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**GIET UNIVERSITY, GUNUPUR – 765022**  
M. Tech. (Third Semester) Examinations, December – 2022  
**MPECT3012 – Maintenance and Rehabilitation of Structures**  
(Construction Technology And Management)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

**PART – A****(2 x 10 = 20 Marks)****Q1. Answer all questions**

	CO#	Blooms Level
a. What is meant by rehabilitation?	CO1	K2
b. Define the term restoration.	CO1	K2
c. Define repair in a structure.	CO1	K2
d. What are corrosion promoters?	CO2	K2
e. What are corrosion inhibitors?	CO2	K2
f. What is meant by delamination?	CO2	K2
g. Classify the damage based on preliminary investigation.	CO3	K2
h. Explain the Pull-out test with figure.	CO3	K2
i. What are underwater repairs? Mention its special features.	CO4	K2
j. What are the various types of surface coatings?	CO4	K2

**PART – B****(10 x 5 = 50 Marks)**Answer ANY FIVE questions

	Marks	CO#	Blooms Level
2. a. What do you mean by deterioration? Explain the mechanism of deterioration in concrete structures?	5	CO1	K2
b. Discuss in detail the various factors responsible for deterioration.	5	CO1	K2
3.a. Discuss in detail various construction stage defects & their preventive measures?	5	CO1	K2
b. What are the various pre-construction stage damages and how can it be rectified?	5	CO1	K2
4. a. Explain in detail cathodic corrosion protection, electrochemical chloride extraction, galvanic protection system. Suggest its suitability depending on the problem.	5	CO2	K2
b. Explain in detail the behavior of concrete at various temperatures when it is subjected to fire.	5	CO2	K2
5.a. Write about the embedded metal corrosion and tolerable crack widths to avoid the rebar corrosion.	5	CO2	K2
b. Write in detail about the factors influencing the cracking and spalling and mention regarding C/D ratio.	5	CO2	K2
6. a. Give a brief description about the factors that influence the investigation plan.	5	CO3	K2
b. What are the various aspects that will be covered during inspection of damaged buildings?	5	CO3	K2
7.a. Elaborate the factors influencing electrical resistivity measurements.	5	CO4	K2
b. What is the role of NDT in qualifying the structure after retrofitting?	5	CO4	K2
8. a. Discuss the various types of blanket repair techniques.	5	CO4	K2
b. Enumerate the different methods available for repairs of concrete works. Discuss the any one in detail.	5	CO4	K2

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