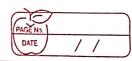
	$-g/L \alpha = 0$	
	PAGE NO.]	
	Character Dumaricals	
	Chemistry Numericals	
>	Equivalence of (a(0)	
	A Molec Wt = 100	
	→ Eq. Wt = 50	
	V	
	Conversion factor = 100	
	Molar mass of hardness	
	causing substance	
	Equivalence of = Amount of × Conversion	
	(aCO3 HC substance factor	
	(ppm)	
33	= Amt of HCS x 100	
	Molor mass/molecular set	
	of HCS	
	Temporary Hardness = Sum of Temp [CO3 dTm]	
	((grbonote Hardness)	
\rightarrow	- EDTA	
0	5HW contains - CaCO3 in ml distilled water.	
2	- ml of sol requires - ml of EDTA for tit.	
(3)	- ml of Hard Water requires - ml of FDTA,	
	After boiling, filtering it requires my of FDTA	
	After boiling, filtering it requires _ ml of FDTA.	
501 0	1 1/4	
501" 0	1 litre contains _ gm = _ × 103 mg	
	$\frac{1000 \text{ m}}{\text{contains}} = \frac{\text{gm}}{\text{gm}} = \frac{1000 \text{ m}}{\text{mg}}$	
A.	$ m = - \times 10^3 = - mg \text{ of } (aCO3)$	
	10 ³	
2	- ml EDTA required - ml SHW	
	- ml EDTA required - x - mg of Ca(O3	
	m = x $= x $ $=$	
	$\frac{1}{m} = \frac{1}{m} = \frac{1}$	
	Teacher's Signature:	



and the second s

3	- ml of Normal HW = _ ml of EDTA	
	= - x - mg of (a(0)3	
	$= - \times - mg \text{ of } (a(0)3)$ $= - \times - mg \text{ of } (a(0)3)$	
	LNHW	
	$\frac{1000 \text{ ml}}{\text{Total}} = \frac{1000 = \frac{1}{\text{mg}} L \text{ erppm}}{\text{Total}}$	
After filtering, Permanent. (Same or above)		
	1: 61 01 46 1	
	Lime Soda Method	
	Lime = 74 Temp (a+2 + 2 x Temp Mg+2+	
Requirement 100 Perm. (Mg+2 + Fe+2 + A1+3) +		
	CO2 + H+ +HCI + H2504 + HCO3+	
	NaHCO3 - Na A102 + OH-	
	All in terms of (aCO3 eq.	
1	× Vol. of water × 100 × 1 kg	
	7-purity 10°	
	Soda = 106 Perm ((a+2 + Mg+2 + Fe+2 + A1+2)	
e and a	Requirement 100 + H+ + HCI + H2SOL - HCO3 + OH + CO3	
	Alloin terms of (aCO3 eq	
	× Vol. of water × 100 × 1 kg	
	1. purity 106	
<i>W</i>	Temp (a+2 - ((a H(O3)2, (a(O3, Temp (a+2 H	
Street, Street	Temp Mg+2 - (Mg(HCO3)2, MgCO3, " Mg+2"	
27	Perm (a+2 - (a(12, (aSO4, (a(NO3)2, (a+2	
	Merm Mg+2 - MgCl2, MgSO4, Mg (NO3)2, Mg+2	
	Perm Fe ⁺² - FeSO ₄ , FeSO ₄ , H ₂ O, Fe ⁺² Perm Al ⁺³ - Al ₂ (SO ₄) ₃ , Al ⁺³	
	$HCO_3^ HCO_3^-$, $MaHCO_3$, $KHCO_3$	

~ →	Zeolite Numerical
	Hard Water Nacl Sol"
-	$H_{\text{cmg/L}} \times V_{\text{CD}} = W_{\text{cmg}} \times V_{\text{CD}} \times 100$
ANGO 13	H - Hardness of water
	V - Volume of woter
	W - Weight of Nacl
	V - Volume of Nacl
	-X-X-10000 = 8×10 ⁷ × 200 × 100=
	- 117 the second and the
	Le contoins 1500
	200 L Trantoins 150 x 200 a
	3×107 mg of NoCl
	H = 3 × 107 × 200 × 100
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	117×1006C
3	2:1 >1 61
	3^{-1} . No(1) $\rightarrow 100_g^{mL}$ contains 30_g .
	TOUCHE CONTAINS BUG.
→	(OD & BOD Numerical
	() omet
	(OD = (Vb- V6) × Normality of FAS × 8000
	Volume of water sample
	Teacher's Signature:

0.00	
$BOD = (DO_b - DO_i) \times ml$ after	dilution
ml befor	

Polymer Numericals

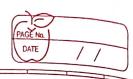
 $M_0 = \Sigma N_i M_i = \Sigma W_i$ ΣN_i

 $N_i = W_i$ $M_0 = W_i$ M_i M_i

 $M_{W} = \sum N_{i} M_{i}^{2}$ $M_{W} = \sum (W_{A} N_{A})$ $\sum W_{A}$

 $PDI = M_{M}$ M_{0}

0.1°Fr = 0.07°C1 = 1ppm /1mg/L



	Mod 3
0	CCVINCV
	$GCV HCV = 1 \left[8080C + 34500 \left(H - 0\right) + 2240 S\right]$
	100
	NCV/LCV = GCV - [H X 9 x Steam Heat (587)]
	[100
-	
2	Proximate analysis
	7. Moisture = W1-W2 ×100
	Wi
	1. Volotile Mother = Wa - Wa x 100
	W
	7. Ash = W4 x 100.
	Wi
	Ultimate Analysis
	i) Determination of 1.C & 1.H
	7. Carbon = Increase in mass of KOH bulb x 12 x 100
	Mass of coal 44
	1. hydrogen = increase in mass of calls tube x 2 x 100
	Mass of coal 18
	ii) 1. Nitragen = (Vblank - Vsample) x NkoH x 1.4
	Moss of cool
No.	iii) 1. Sulphur = mass of Baso4 residue x 32 x 100
	Moss of coal 233
	Oxygen requirement for solid (oa)
	Make Table & calculate Total O2 required
	Jegyir Cg

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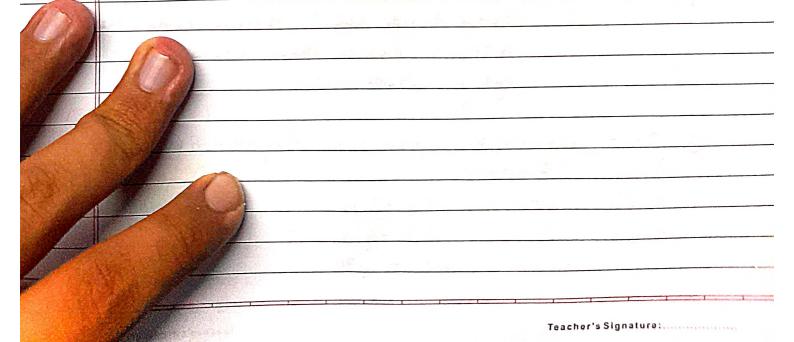


-				
	Flement	Multiplication	Quantity	Amount of O2
		Foctor	(in 1kg)	- 3 1
	Corbon	12/32	U	+ Amtx MF
	Hudrogen	16/2	- J	11
	Sulphur	32 / 32		<i>il</i>
	Nitrogen			_
	Ash		26 30	1 1
	Oxygen	- 1		1/
	CAGE			, 141

Total Amount = $\Sigma All ambs$ of Oxygen

100 kg Air Contoins = 23 kg Oxygen - kg Oxygen = - × 100 kg air

If excess oxygen supplied = ____ x120 kg air





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	Mod 4
0	Beer-Lamberts Law (UV)
	A = -log T A: Absorbance (No Unit)
_	A = + log 1 E: Molar absorptivity (dm 3 md - 1 cm-1)
	b: length of cell (cm)
	A = EbC C: Concentration (M)
	M: Molecular Weight
	ENOW = Earl X M T: Transmittance (No Unit)
	Note: Absorbs 10%.
N.C	Transmittance (T) = 90% = 0.9
	Absorbs 901/.
	Transmittance (T) = 10% = 0.1
(2)	IR - Theoretical Mode of Vibration
	For linear molecule = 3N-5 [sp] N: no. of atoms
	in a malecule
	For Non-linear molecule = 3N-6 [sp2/sp3]
~ -	all files and a second of the
 Eq.	linear: Carbon Monoxide ((0), HCN, C2H2, C2N2, NO, C52, HCl,
U	CC14, C302
Eq.	Non-linear: Water (H20), Methone (CH4), Carbon dioxide ((02)
	Sulfur dioxide (602) Nitrous oxide (N20)
	Nitrogen dioxide (NO2), Ozone (O3)
 	Hydrogen Sulfwide (H2S)
3	IR - Characteristic Absorption frequency (cm-1)
	1) Organic Functions
	Alcohol 0-H 3200-3600
	Alkane C-H 2850-3000
	-C-H 1350 - 1480

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	211-22-	
	Alkene (=C 16	20-1686
	Alkyne 210	10 - 2260
	Amine N-H 330	0 -3500
	Aromotic C=C 140	0-1600
	2) (arbony) ((=0)	
	· ·	
	(arbony) C=C 16-	10-1820
	Acid O-H 25	00 -3300
	Aldehyde = C-H 282	0-2850
	Ester C-0 100	0 -1300
	,	
	Fther (-0 100	00 - 1300
	Nitrile - CN 22	0 - 2260
	HOW to analyze IR Sp	ectrum
1	Is (orbony) present?	
2	If Present	If Absent
	Acid	Alcohols
	Amides	Phenols
	Ester	Amines
		Ethers
	Anhydride Aldehydes	
	Ketones	
3	Double Bonds Aromotic Rings	
4		
5	11 3	
	U	