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**BTECH**  
**(SEM VI) THEORY EXAMINATION 2021-22**  
**REPAIR AND REHABILITATION OF STRUCTURES**

**Time: 3 Hours****Total Marks: 100****Note:** Attempt all Sections. If you require any missing data, then choose suitably.**SECTION A****1. Attempt all questions in brief.****2\*10 = 20**

Qno	Questions	CO
(a)	Differentiate between repair and rehabilitation.	1
(b)	How physical inspection of damaged structure is conducted?	1
(c)	How durability of concrete structures can be judged?	2
(d)	Mention the difference between thermal conductivity and thermal diffusivity of concrete structures?	2
(e)	Explain the role of accelerators and retarders in concrete.	3
(f)	What is dry pack?	3
(g)	Define jacketing with figure.	4
(h)	List the applications of bacterial concrete.	4
(i)	List the steps to be considered during demolition of any structure.	5
(j)	Mention the role of sensors in construction industry.	5

**SECTION B****2. Attempt any three of the following:****10\*3 = 30**

Qno	Questions	CO
(a)	Tabulate different defects, their cause and precautions to be considered at construction site?	1
(b)	Why quality assurance for structure is needed? Explain the components of quality assurance for building.	2
(c)	Explain in detail different types of special mortars.	3
(d)	Explain with a clean figure how do you improve the load carrying capacity of beams?	4
(e)	Explain in details the different techniques used to demolish any structure?	5

**SECTION C****3. Attempt any one part of the following:****10\*1 = 10**

Qno	Questions	CO
(a)	Explain in detail the different stages of condition survey.	1
(b)	Define maintenance? Explain the classification of maintenance work for any structure.	1

**4. Attempt any one part of the following:****10 \*1 = 10**

Qno	Questions	CO
(a)	With chemical equations, explain the mechanism of corrosion.	2
(b)	Explain the effect of permeability on concrete structures.	2



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5. Attempt any *one* part of the following: 10\*1 = 10

Qno	Questions	CO
(a)	Define Ferro cement. List the materials used in Ferro cement. Explain its properties and applications.	3
(b)	Explain different steps for repairing of cracks in building by using epoxy injection?	3

6. Attempt any *one* part of the following: 10\*1 = 10

Qno	Questions	CO
(a)	Explain in detail how the structure is affected by: <ul style="list-style-type: none"><li>• Marine Exposure</li><li>• Fire</li></ul>	4
(b)	Draw a flow chart to classify the repair evaluation procedure for concrete structures	4

7. Attempt any *one* part of the following: 10\*1 = 10

Qno	Questions	CO
(a)	Define sensors? Explain in detail the role of sensors used in any structure?	5
(b)	Explain in detail the hurdles faced by an engineer to employ health monitoring technique on any structure?	5