

Full Marks: 60

Time: 3 Hrs.

*Answer Question No.1 which is compulsory and any Five from the rest.**The figure in the right hand margin indicates marks.*PART – A

[10x1.5=15]

1. a) What is small signal modeling? How does a fixed biased resistor affect the input impedance of a CE amplifier?
- b) Which h-parameters can be determined from the input and output characteristics of a BJT? .
- c) Explain how a Schmitt trigger converts a sine wave into a square wave.
- d) Differentiate between DMOSFET and EMOSFET.
- e) Design a second order high pass active filter.
- f) What do you mean by unsymmetrical triggering? Where is it used?
- g) Given $\beta=120, r_e=4.5\Omega$ and $r_o=40k\Omega$, sketch the approximate hybrid equivalent circuit.
- h) Find the period of output and the frequency of oscillation of an astable multivibrator with $R_1=R_2=25k\Omega$ and $C_1=C_2=0.2\mu F$.
- i) Enumerate the interrupt signals of a 8085 microprocessor.
- j) What kind of I/O mapping scheme is used by 8085 microprocessor?

PART – B

[5x9=45]

2. For the emitter-follower network, determine r_e , Z_i , Z_o , A_v and A_i . Given $\beta=100, r_o=25k\Omega$. [9]

