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**MANIPAL INSTITUTE OF TECHNOLOGY**  
**MANIPAL**  
*(A constituent unit of MAHE, Manipal)*

**II SEMESTER M.TECH. (CIVIL ENGINEERING)**

**END SEMESTER EXAMINATIONS, APRIL/MAY 2019**

**SUBJECT: MAINTENANCE AND REHABILITATION OF STRUCTURES [CIE 5236]**

**REVISED CREDIT SYSTEM**

**(02 / 05 / 2019)**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

Q. No		Marks	CO
1A.	Explain predictive based maintenance. List any two advantages and disadvantages of preventive and corrective maintenance.	5	1
1B.	Discuss the mechanism behind alkali aggregate reaction and carbonation.	5	4
2A.	Describe any two inspection method for diagnosing strength of concrete.	6	2
2B.	Explain form and pump method of application of repair material with a neat sketch.	4	3
3A.	Compare anodic and cathodic inhibitors and their mechanism of action.	5	4
3B.	Distinguish between surface treatment and integral damp proofing with examples	5	4
4A.	Explain any two methods of underwater concrete placement. Describe the rip rap method of scour protection with neat sketch	6	5
4B.	Discuss how steel and concrete behave towards fire damage.	4	4
5A.	Differentiate between conventional and performance based approach of seismic retrofit	3	4
5B.	With explanation list the various causes of deterioration of underwater concrete structure.	7	5