

# JAYA ENGINEERING COLLEGE

## DEPARTMENT OF ECE

SUB: ELECTRONIC CIRCUITS II

DEPT: DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CLASS: II Year

### UNIT 1

1. Discuss qualitatively on the effect of topology of a feedback amplifier upon output resistance.also obtain the expression for output resistance for all four topologies.
2. Draw the circuit diagram of voltage series feedback amplifier using BJT and analyse the circuit to determine the input and output resistances.
3. Show how negative feedback reduces gain of an amplifier.
4. Explain the effect of negative feedback on the input resistance for a voltage shunt feedback amplifier.
5. Draw the circuit diagram of an amplifier with current series feedback.derive the expressions for gain,input and output resistances with feedback.
6. With suitable derivations discuss the effect of negative feedback on gain stability,distortion,input and output impedances.
7. Write notes on nyquist criterion.
8. Write notes on a feedback amplifier,using a block diagram.
9. Draw the circuit diagram of an amplifier with current shunt feedback. Derive the expressions for gain,input and output resistances with feedback.
10. Draw the circuit diagram of an amplifier with voltage shunt feedback. Derive the expressions for gain,input and output resistances with feedback.

### UNIT -II

1. Explain the colpitt oscillator.derive its frequency of oscillation.

2. Draw the RC phase shift oscillator. Explain its operation and derive condition for sustained oscillation and frequency.
3. Explain the working of miller type oscillator with circuit.give two applications.
4. Explain the barkhausen criterion to be satisfied for sustained oscillatons.
5. Draw the circuit diagram of a wien bridge oscillator and obtain an expression for frequency of oscillation.
6. Draw the circuit diagram and explain the working of Hartley oscillator.also derive the expression for frequency of oscillation and condition for sustained oscillation.
7. Give reasons why quartz crystal is used in crystal oscillator. Explain its working operation.
8. Discuss about the frequency stability of an oscillator.

### UNIT – III

1. With equivalent circuit of single tuned amplifier derive the gain as function of frequency. Derive the cutoff frequencies.
2. What is the need for neutralization? explain its types.
3. Draw the circuit of class C tuned amplifier and explain its operation with relevant waveforms.
4. Discuss the instability of tuned amplifiers.
5. Define quality factor. obtain the quality factor for a parallel resonant circuit.
6. What are synchronous and stagger tuned amplifier circuits and derive the equation

### UNIT - IV

1. Draw the circuit of emitter coupled astable multivibrator for one of the quasi stable state and show the direction of currents. mention the terinal voltages in the circuit.
2. With neat circuit diagram,explain the working of monostable multivibrator. derive its on time. draw the base and collector signals.
3. Draw the circuit of differentiator and explain the generation of narrow spikes from square wave. what are its applications?
4. With circuit discuss Schmitt trigger operation. obtain expression for UTP and LTP
5. Discuss the working of bistable multivibrator.

6. Explain the different methods of triggering monostable multivibrators.
7. Explain the switching characteristics of transistor with neat sketch.
8. Discuss the working of RC integrating and RC differentiating circuits.

#### UNIT - V

1. Explain triggered Blocking oscillator.
2. With a neat diagram explain the circuit for generating sweep using UJT. Obtain expressions for sweep period and frequency.
3. How frequency control is established using core saturation?
4. Draw the circuit of transistor bootstrap ramp generator and explain how the circuit operates.
5. Draw the circuit of a current time base generator. Explain the working of the circuit with associated waveforms.
6. Explain in detail about pulse transformer.
7. Explain the operation of astable blocking oscillator.