

Subject - NCM

Assignment - 2

Q.1 Calculate the MRR when copper is electrochemically machined under following conditions:-
 $V = 18 \text{ volt}$, $I = 500 \text{ A}$, $\rho = 7.8 \text{ gm/cm}^3$.

Q.2. Electrochemical machining is performed to remove material from an iron surface of $20 \text{ mm} \times 20 \text{ mm}$ under the following conditions:-
 Inter electrode gap, $l = 0.2 \text{ mm}$
 Supply voltage, $V = 12 \text{ Volt}$
 Specific resistance of electrolyte, $\rho_s = 2 \Omega \text{ cm}$
 Atomic weight of Iron, $A = 55.85$, Valency of Iron, $Z = 2$
 Faraday's constant, $F = 96540 \text{ coulombs}$
 Find MRR..

Q.3. Calculate MRR of Nimonic alloy (Co-Ni-Cr) is

Element	%	Atomic wt	Valency	} is electrochemically machined under following conditions.
Co	18	58.93	2	
Ni	62	58.71	2	
Cr	20	51.99	6	

$I = 500 \text{ A}$ & density = 8.28 gm/cm^3

Q.4. Find MRR, if 18-4-1 HSS is machined by ECM process using 500 A current. Following table can be used for calculations:-

Element	At. wt.	Valency	Density (g/cm^3)
Fe	56	2	7.8
W	184	6	19.5
Cr	52	2	7.2
V	50	2	7.5