

Electronic Circuits (REVISED COURSE)

MAR 26/5/07
ND-9386
[Total Marks : 100

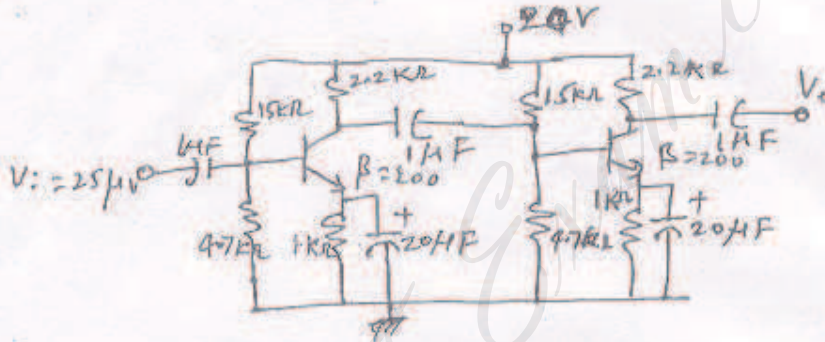
(3 Hours)

- N.B. (1) Question No. 1 is compulsory.
 (2) Answer any four out of remaining six questions.
 (3) Assume any suitable data wherever required but justify the same.
 (4) Figures to the right indicate marks.

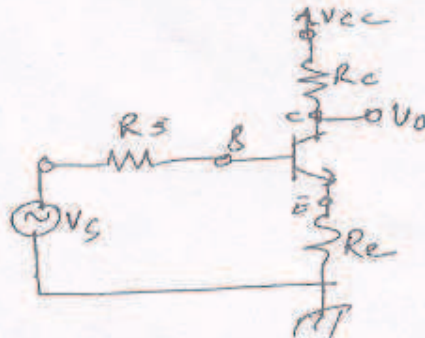
S.E. (E) sem IV Rev Electronic Circuits

26/5/07 20

- Explain the following:—
 - General characteristics of negative feedback amplifiers
 - Second and higher harmonic distortion
 - Resonant circuit oscillators.
 - Explain basic block diagram of operational amplifier
 - Basic characteristics of practical operational amplifiers.
- If two cascaded stages have very unequal bandpasses, show that the combined bandwidth is essentially that of the smaller. 8
 - Calculate the voltage gain, output voltage, input impedance, and output impedance for the cascade BJT amplifier shown figure. Calculate the output voltage resulting if 10 KΩ load is connected to the output. 12



- Draw UJT relaxation oscillator and explain its operation. Derive the expression for output frequency? 10
 - Derive A_v , R_i and R_o for DIDO differential amplifier using BJTs. 10
- Derive the condition and frequency of oscillation of R-C phase shift BJT amplifier. 10
 - LC oscillators Vs. Crystal oscillators. 10
- Class A large-signal amplifiers Vs. Transformer coupled audio power amplifier. 10
 - Draw and explain class B push-pull amplifier? What are advantages of a push-pull system. 10
- Effects of negative feedback on amplifier stability, bandwidth, non-linear distortion, input impedance and output impedance. 10
 - Identify the type of feedback and amplifier. Derive expression for R_{if} , A_{vst} and R_{of} 10



- Explain the working and also derive the necessary output equation — 10
 - Subtractor circuit using OP-Amp
 - Logarithmic amplifier circuit using OP-Amp.
 - Miller's effect and frequency response. 10
 - Darlington pair and its application.