Con. 5205-09. S.E.(Comp) Sem III (R) SP-7364

(REVISED COURSE) 8/12/09

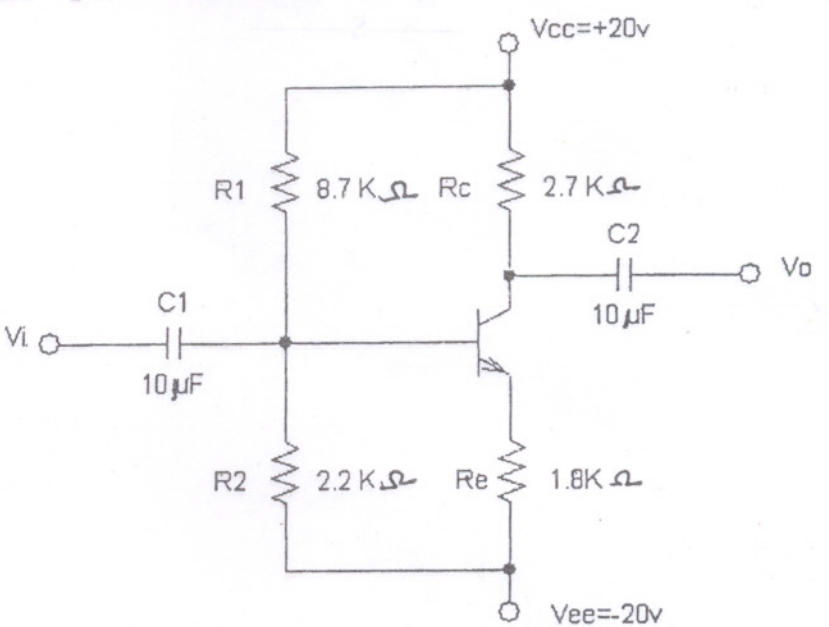
(3 Hours) [Total Marks : 100

Electronics Devices & Linear Circuits

N.B. : (1) Question No. 1 is compulsory.
(2) Attempt any four questions out of the remaining six questions. 2-30 P.M.to5
(3) Assume suitable data if necessary.

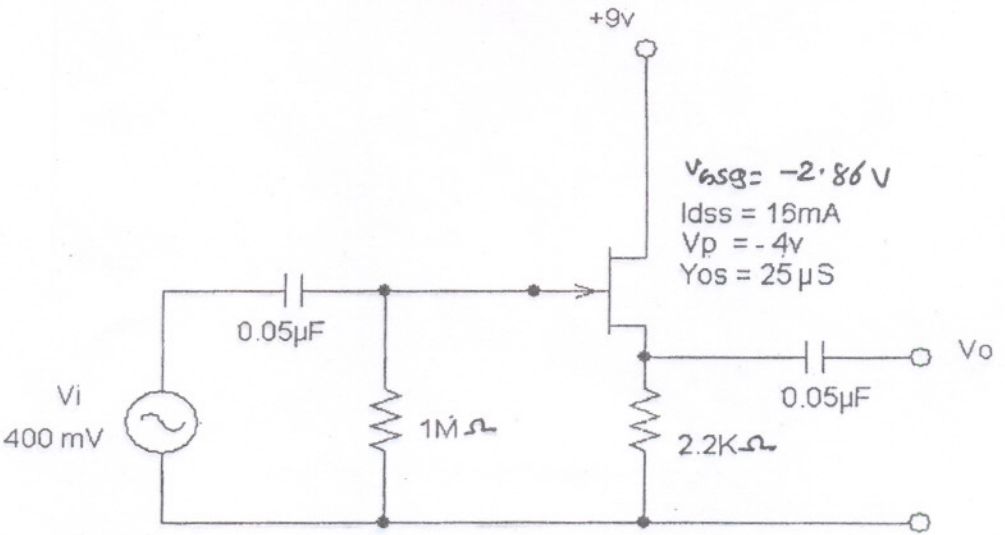
1. (a) Explain the Purpose of a thin, Lightly doped base region of BJT Structure. 20
(b) Using practical OP-AMP realize following relation $Vo=2V_1+5V_2+7V_3-V_4$.
(c) Draw and explain the Block Diagram of Operational Amplifier.
(d) List Features of 555 Timer.
(e) Justify how FET can be used as Variable resistor, constant current source and constant voltage source.

2. (a) Derive equations for Z_i, Z_o, A_v for Common Source Configuration using voltage divider network (with Unbypassed Rs). 10
(b) Determine V_C and V_B for the network shown ($\beta = 120$) 10



3. (a) Expláin the Graphical Determination of the h-parameters using the characteristic curves of Common emitter amplifier. 10

(b) Calculate the voltage gain, input and output impedance for the circuit shown below. 10



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4. (a) Explain how OP-AMP can be used as Summing, Scaling and Averaging Amplifier in Inverting configuration. 10

(b) Explain Successive Approximation Resistor A/D converter. 10

5. (a) Design a +9V regulator using the LM 723 use current limit of 100mA. 10

(b) Explain any two Applications of Astable Multivibrator. 10

6. (a) Explain the D/A converter using binary weighted resistor. 10

(b) Explain Instrumentation Amplifier using Transducer Bridge circuit. 10

7. Write Short Notes on 20

(a) PLL

(b) Inverting Schmitt Trigger

(c) Op-Amp as an Integrator.

(d) Features of Timer.

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