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Code No: 157SB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, February/March - 2022

ENVIRONMENTAL DEGRADATION OF MATERIALS

(Metallurgy and Materials Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions  
All Questions Carry Equal Marks

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1. What are the five types of environmental degradation? Explain them in brief. [15]
2. How do you classify corrosion? Explain the importance of corrosion studies and cost of corrosion in industry. [15]
- 3.a) What is the Nernst equation? Discuss its role in ion transport.  
b) How do you read a Pourbaix diagram? Discuss. [7+8]
4. Explain the terms Corrosion rate and Current density and mention their importance. [15]
- 5.a) Explain the mechanism of crevice corrosion.  
b) Explain the stress corrosion cracking. [7+8]
6. Explain about galvanic corrosion and various methods of its protection. [15]
7. Explain the Cathodic and Anodic protection for controlling the corrosion. [15]
8. Explain the degradation of polymeric materials and its prevention methods. [15]

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