**9-MECHANICAL PROPERTIES OF SOLIDS**

**1.Young’s Modulus**

1. Stress  2. Longitudinal strain =  3. Young’s modulus  or  4. Percentage increase in length 

**2. Bulk Modulus**

1. Volumetric stress =  the applied pressure 2. Volumetric strain =  3. Bulk modulus =  or  Negative sign indicated the decrease in volume with the increase in stress 4. Compressibility = 

**3. Modulus of Rigidity**

1. Shearing stress =  2. Shearing strain =  3. Modulus of rigidity =  or 

**4. Elastic Potential Energy**

1. Total P.E. stored in a stretched wire, Stretching force x extension =  *F ∆ l* or Stress x strain x volume of wire 2. P.E. stored per unit volume of a stretched wire. Stress x strain or Young’s modulus x strain2

**5. Poisson’s Ratio**

Poisson’s ratio =  or 