



Student:

Year:

Date:

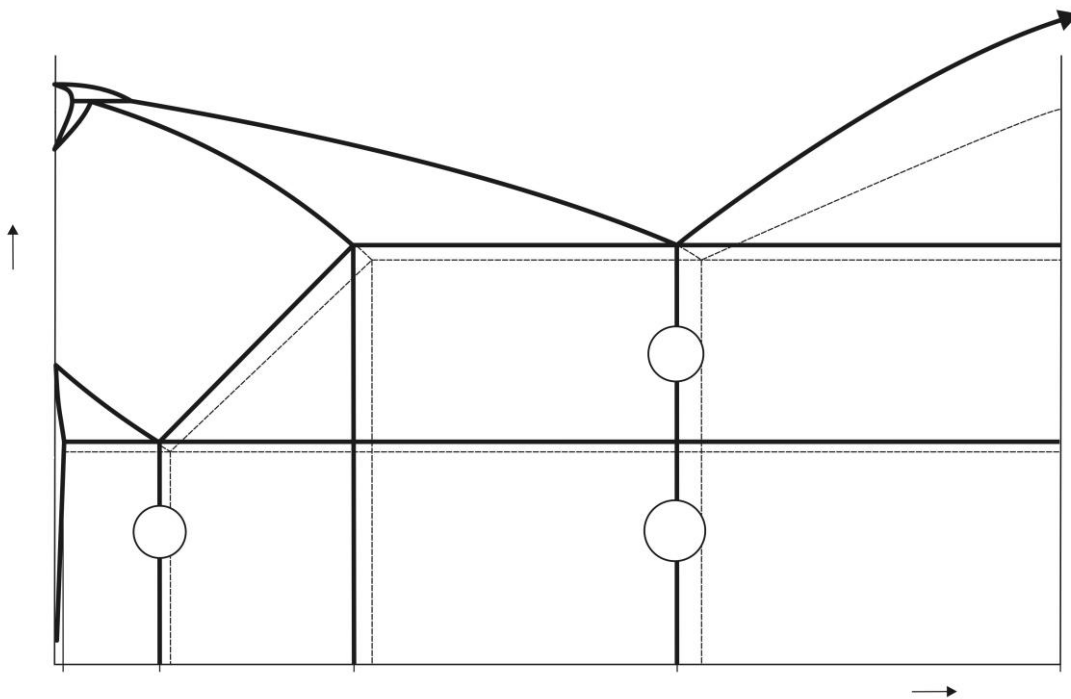
Teacher:

Program:

- a) Comparison of stable and metastable phase diagram.
- b) Metallographic evaluation of graphitic cast irons.
 - Evaluation of graphite microstructure according to ISO 945-1
 - Microscopy imaging
- c) Mechanical properties of gray cast iron.

Task 1:

Fill the phase diagram Fe-C (temperature, carbon content, structures). Designate the area, where graphitic cast irons crystalize. Explain the differences between metastable and stable phase diagram.



Task 2:

Define equilibrium phase structures: graphitic and white cast irons. Describe formation of ferritic and pearlitic matrix.

Task 3:

Examine the given metallographic samples of cast irons with usage of light microscope. Draw their structures schematically and identify structural components.

<i>Sample #:</i>	<i>Sample #:</i>
<i>Magnification:</i>	<i>Magnification:</i>
<i>Structure:</i>	<i>Structure:</i>

Task 4:

Evaluate the graphite microstructure of the given microphotograph according to standard ISO 945-1, describe the notations.

Task 5:

For the gray cast iron of the given chemical compound, calculate eutectic saturation degree S_e and with help of empiric formulas, determine the yield strength R_e and hardness according to Brinell.

Conclusion: