Questions Bank

SUB: AE & OPAMP

4TH SEM ELECTRICAL

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CHAPTER-1

2. Explain P- N junction.

3. Define PN junction Barrier voltage, depletion region, Junction Capacitance.

4. Draw Forward biased & reversed biased junction Diode

5. Draw symbol, circuit diagram for characteristics (Forward & reversed) Characteristics PN junction diode.

6. Define Forward voltage drop, Reversed saturation current, maximum forward current, power dissipation Package view of diodes of different power ratings

8. Explain Avalanche & Zener breakdown and its comparison.

9. Define Zener voltage, power dissipation, breaks over current, dynamic resistance & maximum reverse current.

CHAPTER-2

7. Explain Construction , Symbol, circuit diagram for characteristics (forwarded & reversed) of Zener Diode

11. Explain Construction, Symbol, circuit diagram for characteristics of Tunnel diode

13. Explain Construction, Symbol, circuit diagram for characteristics of Thermistors, Sensors, Barreters.

14. Explain Construction , Symbol ,circuit diagram for characteristics of PIN diode

CHAPTER-3

1. Define Rectifier & state its use.

2. Draw the circuit of centre tap FWR & Bridge FWR.

3. State PIV of a diode.

5. State the Average, RMS value, Efficiency, Ripple Factor, TU Factor of rectifier.

6. Compare HWR &FWR.

7. What is filter.

8. State different types of filters.
9. Define ripple & ripple factor.
10. Define rectifier efficiency.

CHAPTER-4

1. What is a transistor?
2. Define α.
3. State relation between CE, CB& CC .
4. Draw the transistor symbols.
5. State different types of transistor configurations.
6. Draw the input output characteristics of common emitter configuration.
7. Define input & output resistance of transistor in common mode.
8. State relation between α & β and β & γ.

13. State saturation & cut-off of transistor.

14. What is Q–point? State need of stabilization of Q- piont.

15. State power dissipation of transistor.

1. Define Concept of amplification

2. Define Small signal amplifier using BJT power gain voltage gain.

3. Define AC Load Line.

CHAPTER-5

1. What is Q point ? State need of stabilization of Q-piont

2. What is Function of Input & Output coupling capacitors & criteria for the value selection.

3. What is Function of emitter bypass capacitor & its value selection.

4. State the need of biasing & name different types of biasing.

5. What is stability factor?

6. Draw the circuit of base bias method of biasing. Derive the stability factor.

7. Draw the circuit of voltage divider method of biasing. Derive the stability factor.

CHAPTER-6

6. Explain AC equivalent circuit of transistor CE amplifier.

7. Explain Single stage CE amplifier with voltage divider biases its explanation.

8. Explain Frequency response of single stage CE Amplifier,

9. Define Bel, Decibel unit, Bandwith & its significance.

10. What is the Effect of coupling & emitter bypass capacitor on bandwidth.

11.What is Cascade Amplifiers (Multistage Amplifier)

12.Explain Need of Multistage Amplifiers, Gain of amplifier.

16. What is Feedback?

17. What is oscillator? Explain different types of oscillator.

18. Explain working of Hartley/ Colpitt oscillator and its frequency formula.

1. What is small signal analysis of transistor?

2. Draw and explain H parameter model of CB, CE, CC amplifier.

3. Derive the voltage gain, Input resistance, Output resistance of CE amplifier in H parameter model

1. Differentiate between voltage and power amplifier.

2. What is class A power amplifier. Derive the efficiency of class A amplifier.

3. What is class B power amplifier. Derive the efficiency of class B amplifier.

4. Draw and explain class A/ class B push pull amplifier.

CHAPTER-7

1. Differentiate between BJT and FET.

2. Draw the symbol of N channel and P channel FET.

3. Explain the construction and operation of N channel FET

4. Explain the Drain characteristic and Transfer characteristics of N channel FET.

5. Explain different parameter of N channel FET amplifier.

6. What is biasing and explain different types of biasing.

CHAPTER-8

1. What is OPAMP ? Explain different stages of OPAMP.

2. What is Inverting amplifier? Derive the voltage gain of Inverting amplifier?

3. What is Non inverting amplifier? Derive the voltage gain of Noninverting amplifier.

4. Explain OPAMP Summing circuit with suitable diagram.

5. Explain OPAMP Subtractor circuit with suitable diagram.

6. Explain OPAMP Differential amplifier circuit with suitable diagram.

7. Explain OPAMP Integrator/Differentiator circuit with suitable diagram.

8. What is CMRR?

9. What is virtual ground?

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