Unit 9 - Week 7

Assignment 6
Due on 2020-11-11, 23:59 IST.

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Instructions:
A) The marks that each question carries is marked against the question.
B) There can be more than one correct answer for a question.

1. Which of the following materials suffer crevice corrosion in sea water?
   - 104 stainless steel
   - Aluminum
   - Carbon steel
   - Brass
   - Titanium metal
   [No answer is incorrect]
   Score: 3
   Accepted Answers:
   304 stainless steel
   Aluminum

2. Predict the alloy having the highest pitting resistance
   
<table>
<thead>
<tr>
<th>Alloy</th>
<th>C</th>
<th>Cr</th>
<th>Ni</th>
<th>Mo</th>
<th>N</th>
<th>P</th>
<th>Cu</th>
<th>Fe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0.05%</td>
<td>1.5%</td>
<td>20%</td>
<td>22%</td>
<td>1%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>Balance</td>
</tr>
<tr>
<td>2.</td>
<td>0.01%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>Balance</td>
</tr>
</tbody>
</table>
   
   [No answer is incorrect]
   Score: 4
   Accepted Answers:
   Stainless steel

3. The following electrochemical parameters are less important for developing crevice corrosion-resistant alloys for a given application
   - Critical current density
   - Passivation potential
   - Total stress
   - Passive current density
   - Corrosion current density
   [No answer is incorrect]
   Score: 3
   Accepted Answers:
   Total stress
   Corrosion current density

4. Crevice corrosion and pitting corrosion growth of an alloy is mainly due to
   - Chloride levels of the pit and crevice
   - High hydroxides within the pit and crevice
   - High pH in concentration of the pit and crevice
   - Pitting potential drop within the pit and crevice
   - The exposed corrosive environment does not allow the alloy to passivate at all.
   [No answer is incorrect]
   Score: 4
   Accepted Answers:
   Chloride level of the pit and crevice
   High pH in concentration of the pit and crevice
   Pitting potential drop within the pit and crevice

5. Which of the following metal alloys suffer pitting corrosion in seawater?
   - 304 stainless steel
   - Aluminum
   - Carbon steel
   - Brass
   - Titanium metal
   [No answer is incorrect]
   Score: 3
   Accepted Answers:
   304 stainless steel
   Aluminum

6. The following electrochemical parameters is critical for developing pitting corrosion resistant alloys for a given application
   - Critical current density
   - Pitting potential
   - Repassivation potential
   - Corrosion potential
   - Corrosion current density
   [No answer is incorrect]
   Score: 3
   Accepted Answers:
   Pitting potential
   Repassivation potential
   Corrosion current density