I. Draw the phase diagram of a biner solid solution. (10 points)

II. Give the definition of the next parameters or phenomena: (5x3 points)

    a./ electro-negativity:

    b./ Schottky defect:

    c./ triple point:

    d./ metal compound

    e./ degree of polymerization

III. How large is the pressure inside a He gas container at 25 C^0 temperature, if the volume of the container is 0.5 m^3, and the mass of the He in it is 60 g? (10 points)

IV. Explain the next equation: (5 points)

$$\delta = \frac{0{,}61 \cdot \lambda}{n \cdot \sin \omega}$$

V. Types and properties of thermotropic liquid crystals (10 points)

VI. Types of deformations. (10 points)

VII. Resilience and elastic strain recovery. (10 points)

VIII. Linear thermal expansion. (10 points)

IX. Lever as a simple machine. (10 points)

X. Calculate the stress if the force is 10 N and the diameter of the circular surface is 5 cm! (10 points)