Enrollment No:-_____ Exam Seat No:-_____

# C.U.SHAH UNIVERSITY

## Summer-2015

Subject Code: 4TE03AEL1 Subject Name: Advance Electronics

Course Name: B.TECH(EC) Date :5/5/2015

Semester: 3 Marks: 70

Time: 2:30 To 5:30

---

**Instructions:**

1) Attempt all Questions of both sections in same answer book/Supplementary.
2) Use of Programmable calculator & any other electronic instrument prohibited.
3) Instructions written on main answer book are strictly to be obeyed.
4) Draw neat diagrams & figures (if necessary) at right places.
5) Assume suitable & perfect data if needed.

---

**SECTION I**

| | | |
|---|---|---|
| **Q-1** | **Define and formulate the following.** | |
| | a) Voltage Series Feedback | **2** |
| | b) Voltage Stability Factor | **2** |
| | c) Input resistance | **2** |
| | d) Voltage Shunt Feedback | **1** |
| **Q-2** | **Attempt all.** | **14** |
| | a) Explain Thevenin's theorem with help of example. | **5** |
| | b) Define: h-Parameters with help of example. | **5** |
| | c) Explain Emitter Follower. Enlist technical features. | **4** |
| | **OR** | |
| **Q-2** | | **14** |
| | a) Explain Nortan's theorem. | **5** |
| | b) Explain FET Small-Signal Model. | **5** |
| | c) Compare various Transistor Amplifier Configurations. | **4** |
| **Q-3** | | **14** |
| | a) Draw and explain Crystal Oscillators | **5** |
| | b) Describe classification of Amplifiers and Distortion in Amplifiers | **5** |
| | c) Define: Thermal runaway and Thermal stability | **4** |
| | **OR** | |
| **Q-3** | | **14** |
| | a) What is FET Small-Signal Model? Explain it. | **5** |
| | b) Explain Hybrid –pi CE Transistor Model | **5** |
| | c) Draw RC Coupled Amplifier. Explain | **4** |

## SECTION II

**Q-4** **Define and formulate the following.**

a) The operating point **2**

b) Barkhausen Criterion **2**

c) Bode Plots **2**

d) Ideal operational Amplifier **1**

**Q-5** **14**

a) Explain Class A large Signal Amplifiers **5**

b) Explain Push-Pull Amplifiers **5**

c) Draw and explain Phase-Shift Oscillator **4**

**OR**

**Q-5** **14**

a) Explain Transformer Coupled Audio Power Amplifier. **5**

b) Explain Class B Amplifiers. **5**

c) What is Second Harmonic Distortion? Discuss. **4**

**Q-6** **14**

a) Explain Series Voltage Regulator. **5**

b) Draw and explain Hartley Oscillator. **5**

c) Draw and explain Differential Amplifier. **4**

**OR**

**Q-6** **14**

a) Draw and explain Wien Bridge Oscillator. **5**

b) Explain Negative Feedback Amplifiers. **5**

c) Explain Emitter-Coupled Differential Amplifier. **4**