

## **Machine parts and mechanisms**

### **Test for Lectures 1-4**

#### 1. Describe the function of joints in mechanical engineering

A: Machine parts (components) whose main function is always to "couple" parts of a technical product in combination with another mobility function:

#### 2. Characterize screw and threaded connections.

A: See presentation chapter 2.1.1

#### 3. Characterize the connection with a pin

A: Easily removable joints by means of a cylindrical pin, which is fitted with a snug fit in the openings in the coupled portions, so that the coupled portions TS are rotatably movable about the pin axis.

#### 4. Characterize the joints with pins

A: Fixed (ie immovable) releasable connections by (cylindrical or conical) pins which are firmly inserted in (transverse) holes in the connecting parts or in (longitudinal) holes between the connecting parts.

### **Test for Lectures 5-8**

#### 1. Characterize the joints with tongues and wedges

A: Easily detachable connections with pins or wedge-shaped wedges (for beveled wedges on one of the surfaces) which are inserted in longitudinal recesses or (exceptionally) transverse bores of corresponding shape in the parts to be joined.

#### 2. Basic distribution of the pins

A: - fixed

- exchangeable and free

- segmented (woodruff)

- other forms - according to the relevant ČSN

#### 3. Characterize the seams

A: Easily disassembled joints by interlocking straight grooves (teeth, tongues) formed on the parts to be joined.

#### 4. Characterize the pressed joints

A: Hard (ie immovably connected during operation) joints to be dismantled according to the principle of permanently elastic pre-stressing of the parts to be joined by overlapping in their contact surface (arbitrary shape).

#### 5. Characterize the elastic joints

A: Machine parts (organs) whose main function is to absorb, store and recharge mechanical energy according to the principle of elastic deformation of the material.

### **Test for Lectures 9-12**

#### 1. Describe the function of the shafts

A: The shaft is a machine part with a cylindrical shape, with which rotary movements and mechanical work are implemented. The shaft may be equipped with gears, sprockets, pulleys, pulleys, impellers, clutches, brake holders and other rotating and non-rotating parts such as cams. Shafts can be divided into two groups depending on function and load - bearing shafts and moving shafts.

#### 2. Name the types of drive shafts

A: Depending on the method of use and shape, we divide the drive shafts into:

- Normal
- Hollow out
- grooved
- Crank
- Flexible

#### 3. Characterize plain bearings

O: slide bearings in which a lubricant layer (the so-called hydrodynamic wedge) is formed by the relative movement of the sliding surfaces (formation of a wedge gap). During acceleration and deceleration, therefore, so-called boundary friction occurs with the onset of the event. End of movement with dry friction.

#### 4. Characteristic and structural characteristics of bearings in rolling bearings

A: Rolling bearings with a rolling friction principle, which normally use a separately manufactured rolling bearing component

