

Code No: 54020

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech II Year II Semester Examinations, May - 2016

ELECTRONIC CIRCUIT ANALYSIS

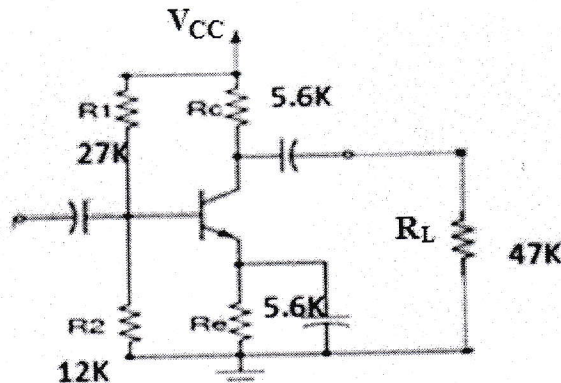
(Common to ECE, EIE, ETM)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) Draw the Common base configuration circuit diagram, input and output characteristics and also find its h parameters.
- b) The common Emitter circuit shown in figure has transistor parameter: $h_{ie} = 1K\Omega$, $h_{fe} = 85$, and $h_{oe} = 2\mu S$. Calculate A_v , Z_i and Z_o . [8+7]



- 2.a) Draw the circuit diagram of direct coupled two stage circuit and explain its design.
- b) What are the advantages of Darlington amplifier? Draw its circuit diagram and explain its working. [7+8]
- 3.a) Show how a capacitor may be used to obtain a desired upper cutoff frequency in a transistor common emitter amplifier?
- b) Explain the significance of gain bandwidth product in an amplifiers. [10+5]
- 4.a) Draw the small signal model of common drain amplifier and find its voltage gain.
- b) What is folded cascade amplifier? Draw its circuit diagram and explain its working. [7+8]
- 5.a) Explain how negative feedback will improve the stability of the amplifier?
- b) Derive an equation for the voltage gain of an amplifier that uses series voltage negative feedback. Draw any such type of circuit. [6+9]
- 6.a) Draw the RC phase shift oscillator and derive the equation for oscillations.
- b) Design a Hartley oscillator to produce a 100 kHz output frequency with an amplitude of approximately $\pm 8V$. For simplicity, assume that there is no mutual inductance between L_1 and L_2 . [7+8]

7.a) Sketch the basic circuit of Class B push pull amplifier and draw typical waveforms and also explain its operation.

b) What is heat sink? Why it is used in power amplifiers?

c) What is cross over distortion? How to overcome it?

[7+4+4]

8.a) Draw the circuit diagram of Single tuned amplifier and explain its operation.

b) What are the advantages of stagger tuned amplifier?

[10+5]

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