Code: R7311004

R7

B.Tech III Year I Semester (R07) Supplementary Examinations, May 2013

ELECTRONIC CIRCUIT ANALYSIS

(Electronics and Instrumentation Engineering)

Time: 3 hours Max Marks: 80

Answer any FIVE questions

All questions carry equal marks

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1 (a) Draw the circuit diagram of a CB amplifier along with its equivalent circuit. Derive expressions for A_V , A_1, R_i and R_0.

(b) Compare CE, CC and CB amplifier in all aspects.

2 Describe the features, functioning and applications of the following amplifiers:

(a) CE – CB cascade.

(b) CE – CC cascade.

(c) CE – CE cascade.

3 Given the following transmission measurements made at $I_c = 15\,mA$, $V_{CE} = 10\,V$ and at room temperature: $h_{ie} = 500\,\Omega$, $h_{fc} = 90$, $A_{ie} = 10\,at\,10\,MHz$, $Cob = 3\,pf$.
Find $f_T, f_B, C_e, r_{b'e}\ and\ r_{bb^1}$. also calculate the values of all hybrid π parameter.

4 Briefly explain the following:

(a) Adjustable 3-terminal IC voltage regulators.

(b) SMPS.

5 (a) Explain about stages tuning. What are its advantages?

(b) Write short notes on double tuned amplifier.

6 Write short notes on the following:

(a) Switching regulator configuration.

(b) UPS.

7 (a) Draw and explain the operation of class - A power amplifier. Show that the conversion efficiency is 25%.

(b) Discuss in detail about the effect of cross-over distortion. How do you avoid the cross-over distortion in power amplifier circuit?

8 (a) Compare single tuned inductively coupled amplifier with capacitively coupled single tuned amplifier.

(b) Draw and explain the operation of CE double tuned amplifier.

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