

B. Construction Engineering 4th Year 2nd Semester Examination 2023

REPAIR, REHABILITATION & MAINTENANCE OF STRUCTURE

Part I (of two)

Use **Separate Answer Script** for Each Part

Answer any Two Questions. Maximum Marks is 50

Answer should be **to the point** and explained with **Neat sketches**

1. a) Distinguish between **Repair, Rehabilitation and Retrofit** of Structures. 5
b) What are the **common distresses in concrete** construction 5
c) What are the advantages and disadvantages of **Non-destructive Test** of Concrete 5
d) Discuss the Principle and Objective of **Schmidt Hammer Test** in Concrete. 5
e) Discuss the effect of **Carbonation & Moisture Content** on Hammer test result 5
[CO1 & CO2]

2. a) What are the Objective and Principle of **Ultrasonic pulse velocity test** in concrete 7
b) Discuss **different types of ultrasonic test** and their **application** 6
c) 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 4 = 12
[CO3]

3. a) What are the different **causes of corrosion** in reinforced concrete structures? 5
b) Discuss **the mechanism of corrosion** in Reinforced concrete and its effect. 5
c) What are the **repair** techniques for rehabilitation of corrosion damaged concrete? 5
d) What are the different **preventive measures of corrosion control** ? 5
e) Discuss the significance of **5C concept for Corrosion Resistance** of Concrete 5
[CO4]

B. E. CONSTRUCTION ENGINEERING 4TH YEAR 2ND SEMESTER - 2023**SUBJECT: Repair and Rehabilitation and Maintenance of structure**

Time Three Hours

Full Marks : 50

Part II

	Question No.		Marks
CO1 [10]	Q1.	Briefly discuss the different factors that influences the selection of repair materials.	10
CO2 [10]	Q2.	Write a short note on any one of the following i) Sulphate Attack on concrete. ii) Alkali aggregate reaction.	10
CO4 [20]		Answer any two from question (3), question (4), question (5) and question (6) in this block	
	Q3.	Discuss the different steps involved in patch repair of concrete structures.	10
	Q4.	Discuss the following i) Application of rust removing chemicals. ii) Micro-concrete.	10
	Q5.	Write a short note on application of APP membrane.	10
	Q6.	Write a short note on grouting with low viscous epoxy compound.	10
CO5 [10]	Q7.	Describe the process of underpinning by continuous strip foundation.	10