

II B. Tech II Semester Regular/Supplementary Examinations, November - 2020
ELECTRONIC CIRCUIT ANALYSIS
 (Com to ECE, EIE)

Time: 3 hours

Max. Marks: 70

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- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any **FOUR** Questions from **Part-B**
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PART -A

1. a) What is CE short circuit current gain?
- b) Three amplifiers of gain 20dB, 30dB and 40dB are connected together. Find the overall gain in dB and in normal units.
- c) Write the expression for input and output resistance of current shunt feedback amplifier.
- d) Define Barhausen Criterion.
- e) What is Thermal stability?
- f) Give the classification of tuned amplifiers.

PART -B

2. a) Derive the expressions for the following hybrid II conductance
 i) g_m ii) $g_{b'e}$ iii) $g_{b'c}$ iv) $g_{c'e}$
- b) Give the Analysis of common Source Amplifier circuit at high frequencies.
3. a) Explain three types of coupling methods used in multistage amplifiers.
- b) With neat sketch explain Boot-strap emitter follower.
4. a) Explain current shunt and voltage shunt feedback amplifiers?
- b) An amplifier requires an input signal of 60mV to produce a certain output with a negative feedback to get the same output the required signal is 0.5V. The voltage gain with feedback is 90. Find the open loop gain and feedback factor.
5. a) Derive the expression for frequency of oscillation of Hartley oscillator
- b) Discuss about Frequency and amplitude stability of oscillators
6. a) A single transistor is acting as ideal Class B amplifier with load of $1K\Omega$, if DC collector current is 15mA, $V_{CC}=20V$. Determine its efficiency
- b) Draw the complimentary-symmetry class-B power amplifier and explain its operation.
7. a) Explain the effect of cascading single tuned amplifiers on bandwidth.
- b) Define a Q-factor of a resonant circuit. What is the need for tuned amplifiers?