

Rak-43.3301 Repair Methods of Structures I (4 cr)

Please write in every paper: -the name and the number of the course
-the date of the examination
-your name and the student number
-the name of the department and the class of studies

Note: No literature allowed in the examination!

Answer shortly and concisely!

1. a) **How would you repair in principle concrete balcony structures of block of flats in the case where zone of carbonation has reached reinforcement bars in the concrete balcony structures, and concrete is highly frost weathered in the outer surface of the concrete balcony structures?**
(3 p.)
- b) **How would you repair in principle a façade plastering painted with organic or inorganic coating if a part of the plastering has totally fallen off? The extent of the damaged area covers 25 % of the façade both with organic and inorganic coating.**
(3 p.)
2. a) **Your task is to make a condition survey to a block of flats with concrete panel facades made in 1978. In this case what are the available non-destructive research methods for reinforced concrete to examine the condition of façades, what kind of samples can be taken and which are the properties available to determine of those samples?**
(2 p.)
- b) **What parts should be consisted to the good condition survey report of rendered structures and what is the main content in that?**
(2 p.)
- c) **Describe corrosion reactions of reinforcement steels for concrete.**
(2 p.)
3. a) **Describe stages of a condition survey of a building damaged by moisture and mould growth.**
(2 p.)
- b) **What might be the reasons for a decision to make a condition survey to a building that is suspected to be damaged by moisture and mould growth?**
(2 p.)
- c) **What are the available measurements during a condition survey of a building damaged by moisture and mould growth?**
(2 p.)
4. a) **Give diverse range of course feedback and ideas for the further improvement of the course?**
(2 p.)
- b) **Prepare a table based on systematic durability planning (assignment of the course) in the following case: deformation and cracking of concrete façade.**
(2 p.)
- c) **Prepare a table based on systematic durability planning (assignment of the course) in the following case: frost deterioration of reinforced concrete balcony structure inland.**
(2 p.)