Nepal College of Information Technology

**Unit Test**

Spring 2013

Program : BE Time : 2 hrs

Semester : (IV) FM : 60

Subject : Electronic Circuits PM : 30

* *Candidates are requested to give their answer as far as practicable in their own words.*
* *The figure in the margin indicates the full marks*
* ***Attempt ALL question***

1. a. Draw the small signal model of common collector amplifier and derive the expression for input and output impedance ,voltage gain and current gain. [7]

b. Find the voltage gin *v*l */ v*s for the amplifier as shown. Let β=100. [8]



2. a. Why multistage amplifier is necessary? Derive necessary expression of overall voltage gain of multistage amplifier. [8]

b. Briefly describes the characteristics and use of different transistor amplifier configurations in cascade. [7]

3. a. Explain about the frequency response of an amplifier. [8]

b. What is bandwidth of an amplifier? Explain the frequency response of RC-couple stages. [7]

4. a. Define different types of amplifier. Prove that the efficiency of Class-A amplifier is 25%. [8]

b. What is super-β transistor? Explain “Darlington Pair” as a super super-β transistor. [7]

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