

UNIT 2

DESIGN OF FASTENERS

1) What is meant by temporary joint and permanent joint.

- If the machine parts can be dismantled without damage or destroying the connecting elements for maintenance or repair then that the joint is called as **temporary joints**.
- When the machine parts can not be dismantled without destroying the connecting elements these joints are called as **permanent joints**.

2) Define welding.

Welding can be defined as a process of joining two similar or dissimilar metals with or without application of pressure along with or without addition of filler material.

3) What are the types of welded joints?

- Butt joint
- Lap joint
- T – joint
- Corner joint
- Edge joint.

4) What are the various types of welded joints.

- Lap joint or fillet joint - Transverse lap joint, Parallel fillet joint, circular fillet joint
- Butt joint - Square butt joint, V-type butt joint, U-type butt joint
- Corner joint
- Edge joint
- T-joint

5) Define Lap and Butt joint

- **Lap joint** – The two plates are overlapping each other for a certain distance then welded. Such welding is called lap weld.
- **Butt joint** – The joint is made by welding the ends or edges of two plates.

6) Write the advantages of welded joints over the riveted joints.

- It is assumed that the tensile stress is distributed uniformly across the section of the butt weld.
- It is assumed that the shear stress in a parallel fillet weld is uniformly distributed along the entire length of the weld.
- Stress situation in a fillet weld is complicated because of bending action of the force.

7) Define Brazing

Brazing is the process in which the parts to be joined are heated to more than 450°C and the filler metal is allowed to flow into the clearance space between the joining parts, by capillary action.

8) What are the considerations involved in the selection of weld type?

- a) The shape of the welded component required.
- b) The thickness of the plates to be welded.
- c) The direction of the forces applied.