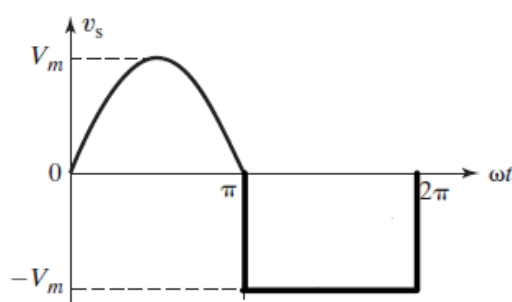


EEE521 Homeworks

HW1.

1. Obtain the multi pulse PWM signals for a full bridge inverter on Matlab. Fundamental frequency might be up to 400 Hz and carrier frequency up to 20KHz, switching instants and waveforms should be shown on a graph. Due on 25/11/2022
2. Due on 25/11/2022. The input voltage of the single phase half wave rectifier is given in Figure 1. The rectifier has a purely resistive load at the output. The diode is ideal. The peak value of the voltage V_M is 300V. Calculate
 - (a) the rectification ratio,
 - (b) the FF,
 - (c) the RF,
 - (d) the PIV of diode D1



1. **Figure 1**

HW2.

1. Obtain the multi pulse PWM signals for a full bridge inverter on a microcontroller. Fundamental frequency might be up to 400 Hz and carrier frequency up to 20KHz, Due on 23/12/2022
2. Light on and off a led using a microcontroller. On that use an LCD to show switching frequency and duty ratio. Make these parameters can be altered in microseconds. Due on 23/12/2022
3. Make a design and construction a dimmer circuit. Due on 23/12/2022

Final HW.

1. Find 10 articles related to your interesting areas on power electronics. Investigate deeply in one or two papers. present a detailed investigation(-report including modeling, simulations detailed derivations of given equations) in one of the papers. Due on 30/12/2022

Submit your presentations and homeworks both as hard and soft copy including all the supplementary documents.

Thanks

Assist. Prof. Dr. Ali Osman ARSLAN
University of Gaziantep
Department of Electrical & Electronics Engineering
27310 Gaziantep TURKEY
Email: aoarslan@gantep.edu.tr
Tel: 03423172149