

B. E. CONSTRUCTION ENGINEERING 4TH YEAR 2ND SEMESTER - 2022**SUBJECT: Repair and Rehabilitation and Maintenance of structure**

Time : Four Hours

Full Marks : 35

Part I

	Question No.		Marks
CO1 [07]	Q1.	Discuss the different causes of distress and their effects on structures.	07
CO2 [14]		Answer any two from question (2), question (3) and question (4) in this block	
	Q2.	a) Explain how the plastic shrinkage crack develops. b) What are the different measures that can be adopted to avoid plastic shrinkage crack?	07
	Q3.	Explain the carbonation and it's effect in concrete structures. How the depth of carbonation is assessed?	07
	Q4.	Write a short note on alkali aggregate reaction in concrete.	07
CO4 [14]		Answer any two from question (5), question (6) and question (7) in this block	
	Q5.	Write a short note on cement grouting technique applied in repair of concrete structure.	07
	Q6.	Describe the abrasion methods of surface preparation.	07
	Q7.	a) Describe the "Dry Mix" process of shotcrete. b) Write a short note on rebound in case of shotcreting	07

B. Construction Engineering 4th Year 2nd Semester Examination 2022
REPAIR, REHABILITATION & MAINTENANCE OF STRUCTURE
Part II

Use Separate Answer Script for Each Part

Answer All Questions. Maximum Marks is 35
Answer should be to the point and explained with Neat sketches

1. a) What are the common faults in relating to concrete construction. 5
- OR**
- b) Discuss Cold Joints and Segregation in construction of concrete structures. 5
[CO1 & CO2]
2. a) What are the principle and types of Ultrasonic pulse velocity test in concrete 6
- b) Discuss the effect of the following on the of UPV test result on concrete
- I. Surface condition & Moisture content,
 - II. Stress level and
 - III. Close presence of Reinforcement
- 3 X 3 =9
[CO3]
3. a) What are the advantages and disadvantages of Non-destructive Test of Concrete. 5
- b) Discuss the Principle and Objective of Schmidt Hammer Test in Concrete. 5
- c) Discuss the effect of Carbonation & Moisture Content on the result of Hammer test 5
[CO3]