

Code: EC3T4

**II B.Tech - I Semester – Regular Examinations - January 2014**

**ANALOG ELECTRONIC CIRCUITS  
(ELECTRONICS & COMMUNICATION ENGINEERING)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

- 1 a) Draw and explain the equivalent circuit of BJT for CE configuration using h parameter model. 7 M
- b) Find the voltage gain, current gain, input resistance and output resistance of CE configuration using h parameter. 7 M
- 2 a) Compare and contrast the four topologies of a feedback amplifier with respect to their characteristics and advantages. 7 M
- b) Derive the expression for voltage gain of a voltage series feedback amplifier. 7 M
- 3 a) Draw and explain the frequency response characteristics of a CB amplifier. 7 M
- b) Compare CE, CB, CC configurations. 7 M

- 4 a) Draw and explain common Drain amplifier frequency response. 7 M
- b) What is gain bandwidth product and explain its significance. 7 M
- 5 a) Draw and explain two stage RC coupled amplifier. 7 M
- b) Draw and explain cascode amplifier. 7 M
- 6 a) Draw and explain the operation of transformer coupled class B power amplifier. 7 M
- b) Explain the operation of series fed class A amplifier with resistive load. 7 M
- 7 a) Explain single tuned amplifier. Derive the expression for bandwidth in terms of resonant frequency and quality factor. 7 M
- b) Explain how do you increase the selectivity of single tuned amplifier. Explain its operation and also draw its frequency response. 7 M
- 8 a) State and explain Barkhausen criteria. 7 M
- b) Draw and explain RC phase shift oscillator. Derive the expression for frequency of oscillations. 7 M