		Advantage of negative feed back
	1 <sup>st</sup>	Power amplifier and its classification
12 <sup>th</sup>	2 <sup>nd</sup>	Difference between voltage amplifier and power amplifier
	3 <sup>rd</sup>	Transformer coupled class A power amplifier
	4 <sup>th</sup>	Class A push – pull amplifier ,Class B push – pull amplifier.
	1 <sup>st</sup>	Oscillators ,Types of oscillators, Essentials of transistor oscillator
13 <sup>th</sup>		Principle of operation of tuned collector, Hartley, colpitt, phase shift, wein- bridge oscillator (no mathematical derivations)
	2 <sup>nd</sup>	Principle of operation of tuned collector, Hartley, colpitt, phase shift, wein-bridge oscillator (no mathematical derivations)
	3 <sup>rd</sup>	7: FIELD EFFECT TRANSISTOR: Classification of FETA
	4 <sup>th</sup>	Advantages of FET over BJT
14 <sup>th</sup>	1 <sup>st</sup>	Principle of operation of BJT
	2 <sup>nd</sup>	FET parameters (no mathematical derivation)
	3 <sup>rd</sup>	DC drain resistance; AC drain resistance; Trans-conductance
	4 <sup>th</sup>	FET parameters (no mathematical derivation)
15 <sup>th</sup>		DC drain resistance; AC drain resistance; Trans-conductance
		Biasing of FET
		<b>OPERATIONAL AMPLIFIERS:</b>
	1 <sup>st</sup>	General circuit simple of OP-AMP and IC – CA – 741 OP AMP, Operational amplifier stages
16 <sup>th</sup>	2 <sup>nd</sup>	Equivalent circuit of operational amplifier, Open loop OP-AMP configuration
	3 <sup>rd</sup>	Equivalent circuit of operational amplifier, Open loop OP-AMP configuration
	4 <sup>th</sup>	OPAMP with fed back Inverting OP-AMP
	1 <sup>st</sup>	Non inverting OP-AMP Voltage follower & buffer
17 <sup>th</sup>	2 <sup>nd</sup>	Differential amplifier Adder or summing amplifier
	3 <sup>rd</sup>	Sub tractor Integrator
	4 <sup>th</sup>	Differentiator
		Comparator

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16.1.24

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