Avua		M T W T F Page No.:  Date:	YOUVA
	CORROSIONA MATALAGADESTA 41 MOS	LBATMO)	
pMI	PLAT		
3 22/11	(orosion	1 44 1 1 1 1 1 1	
sanh o	e 2nd	- positive C	
Let robus	Conterol		
M	The state of the s	Visite advice V	
Later tons	(anna ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	antain and	
1211/2011	Cornosion can be defined as spo	maneous	-
The state of the s	destruction on deterioration of a m	retal by	Chemical
	electrochemical on biochemical nea	chom.	
19 17 Kartakasa	Examples	-	
	Risting Ofinan adi-	MARCH MAN	
Bur M	4 Fe(s) + 302(g) -> 2 Fe 203 H2	) (s)	
- W.Sty	Termishing of vilver		
manada	4 Ag (s) + 2H, Sig) + O2(g) → 2A  5 cales on copper	925+2H2	)(e)
large	2 Cu (s) + 4,0 (e) + 0, cg) + (0, cg)	→ (U2(OH)	. (0 <sub>3</sub> (s)
	Cornonion can be viewed as the	. nevery	
	powers of exteractive metallurgy.	= -	
	Metal. (orudation)		
(Stat-	her energy (State of lower)  [c. gained] (State of lower)	Energy.	-
	one H20,0, oxcidation.		
	Importance: Numan lije & sajety, Cort of	Column	
	Conservation of materials, occidence 1	nterest	<u>n</u>

4.25	M T W T F S S	
MARCA	YOUVA Date:	
	CONSEQUENCES DE CONSOCIANA	
	CONSEQUENCES OF CORROSION	
	Maintenance and operating costs	
·	Plant shutdowns, loss of production	
•	Contamination and lon of valuable products	
	Effects on safety.	
-	Los of awheric value	
<u> </u>	· Loss of technically imp surface properties.	
-4.0	don q efficiency	
	. H. C. welle. John is donned.	
	Courasian	
0.00		
	pny corronion Wet connonion (chemical) (Electrochemical)	
-	(chemical) (Electrochemical)	
	moral formation for the first the fi	
	204 Contactor	
	DRY CORROSION STATES VALVOISORSO) (i)	
	occurs due to the direct chimical reactions b/w	
	the environmentat and the metals/alloys.	
	Presence of an electrolyte is not at all energh	al_
	presence of an according to is	
	Joss cornonion to occur.	
	James Aga as a lines protection and an	
11	Types. Osvidation (due to san with 02)	
1, 1, 1	All Comments of the second of	
	Other gases (CO2, M25, SO2, X2 etc.)	
	diquid metal	
	December a spector described as contraction	
Jer 1	and a star and the comment of the start of the start of	
	diversity of the duck profit of a selection	/
	Anto the water phone.	

Commence of the Commence of th	200	Lan eggs	Page No.:  Page No.:  VOUVA
		) OXIDATION CORROSION TO TO	12.50(8)
,- -		When metals are attacked by don	y oxygen.
		Metal + origin -> Metal oride (con	o sion product)
_	<u> </u>	Non posous, adherent, Marle, prot	ective, combinuous
_		Jilm.	
_		techniques singues neighbor	200
_		Nature of the bruide film decides	subsequent
_		y a stable film is formed.	
_		eg: Al, Sn, Ph and Co.	
	•	Unstable metal film decomposes	back into
		metal and origin. eg Ag, Av, Pt	
	•	Volabile film layer volatizes as	
		Jonmed, thereby accelerating corron	
		eg MoO3.	
			100 Y99
	ii)		
	<u>G i\d</u>	Due to some gans 50, (1, 102)	H2S
	,	Depends mainly on the chemical	affinity
	valiae	between the metal and the gas	involved.
		Eg: dry 6/2 g attacks sieven n	netal and
_		Journs Agel as a thin protective	e and non
		posous layer on the metal.	As a gresult
		of this protective layer on the m	etal norface,
		the intensity of corrosion decrease	us. N
	i:: \	1 matal	refort.
		& LIQUID METAL CORROSION	
		Occurs when a molten liquid is a	in himmously pan
		on a solid metal surjace on on alloy. T	his is due to
		dinguision or of it on du so penteration o	molten liquid
		into the metal phase.	

AV7	Page No.: Date:	γουνλ
		-
	WET CORROSION MELLIALOSM	
<u> </u>	This occuer due to the existence of sepera	te
1	anodic and cathodic areas, between which	b
	current flows through the conducting	soln.
	At anoch.  ANODE	
(33)	M(s) -> M + De	V
64	At cathode.	
	i) Mydrogen wolution.	the
	ii) Alsorption of brugen depending upon nature of corrosive environment.	
	At arbacuic witer; and 24,000 + 10 - + 400 com +	7 6
	Fe montage elected	
-13	M -> Mn+ + ne	
130 4 6 7	Fe -> Fet + 2e modernie - 31 of modernie	
( Alterial)		
	CATHODIC RXN.	
i)	Mychogen Wolution:	on solium)
P	2H+ (ag) + 2e -> H2 (decreated & acidic H2 liberation along with OH ions forma	hom.
Janes 1	21/20+2e -> 1/2(g) +20H (aq) (dealer dealer ated	& neutral)
j:)	Reduction of orygen in neutral medium.	
	0, (ag) + 21,0 + 40 -> 40H (ag) Caesate	13
hand	02 (ag) + 21/20 + 4e -> 40H (ag) (aesated	(al)

Cathoche electron flow Amoch action by the each on reduces oxygen causes pitting of Fe continue on the continue of the continu			Page No.: Date:	YOUVA
At anoclic ristes: [Fe -> Fe + 2e ] X2.  At cathoche reaction.  Or test permation of the permation of the control of the contr				
At anodic notes: [Fe \rightarrow Fe^t + 2c \] \tag{2 \tag{2} \tag{4} \				JW 3
Fe <sup>2+</sup> + 20 $\vec{n}_{(aq)}$ $\rightarrow$ Fe(ON) <sub>e</sub> In presence 2 enough oxygen, ferrous hydroxide or with maintain and oxygen.  4 Fe(OH) <sub>2</sub> + 2 $\vec{n}_{2}$ O + O <sub>2</sub> $\rightarrow$ 2 [Fe <sub>2</sub> O <sub>3</sub> 3H <sub>2</sub> O] (Yellow or	Sels.	At anodic nites: [Fe -> Fe + 2e ] x  At cathodic nites: D(g) + 2H2O(x) + 4e -  Overall reaction.	nyon Fer	Electrochem cellaction du hy the ener Douidate continues The corres Mocens
Fe <sup>2+</sup> + 20 $\vec{n}_{(aq)} \rightarrow \text{Fe}(ON)_2$ In presence 2 enough oxygen, ferrous hydroxide or with mointure and oxygen.  4 Fe (OH) <sub>2</sub> + 2 $\vec{n}_{2}$ O + O <sub>2</sub> $\rightarrow$ 2 [Fe <sub>2</sub> O <sub>3</sub> · 3 $\vec{n}_{2}$ O] (Yellow or		Reactions to the Journation of hydri	ated Je	vic oxide
m presence of enough oxygen, ferrous hydroxide or with mointain and oxygen.  4 Fe (OH)2 + 2H2O + O2 -> 2 [Fe2O3 3H2O] (Yellow or	-	Fe2+ + 20Fing) -> Fe(ON)2. MXA	HOOM	TA
	SE CAY	In presence of enough oxygen ferror	us hyd	oscicle mean
	sd.	with mointure and orgin.	Hs are	
The supply of oxygen is limited the corviosion product may be black anhydrous.  GFe (OH), + O2 -> e [Fe3O4.3H2O] (Black our	000	4 Fe (OH)2 + 2 H2O + O2 -> 2 [ Fe, 03 - 31	1,0] (Y	ellow our
Fe (OH), + O2 -> e [Fe3O4.3H2O] (Black ru		If the supply of oxygen is limited.	the cor	viogan
	25.	product may be black anhyd $6 \text{ Fe} (0 \text{ H})_2 + 0_2 \longrightarrow 2 \left[ \text{Fe}_3 0_4 \cdot 3 \text{ H}_2 \right]$	D] (Be	ack rust
The state of the s				