

Section III

5. (a) Compare efficiency for class A, B and C power amplifier with the help of mathematical modelling.
(b) Power transistor has thermal resistance of $200^{\circ}\text{C}/\text{watt}$. Find maximum permissible power dissipation for maximum junction temperature of 100°C and ambient temperature of 25°C .
6. (a) What is offset error ? How does it effect the operation of differential amplifier ?
(b) Derive expression for voltage gain in emitter coupled differential amplifier.

Section IV

7. (a) A 5 mV peak, 5 kHz sine waveform is applied to inverting input of OP-AMP. Differentiator for which $R = 50\text{k}\Omega$ and $C = 1\mu\text{F}$. Determine output voltage.
(b) Explain the operation of OPAMP configured of Bridge amplifier.
8. Write short notes on the following :
- (i) Schmitt Trigger
 - (ii) Log Multiplier
 - (iii) Astable Multivibrator

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Roll No.

E-13

B. Tech. EXAMINATION, Dec. 2018

(Fifth Semester)

(B. Scheme) (Main & Re-appear)

(EE, EEE)

ECE311B

INTEGRATED ELECTRONICS

Time : 3 Hours]

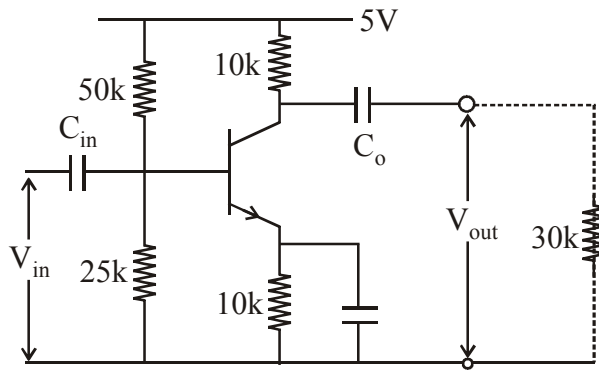
[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Section. All questions carry equal marks.

Section I

1. (a) Determine output impedance and voltage gain for the following circuit. Transistor parameter are : $h_{ie} = 2k\Omega$, $h_{fe} = 100$, $h_{re} = 5 \times 10^{-4}$, $h_{oe} = 25\mu S$.



- (b) Draw circuit for CC transistor configuration and give its H-parameter model.
2. (a) Discuss frequency response of RC coupled amplifier at very high frequencies.

- (b) Draw equivalent h-parameter model for CE amplifier with and without bypass capacitor. Discuss its effect on voltage gain.

Section II

3. (a) Closed loop voltage gain for an amplifier is 100. This should not vary by more than 5% despite 20% variation in open loop voltage gain. Determine open loop voltage gain and feedback factor for amplifier.
 - (b) Discuss impact of negative feedback on input and output impedance of voltage shunt feedback amplifier.
4. (a) What is different in feedback configuration of amplifier and oscillator ? Explain with the help of voltage shunt configuration.
 - (b) Derive expression for frequency of oscillations for Wien Bridge oscillator.