



IV SEMESTER B. TECH END SEMESTER EXAMINATIONS, APRIL 2018

SUBJECT: OE-I CORROSION ENGINEERING [MME 3281]

REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Draw neat sketches where ever required.

- 1A. Why corrosion of materials is termed as “Extractive metallurgy in reverse”? Can you explain it? 03
- 1B. Explain clearly the mechanism of General corrosion. 03
- 1C. Why do we measure corrosion rate? Is corrosion rate measurement required for the study of mechanism of corrosion? Comment. 04
- 2A. Why engineers consider Pitting, as a very dangerous form of corrosion? Explain. 03
- 2B. Explain the term “Polarization”. Discuss its significance in corrosion engineering. 03
- 2C. Which type of corrosion results due to the combined effect of cyclic stress and corrosion? List and explain the measures that can be taken to prevent this type of corrosion in materials. 04
- 3A. What are the different types of concentration cells formed? Explain any two types of concentration cells. 03
- 3B. What are the characteristics of anodic reactions? List some of the common anodic reactions in corrosion of materials. 03
- 3C. Which is the most commonly used reference electrode in corrosion measurement? Explain it with a suitable schematic representation. 04
- 4A. List the uses and limitations of Pourbaix diagrams. 02
- 4B. List and explain in detail any three types of inhibitors used in aqueous medium. 03

- 4C.** What are the requirements of a good corrosion rate expression? List. **02**
- 4D.** Explain with a neat sketch, the sacrificial anode method of cathodic protection provided in underground pipelines. **03**
- 5A.** Write a short note on classification of coatings used for corrosion protection. **02**
- 5B.** Explain clearly, how planned interval test is used for taking decisions on the duration of corrosion tests. **03**
- 5C.** List down the purposes of conducting the corrosion tests. **02**
- 5D.** How data recording is done in corrosion testing? List down the important data that appears in these records. **03**