

# CIV-E4050 Prestressed and Precast Concrete Structures

## Examination 15.12.2020 (remote examination using My Course)

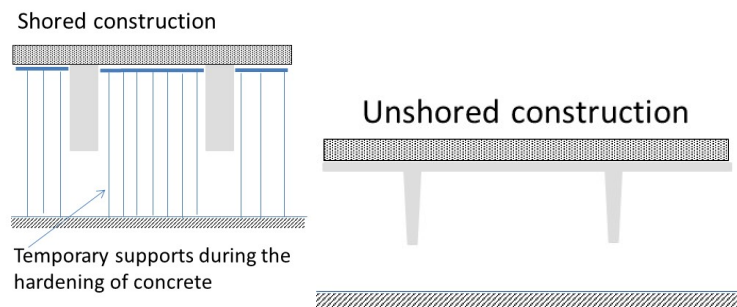
*A precondition for the participation in the examination is the fulfilment of compulsory parts of the course in the autumn 2020 or earlier.*

### Question 4

This question is to be answered using the online option of the assignment within the period given

4. Answer the following questions. (altogether 8 p )

- a) The figure below represents two main types of concrete composite structures. As the composite action is often based only on the bond between concrete parts cast at different times, the verification of the existence of composite action is useful to make nondestructive methods. Explain how the composite action can be observed by following the deflection of a composite beam during and after its construction (2 p). Explain if the deflection history also reveals if the construction method used has been shored or unshored. (2 p)



- b) The figure below represents a frame with a posttensioned beam. Explain the effect of prestressing on the columns (2 p) and the effect of the columns on the prestressing of the beam. (2 p)

