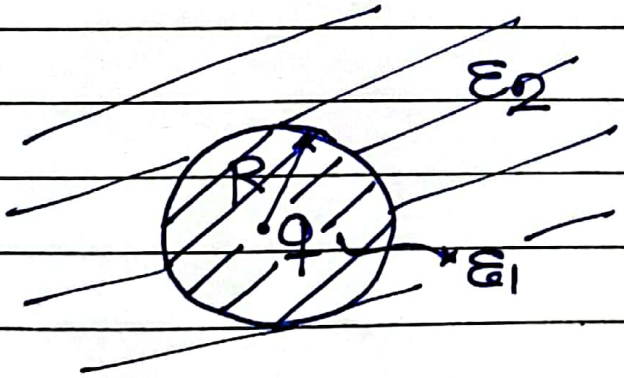
Assignment 4 (70 points)

1. Problem 5.2, Zangwill (a) & (b) (5+5 = 10)
2. Problem 5.4, Zangwill, (a) 10 (b)
3. Problem 5.15, Zangwill, (b) & (c) (5+5 = 10)
4. Problem 6.1, Zangwill (8).
5. Problem 6.10, Zangwill (10)
6. Problem 6.14, Zangwill (a), (b) (6+4 = 10)
7. 

• Free charge q at $\vec{r} = 0$.

The sphere of radius R is made of dielectric ε_1, embedded in ε_2, which fills rest of space.

(i) Calculate σ_p, ρ_p ... (4)

(8 & 9)

(ii) From σ_p, ρ_p, calculate $E(r)$ everywhere. (10)