



IV SEMESTER B. TECH END SEMESTER MAKE UP EXAMINATIONS, JUNE 2018

SUBJECT: OE - 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. How electrochemistry is related to corrosion? Are all corrosions electrochemical in nature? Elaborate. 03
- 1B. "Corrosion products deposited on the surface always increases corrosion in materials" Is this statement true? Discuss. 03
- 1C. List the beneficial applications of Galvanic corrosion? Explain with suitable examples. 04
- 2A. What do you mean by Pitting potential? Is it a constant for all corrosive systems? Explain its significance. 03
- 2B. Distinguish clearly between Activation polarization and Concentration polarization. List down the steps in activation polarization. 03
- 2C. What are the preventive measures taken by an engineer to combat corrosion that has occurred in an equipment due to potential difference? Explain. 04
- 3A. What are the characteristics of cathodic reactions? List some of the common cathodic reactions in corrosion of materials. 03
- 3B. With a neat sketch, explain the working of Hydrogen reference electrode. 03
- 3C. How do you distinguish a galvanic cell from an electrolytic cell? Sketch and explain the working of a galvanic cell. 04
- 4A. What are the characteristics of a Pourbaix diagram? 02

- 4B.** What do you mean by stray current? How do you overcome the stray current effect in cathodic protection? Explain with the help of a sketch. **03**
- 4C.** List the factors influencing the choice of material in an organization. Explain the importance of each of these factors in material selection. **02**
- 4D.** List any six rules followed by corrosionist in industries during design phase. **03**
- 5A.** Distinguish clearly between anodic and cathodic inhibitors. **02**
- 5B.** What are the different categories of corrosion tests used in organizations? Explain briefly. **03**
- 5C.** Write a short note on materials and specimen used for corrosion testing. **02**
- 5D.** What do you mean by aeration? Discuss its importance in corrosion tests. **03**