Blackboard Notes for lecture - 4

Slide 4:

the slope of the straight line will contribute to different a point.

slide 7:

the Q point should be properly selected, otherwise, it will result in waveform distortion.

slide 8:

$$A_v = - \frac{\beta \cdot R_c R_L}{r_\pi (R_c + R_L)}$$, be aware of the minus sign here,

it means the ~~phase~~ output signal and input signal are out of phase ($180°$ phase difference).

the amplification coefficient can be tuned by adjusting the values of R_c and R_L.

slide 9:

please be aware of i_i which is generally not equal to i_B. Calculate input impedance and output impedance according to definitions.

for any complicated BJT circuit:

You need to formulate v_i and v_o, then

calculate $A_v = \dfrac{v_o}{v_i}$

Also, DC circuit should be first drawed to determine Q point.

then AC circuit should be built to formulate v_i and v_o.