**Subject Name: Elements of Machine Design (22564) Date:- 22/08/2024**

**Assignment No: - 1 Course Outcome: 225 .1**

**Topic Name: - Introduction to Design**

1. What is factor of safety? State its importance in design of machine elements.
2. What are the factors to be considered for selection of materials for design of machine elements.
3. Define (i) Ductility (ii) Toughness (iii) Creep.
4. Explain the following type of stresses: (a) Transverse shear stress (b) Compressive stress (c) Torsional shear stress.
5. Explain with neat sketches the methods of reducing stress concentration in cylindrical members with shoulders and holes separately.
6. Identify the material and its composition. (i) X10Cr18Ni9Mo4Si2 (ii) XT72W18Cr4V1.
7. State the theories of elastic failure. Explain maximum normal stress theory and maximum shear stress theory with equations.

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**Assignment No: - 2 Course Outcome: 225.2**

**Topic Name: - Design of Joints, Levers and Offset links**

1. Write the design procedure of a spigot and socket cotter joint with a neat sketch.
2. Write the design procedure of knuckle joint with neat sketch.
3. Why taper is provided on cotter? What is its normal value?
4. Differentiate between ‘direct stress’ and ‘bending stress’.
5. Write four applications of cotter joint and knuckle joint each.