

Medical Equipment 2007
Project Assignment #1

I. Ultrasound Imaging System:

1. Starting from a power source that supplies 5V at 20A, 12V at 1A, -5V at 0.5A, and -12 at 1A, design an ultrasound power supply that allows the following outputs to be obtained:
 - a. $\pm 15\text{V}$ at 2A
 - b. +150V at 0.1A
 - c. +100V at 0.1A
 - d. +3.3V at 10A
2. Repeat the above problem starting from a 220 AC power source.

II. Hemodialysis System:

1. Starting from a power source that supplies 5V at 30A, 12V at 10A, -5V at 1A, and -12 at 5A, design an ultrasound power supply that allows the following outputs to be obtained:
 - a. $\pm 15\text{V}$ at 5A
 - b. +24V at 20A
 - c. +48V at 1A
 - d. +3.3V at 10A
2. Repeat the above problem starting from a 220 AC power source.

Notes:

1. Please submit one report for each group.
2. Grade will be same for all project members
3. Each report will amount to 1 point in your coursework grade.
4. Due date: Sunday March 4th, 2007.