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**MANIPAL INSTITUTE OF TECHNOLOGY**

MANIPAL

(A constituent institution of MAHE, Manipal)

**II SEMESTER M.TECH. (CONSTRUCTION ENGINEERING & MANAGEMENT)**

**END SEMESTER EXAMINATIONS, APRIL/MAY 2018**

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

**REVISED CREDIT SYSTEM**

**(25/ 04/ 2018)**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

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

Q.No		Marks
1A.	Illustrate the theory of Bathtub curve. Differentiate between breakdown maintenance and predictive maintenance with examples.	4
1B.	Briefly explain any three principles of maintenance management	6
2A.	Explain any two Non-destructive test for diagnosis of concrete deterioration	4
2B.	Describe any three chemical test to identify the concrete deterioration	6
3A.	With reason explain the action of any three bonding aid used in repair of concrete and list their features.	6
3B.	Describe the action of shrinkage compensated concrete and fiber reinforced concrete used in repair work of distressed concrete structure	4
4A.	Describe any three repair methods by which corrosion of reinforcement in concrete is arrested	6
4B.	Explain the physical and chemical methods of repair of Damp proofing course	4
5A.	With reasoning explain the various precautions to be taken in preventing defects due to painting	4
5B.	With sketch explain the various environmental exposure-zones in underwater structure. Also describe the various environmental conditions contributing to the degradation of Underwater bridge structure.	6