

# MODULE IV

# METALS AND ALLOYS



## **PROPERTIES OF METALS**

- 1. All metals are solids except mercury**
- 2. Ductility**
- 3. Malleability**
- 4. Weldability**
- 5. Elasticity**
- 6. Hardness**
- 7. Toughness**
- 8. Brittleness**
- 9. Stiffness**
- 10. mechinability**

# Alloys

**It is a homogeneous solid mixture of two or elements in which at least one should be a metal.**

**Eg- brass(Cu=60%, Zn=40%)**

**bronze(Cu=90%,Sn=10%)**

**steel(iron, carbon=0.3 to 2.5%)**

**solder(Pb=37-60%,Sn=31-60%)**

## **Purpose of making alloys**

- 1. To increase the resistance to corrosion**
- 2. To increase the hardness of the metal**
- 3. To lower the melting point of the metal and to make it easily fusible**
- 4. To modify the chemical activity of the metal**
- 5. To modify the colour**
- 6. To provide the better castability**