

Questions for diploma exam
(machine design)

1. Name and describe what should be taken into account when specifying the value of safety factor (FOS)
2. Describe what factors are taken into account in specifying values of allowable stress (engineering stress) in static and fatigue loads
3. Describe calculation methods of joints with fitted and loose (pre-stressed) bolts when load (external force) direction is perpendicular to bolts' axes
4. Describe the influence of rigidity in bolted connections with pre-stressed bolts with the external load (force) parallel to bolts' axes
5. Hub shaft joints – advantages and disadvantages of the most common types of joints
6. Main functions of resilient (flexible) elements in machines
7. Types of shaft couplings and clutches and their main functions in driving systems
8. Methods of generating fluid film friction in slider bearings
9. Roller element bearings – types, characteristic features, selection methods and evaluation of durability
10. Types of mechanical transmissions and characteristic features of the most common types