

## UM-SJTU JI Summer 2020 VE 320 Quiz 7

Name:

Student ID:

1. (a) Draw the C-V curves of a MOS capacitor with n-type Si as the substrate, at low frequency and high frequency, respectively. Explain why they are different.

(b) Draw the C-V curve of a MOSFET at low frequency and high frequency and explain.

2. Draw the  $I_D$ - $V_{SD}$  relationship for a p-type MOSFET at different gate voltages, assuming the source is grounded. Explain why there is the saturation region, and how the saturation point changes with different gate voltages.