

Roll No.

2038473(038)

**Dip. in Engg. (Fourth Semester)
EXAMINATION, 2021**

(Scheme : New) NITTR

(Branch : Metallurgy)

CORROSION ENGINEERING

Time : Three Hours]

[Maximum Marks : 70

[Minimum Pass Marks : 25

Note : Attempt any *seven* questions. All questions carry equal marks.

1. (a) What is Corrosion ? Write the expression of corrosion rate of a material with explaining the term corrosion rate. 5
- (b) Explain the mechanism of wet corrosion. 5
2. (a) Derive and explain Nernst equation. 5
- (b) Write down *five* factors, which affect the corrosion. 5
3. (a) Explain Galvanic corrosion. 4
- (b) Explain Pitting corrosion, its mechanism and its preventing methods. 6

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4. Explain in detail about intergranular corrosion and dezincification process. 10
5. What is Hydrogen Embrittlement ? Write *three* protective methods to reduce the hydrogen embrittlement. 10
6. What is the anodic and cathodic protection ? Explain in detail about cathodic protection. 10
7. What do you mean by Galvanization ? Write down also *four* metallic coating process excepting Galvanization. 10
8. Explain mixed potential theory. How is it useful for predicting about comparative corrosion rate between two materials ? Explain with the help of examples. 10
9. Write down the principle of electrochemistry and also explain passivity. 10
10. What do you mean by Selective Leaching ? Explain graphitization corrosion. 10