

4th semester E&TC Branch  
Analog electronics & linear IC

1. Answer All the Question

(10 x 2 = 20 marks)

- what is Avalance breakdown?
- what is Zener breakdown?
- what is the function of Rectifier?
- what is the need of biasing?
- what is P-n junction?
- What is Transistor?
- what is Q point?
- Define Coupling?
- what are the application of diodes?
- What is Doping?

2. Answer any six

(6 x 5 = 30 marks)

- Explain working principle of Diode?
- Explain V-I characteristic of Pn junction diode?
- Explain working principle of p-n-p & n-p-n transistor?
- Establish mathematical relation between ALPHA, BETA & GAMMA?
- Explain Types of Biasing?
- Explain Half wave Rectifier?
- Explain construction of P-n junction diode?

Answer any two

3. Explain full wave bridge rectifier? (2 × 10 = 20 marks)

4. Explain working principle of RC coupled amplifier?

5. Explain different types of transistor connection?

JAN / Friday 13

Day (013-353) / Wk-03

Th-4 - Analog electronics & Linear IC  
4th sem (E&TC Engg)

Full marks - 80

10 x 2 = 20 marks

1. Answer all the questions
- What is the function of amplifier?
  - What is BJT?
  - What is FET?
  - What is MOSFET?
  - What is feedback amplifier?
  - What is the function of oscillator?
  - What is Barkhausen Criterion?
  - Write two parameters of JFET?
  - What is power amplifier?
  - What is voltage amplifier?

2. Answer any six questions (6 x 5 = 30 marks)

- Differentiate between voltage & power amplifier?
- Working principle of class A & class B amplifier?
- Explain operation of CMOS?
- Explain principle of negative feedback amplifiers?
- Differentiate between JFET & BJT?
- Explain about Vmos?
- Explain RC phase shift oscillator with beautiful diagram?
- Explain crystal oscillator with beautiful diagram?

Answer any three questions (3 x 10 = 30 marks)

- Explain construction & working principle of MOSFET?
- Explain construction & working principle of JFET?
- Explain types of negative feedback?
- Explain circuit operation of Hartley & Wien bridge oscillator?

THU 4th sem E & TC  
Analog electronics & linear IC (FM-80 marks)

Day (021-345) / Wk-04

21

Saturday

JAN

1. Answer all the question [10x2=20 marks]

- What is Avalanche breakdown?
- What is P-n junction?
- What is Transistor?
- Define Coupling?
- What is Q point?
- What is feedback amplifier?
- What is Barkhausen criterion?
- What is power amplifier?
- What is opamp?

2. Answer any six [6x5=30 marks]

- Explain  $V-I$  characteristic of p-n junction diode?
- Establish mathematical relation between Alpha, Beta & Gamma?
- Differentiate between voltage & power amplifier?
- Differentiate between JFET & BJT?
- Explain RC phase shift oscillator with suitable diagram?
- Explain differentiator using opamp?
- Explain parallel resonant ckt?

Answer any three? [3x10=30 marks]

- Explain working of RC coupled amplifier with suitable diagram?
- Explain different types of transistor connection with ip & op characteristic diagram?
- Explain construction & working principle of JFET?
- Explain working of Bistable multivibrator with ckt diagram?
- Explain different types of non-linear ckt?

Sunday 22