DRONACHARYA COLLEGE OF ENGINEERING

KHENTAWAS, FARRUKHNAGAR, GURGAON, HR

Department: ECE

Academic Session: 2020-2021(MAY- AUG, 2021)

Lecture Plan with Asssignment questions

Subject with code: Analog Circuits (PCC-ECE206G)

Name of Faculty with designation : Mrs. Neha Verma Assistant Professor

S.No.	Month	Date & Day	Sem-Class	Unit	Topic/Chapter covered	Write Lecture Wise Questions
1	May		IV ECE	I	Introduction to High Frequency Analysis Of Bjt And Multistage Amplifier	Q1) Which mode in BJT support high freq. operation, Draw. Q2) Why do we need multistage amplifier
2	May		IV ECE	I	Hybrid Pi Model, CE Short Circuit Gain, Frequency Response, Alpha Cut off Frequency, Gain Bandwidth Product	Q1) Define Gain and frequency response of system Q2) Numerical on BW product
3	May		IV ECE	I	Emitter Follower circuit at High Frequencies. RC Coupled Transistor Amplifier,	Q1) in which mode of BJT emitter follwer is set? Q2) advantages of RC coupled amplifier?
4	May		IV ECE	I	Lower & Upper Cut off Frequency, Frequency Response curve & Bandwidth	Q1) Define cut-off frequency Q2) Why do we need to study a response curve of device?
5	May		IV ECE	I	Transformer Coupled Amplifier, Direct Coupled Amplifier, Cascode Amplifier	Q1) Modes of coupling in Amplifiers? Q2) What is the effect of cascading on amplification?
6	May		IV ECE	I	'air Amplifier, Distortion In Amplifiers, Feedback concept and use in a	Q1) explain 4 parameters of distortion Q2) Explain the type of feedbacks
7	May		IV ECE	I	Transfer Gain with Feedback, General Characteristics of Negative Feedback	Q1) difference between positive and negative feedback Q2) Numerical
8	May		IV ECE	I	Advantages & disadvantages of feedback, Input And Output Resistance, Voltage Series Feedback topology,	Q1) List advantages of feedback Q2) Give examples of topologies
9	May		IV ECE	I	Voltage Shunt, Current Series & Current Shunt topology, Equivalent circuit for each topology, Effects of Negative Feedback.	Q1) Questions related to shunt and series connections Q2) Difference between voltage shunt and series shunt
10	May		IV ECE	I	Revision of unit 1	Handling Queries and TEST

11	May		IV ECE	II	Introduction, Barkhausen Criterio, Oscillator with RC Feedback circuit (RC Phase Shift, Wien Bridge),	Q1) Questions related to oscillators and different shifts Q2) Numerical on RC phase
12	May		IV ECE	II	Tuned Collector, Tuned Base Oscillator, LC Feedback circuits (Hartley, Colpitts)	Q1) difference b/w RC and LC feedback Q2) Draw a tuned based oscillator in Hartley setup
13	May		IV ECE	II	Condition for Sustained Oscillations & Frequency of Oscillations, Crystal Oscillator.	Q1) Numricals on Frequency Q2) Numerical on resonance and oscillation
14	May		IV ECE	II	Definition, Application & Types of Power Amplifiers, Amplifier Classes of Efficiency (Class - A, B, AB, C),	Q1) Point of difference b/w Clas A, b, AB and C amplifiers Q2)Apllication areas of Power amplifiers
15	June		IV ECE	II	Push Pull Amplifiers, Distortion in Simple & Push Pull Amplifier, Complementary Push Pull Amplifier,	Q1) Explain concept of PUSH and PULL Q2)list various distortion and factors effecting output of push-pull amplifier.
16	June		IV ECE	II	Integrated Circuit Power Amplifier. Introduction to MOSFET & CLASS D Power Amplifier.	Q1) Draw a NMOS operating in enhancement mode Q2)Why class D power amplifiers are important?
17	June		IV ECE	II	Revision of unit 2	Handling Queries and TEST
18	June		IV ECE	III	Voltage Regulation, Basic Series Regulators, Basic Shunt Regulators, Power	Q1) Numerical on voltage regulation Q2) Need of regulation?
19	June		IV ECE	III	Supply Parameters, Basic Switching Regulators, Step up Configuration,	Q1) Numerical on step -up Q2) Numerical on step -up
20	July		IV ECE	III	Step down Configuration,IC Voltage Regulator, SMPS.	Q1) Explain the difference IC and Amplifier regulator Q2) Give 2 uses of SMPS
21	July		IV ECE	III	Integrated Circuit Fabrication Process: oxidation, diffusion, ion implantation	Q1) Physical significance of oxidation is? Q2) How do we create free Ions in a substrate?
22	July		IV ECE	III	photolithography, etching, chemical vapour deposition	Q1) Various methods of lithography? Q2) Etching is done to?
23	July		IV ECE	III	sputtering, twin-tub CMOS process.	Q1) CMOS is efficient or NMOS? Q2) Sputterring Is an defect or is it desired? Explain.
24	July		IV ECE	IV	Operational Amplifier Fundamentals: Block Diagram Representation, Ideal OP-AMP, OP-AMP Equivalent Circuit,	Q1) List 5 application modes of OP-AMP Q2) Explain OP-AMP as integrator ?
25	July		IV ECE	IV	Ideal Voltage Transfer Curve, Input Offset Voltage, Input Bias Current, Input Offset Current, Output Offset Voltage,	Q1) Define terms Offset in current and voltage curve Q2) Why is Biasing required.
26	July		IV ECE	IV	Thermal Drift, Effect of Variation in Power Supply Voltages on Offset Voltage, Common Mode Configuration and CMRR	Q1) Numerical on offset Q2) Numerical on CMRR
27	July		IV ECE	IV	Frequency Response of OP-AMP: Open Loop Response, Close Loop Response, Input and Output Impedances,	Q1) Difference between open and Close loop. Q2) What is impedance matching? .

28	July		IV ECE	IV	Operational Amplifier Applications: Linear and non-linear applications-ADC and DAC,	Q1) Designa A/D convertor Q2) Design a non linear D/A convertor
29	July		IV ECE	IV	Multivibrators, Astable Multivibrator, Monostable Multivibrator, Bistable Multivibrator	Q1) List properties of different types of multivibrators Q2) Give example of their Application areas
30	July		IV ECE	IV	555 Timer, Monostable & Astable Operation with 555 Timer.	Q1) modes in 555 timers? Q2) what is meant by term Astable
31	July		IV ECE	IV	Revision of Unit 3 and 4	Q1) Problem solving session Q2) Test