

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2025***Third Semester**Construction Engineering and Management***PCNE2416 – Maintenance, Repair and Rehabilitation of Structures***Regulations – 2024**Duration : 3 Hrs**Maximum : 100 Marks***PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Define rehabilitation.	L1	1	2
2.	Mention the causes of deterioration.	L2	1	2
3.	State the importance of 'coefficient of thermal expansion' with respect to strength of concrete.	L2	2	2
4.	List the effects due to corrosion.	L1	2	2
5.	What is special concrete? Give examples.	L1	3	2
6.	Identify the properties of epoxy bonding agents.	L2	3	2
7.	Outline the uses of corrosion protection techniques.	L1	4	2
8.	Recall the importance of structural health monitoring.	L1	4	2
9.	Write the causes of corrosion in embedded steel within concrete structures.	L2	5	2
10.	What does an external steel plate play in the shear strengthening of concrete beams?	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Explain the facets and various importance of maintenance in rehabilitation of structures.	L2	1	8
	ii Compare preventive maintenance and routine maintenance with an example.	L2	1	8
	Or			
	b Summarize the different non destructive testing techniques used in investigation for repair works in concrete structures.	L2	1	16
12.	a How quality assurance plays an important role in construction industry? Also explain the various operations in quality assurance system.	L1	2	16
	Or			
	b i List the various causes of cracks in buildings.	L1	2	8
	ii Discuss the effect of temperature on concrete.	L1	2	8
13.	a Describe the various types of repair materials and criteria for selecting the materials in structural rehabilitation.	L2	3	16
	Or			
	b Explain the different types of grouting materials used in structural rehabilitation.	L2	3	16

14.	a	Identify and explain the various methods for protecting concrete to enhance the durability of structures.	L3	4	16
		Or			
	b i	What is the role of inhibitors in resisting corrosion in reinforcement?	L3	4	6
	ii	Develop the various applications of cathodic protection techniques.	L3	4	10
15.	a	Classify and discuss the various methods of crack repair carried out in structural rehabilitation.	L4	5	16
		Or			
	b i	Illustrate the reinforced cement concrete jacketing methods used for rehabilitation of concrete structures.	L4	5	10
	ii	List the factors considered for flexural strengthening in existing structure.	L4	5	6