TASK 1

WEEK 1

Q1. A SHORT SUMMARY ABOUT THE CONDUCTIVE HEAT TRANSFER

ANS:

Heat can transferred through three means: conduction, convection and radiation.

The conduction is the amount of heat transfer through Solid state of matter.

Conductivity is the Willingness of the material to transfer heat. The conductive heat transfer takes place in solids because of temperature differences between various parts of the solid. Heat transfer through a wall is directly proportional to its Area. More the thickness of the wall, less the heat transferred. It is inversely proportional to the thickness.

The nit of conductivity is (w/mK).

Q2. SOLVING THE SAME EXERCISE WITH L= 0.4 M, A= 20 M2, DELTA T= 25, AND K=0.78 W/M K USING BOTH SIMPLE METHOD AND USING THE RESISTANCE CONCEPT

ANS:

L=0.4M, A=20M^2, ΔT=25 AND K=0.78W/M

THERMAL RESISTANCE CONCEPT

METHOD-1

Q=KA ΔT/L

= .78X20X[25/.04] =975W

METHOD-2

Q= T_1-T_2 /R_{WALL}

R_{WALL} =L/KA

R_{WALL}=0.4/(.78X20)=976.5W