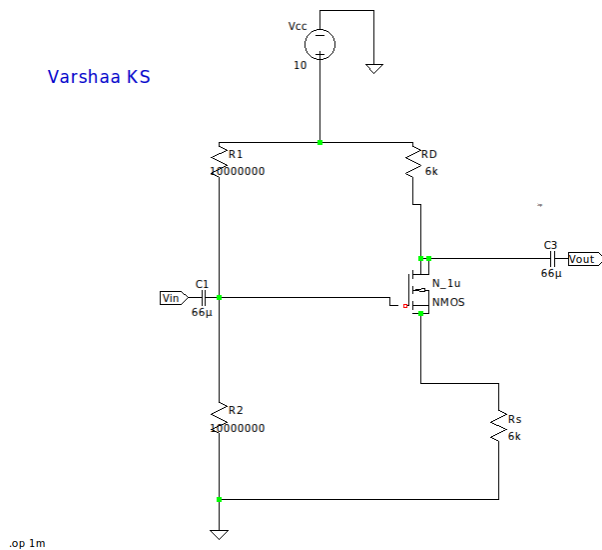
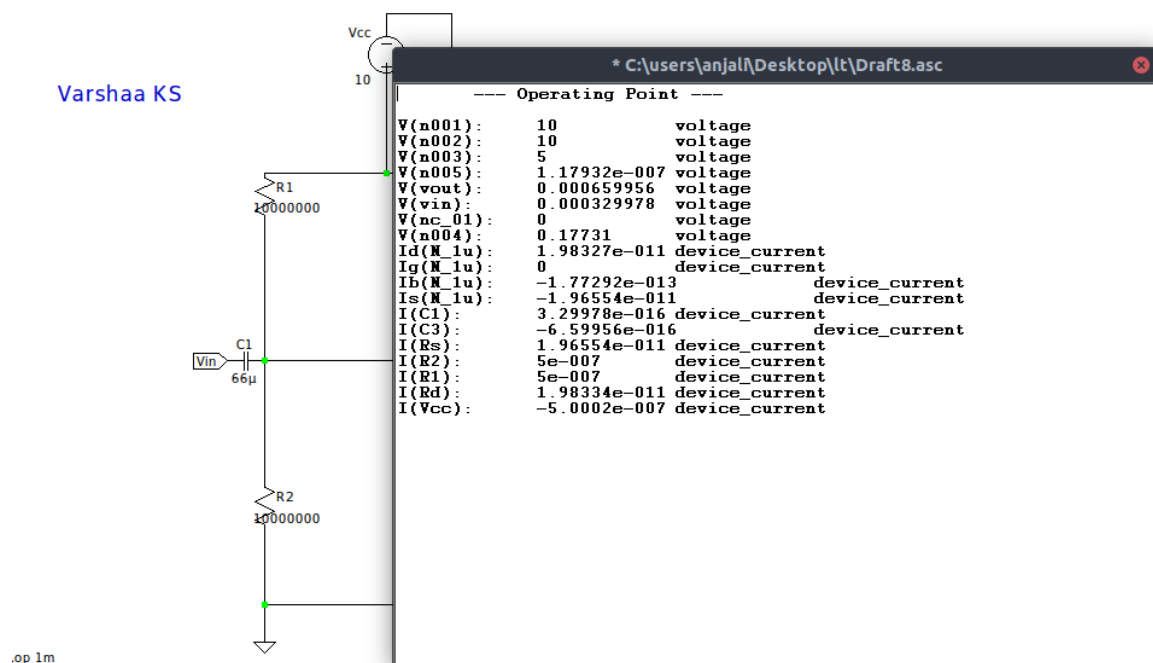


a) Solve the above circuit to find V_G , V_D , V_S and I_D theoretically with the knowledge of working of NMOS? Attach the photocopy of solved problem? (10 points)

b) Attach the screenshot of schematic consisting designed circuit? (5 points)



c) Attach the screenshot of voltages and currents obtained by performing DC Op simulation? (5 Points)



d) Why the current through gate of MOSFET is zero? Explain briefly? (2 Points)

The current through the gate is 0 because the gate and the body forms a capacitor. The dielectric inside a capacitor has high resistance and thus current cannot pass through unless there is a very high electric field and dielectric breakdown occurs. Or there is also a possibility of quantum tunnelling. But neither of those effects happen in this scenario.

e) Name the bias employed for the given circuit? (1 point)

Classical discrete circuit bias

f) What is the significance of threshold voltage in MOSFET? (2 points)

If the voltage on the gate terminal is less than the threshold voltage, then a n channel will not be formed. Without the formation of the N –channel, the transistor will be in the cut off mode and current will not flow the transistor (Not accounting for subthreshold conduction.)