**EEE361**

**ASSIGNMENT**

**SET-11**

1. If r = xax + yay + zaz  is the position vector of point (x, y, z), r = |R| and n is an integer, show that:

a.

b.

c.

d.

1. For a medium, µ = µ0 and ε = 5ε0. If H = 2cos (t-3y)az A/m, Find the and E.
2. The total electromagnetic energy is given below

W=

Show from Maxwell’s Equation that

1. A wave is given is air:

E = (8ay – 6az) Sin V/m impinges a dielectric half- space as shown in Fig. Below. Find:

a. The incident angle

b. The reflected and Transmitted E and H field

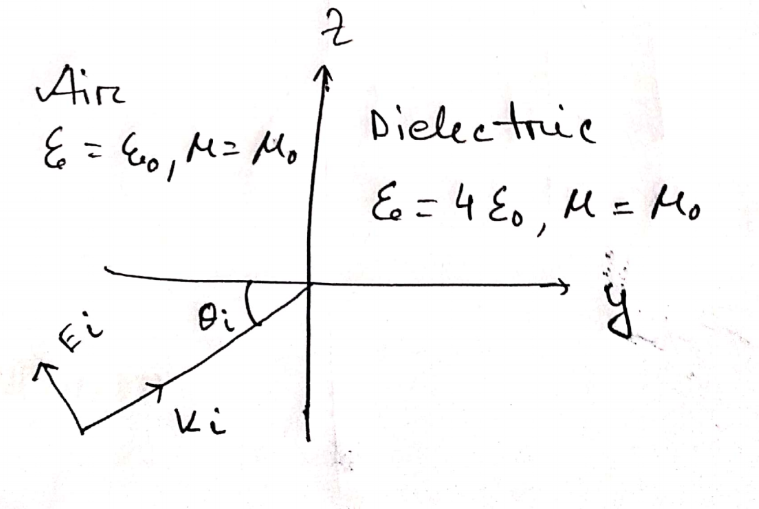


Fig: Problem 4

1. Suppose **E** fields and **H** fields are:

k = kxax + kyay + kzaz and r = xax+yay+zaz

Show that can be expressed as K E = and deduce ak aE = aH

For the same fields:

Show that Maxwell’s equation in a source-free region can be written as

k.E = 0

k.h=0

k E =

k H =

From these equations deduce ak aE = aH and ak aH = aE