Total No. of Questions : 10] [Total No. of Printed Pages : 3

Roll No. .....

EC–404

B. E. (Fourth Semester) EXAMINATION, June, 2012

(Grading/Non-Grading)

(Electronics & Communication Engg. Branch)

ELECTRONIC CIRCUITS

(TC–404)

Time : Three Hours

Maximum Marks : $\begin{cases} GS : 70 \\ NGS : 100. \end{cases}$

Note : Attempt *one* question from each Unit. All questions carry equal marks.

Unit–I

1. (a) What is biasing technique ? Explain self-biasing technique with derivation.

   (b) Derive expression for A_I, A_V, Z_i and Z_o with CE configuration of BJT using *h*-parameter.

Or

2. (a) Discuss simplified model for CB configuration using *h*-parameter.

   (b) Explain Q-point and Miller capacitance with effects on voltage gain.

P. T. O.

Unit – II

3. (a) Define the following :
   (i) Stability
   (ii) Distortion
   (iii) Bandwidth
   (iv) Gain
   (v) Negative resistance
   (b) Explain positive and negative feedback with advantages and disadvantages.

Or

4. (a) Explain RC phase shift oscillator with neat diagram, working and uses.
   (b) Discuss tunnel diode and UJT.

Unit – III

5. (a) Explain tuned amplifier with its applications.
   (b) Describe push pull amplifier.

Or

6. (a) What is power amplifier ? Explain Class A and AB power amplifier.
   (b) Write a note on transformer coupled and complementary symmetry amplifier.

Unit – IV

7. (a) Discuss performance analysis of RC and direct coupled amplifier.
   (b) Describe cascade amplifier with circuit diagram and advantages.

Or

8. (a) Discuss the following terms :
   (i) Differential and common mode gain
   (ii) CMRR
   (iii) Current mirror

   (b) Explain Bootstrapping technique and level shifter.

Unit – V

9. (a) Discuss ideal and practical characteristics of OP-AMP.

   (b) Explain Schmitt trigger and integrator with proper diagram.

Or

10. (a) Describe inverting and non-inverting amplifier.

    (b) Write notes on the following :
    (i) Instrumentation amplifier
    (ii) Precision rectifier