Questions: Civil engineering 1st degree

1. Describe the material and construction solutions of the stairs.
2. Building partitions - requirements and technological solutions.
3. Foundation of the building - presented by types and solutions.
4. Types of shallow foundations - design principles.
5. Types of deep foundations - design principles.
6. Types and features of foundation soils - presented by types and determination of values.
7. Transport of heat and moisture in buildings - rules for establishing thermal and humidity comfort in rooms.
8. Discuss the problem of roof coverings of residential buildings.
9. Structural floors in buildings - requirements, material and construction solutions.
10. Loads in structures - methods of setting values and ways of applying them to models computing.
11. Types of wooden roof coverings.
12. Physicomechanical properties of building materials from the point of view of their applicability.
13. List and describe the factors determining the durability of buildings.

Structural Mechanic I – Exam questions **<u>Mechanika budowli I</u>**
1. Discuss the state of stress and strain at a material point.
2. Compare methods of solving statically indeterminate structures.
3. List and discuss assumptions of the linear theory of elasticity.
4. Methods of calculating displacements and relative displacements in structures.
5. Discuss the Force (Stiffness) Method.
6. Discuss the Displacement (Flexibility) Method .
7. Compare Force (Stiffness) and Displacement (Flexibility) Methods.
8. Discuss the usage of influence lines.
9. Using example explain usage of influence lines in statically indeterminate structures.
10. Explain the kinematic method of determining influence lines.
11. Discuss instability (Buckling) problems in structural analysis.
12. Dynamic properties of structures.

Questions: Reinforced concrete, Steel 1st grade

1. Discuss the issue of designing and construction of reinforced concrete columns.
2. Discuss the issue of designing and construction of reinforced concrete beams.
3. Discuss the issue of designing an element due to shear force.
4. Reinforced concrete elements eccentrically stretched - mechanics equations in the cross-section.
5. Discuss the issue of designing and construction of one way reinforced concrete slabs.
6. Discuss the conditions determining the anchorage length of reinforcing bars in reinforced concrete elements.
7. Monolithic reinforced concrete stairs - designing and construction.
8. The approach to designing of reinforced concrete feet.
9. Deflections of RC elements - calculation method.
10. Discuss the problem of losses of prestressing force in prestressed concrete structures.
11. Differences between post-tensioned concrete - and prestressed concrete.
12. Bolted connections - types and principles of their design.
13. Principles of designing steel columns.
14. Principles of designing steel beams.