Laboratory #10 Pre-lab

Class:

Name: Student ID:

1. Explore the characteristics of class-B output stage
2. Use PSPICE to verify the characteristics of class-B output stage as shown in Fig. 10.7, which is the same schematic as Fig. 10.4. Set VDD to be 5V, and Vin to be sine wave with 2Vpp, 1kHz.

Please show

(a) Current through Q1/Q2 and output current (current through R1)

(b) Output vs. input voltage waveform.



Fig. 10.7 Class-B output stage for SPICE simulation

1. Briefly describes the characteristics of class-B output stage using these waveforms (e.g. better efficiency than class-A, and the disadvantage of crossover distortion).
2. Explore the characteristics of class-AB output stage.



Fig. 10.8 Class-AB output stage for SPICE simulation

1. Use PSPICE to verify the characteristics of class-AB output stage as shown in Fig. 10.8. Please show

(a) Output vs. input voltage waveform

(b) Current through Q1/Q2 and output current (current through R1).

1. Briefly describes the characteristics of class-AB output stage using these waveforms (e.g. without crossover distortion).