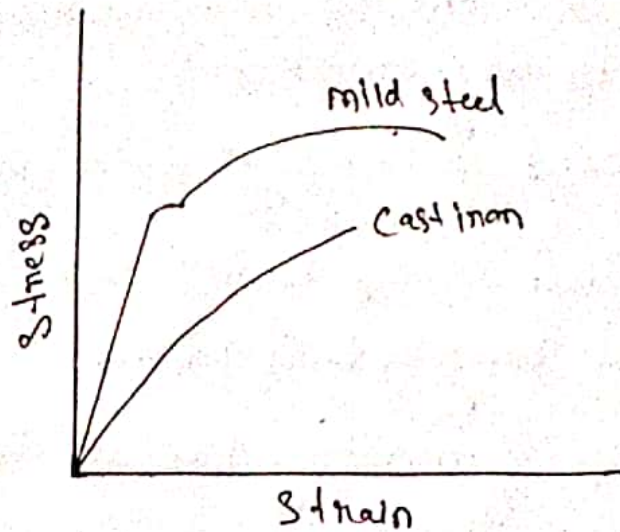


Section-4

Q3. Ans: Stress - Strain diagram:



* Strain energy:- is defined as the energy stored in a body due to deformation. The strain energy per unit volume is known as strain energy density and the area under the stress-strain curve towards the point of deformation. When the applied force is released, the whole system returns to its original shape.

* Young's modulus of elasticity for a material of a wire is constant i.e. strain energy per unit volume is directly proportional to the square of the stress. Thus the strain energy per unit volume is proportional to young's modulus of the material of the wire.