KIITPOLYTECHNIC,BHUBANESWAR

LESSONPLAN
Session(2023-2024)

Discipline: Civil/Mechanical/Metallurgy	**Semester:2nd, Summer-2024**	**Name of the Faculty:** Dr. Ranjita P. Biswal (Asst. Professor) **Email ID:** ranjitafch@kp.kiit.ac.in
Subject: Engineering Chemistry, Theory-2(b)	**No.ofDays/week:**04	**StartDate:**29/01/2024 **EndDate: 14**/05/2024

Week	ClassDay	TheoryTopics
1st	1st	Discussionofsyllabusandsplittingoftotal mark
	2nd	Massandchargeofelectron,proton&neutron, Definitionofatomicmass andmass number,Findoutthee, p, nno.inanatomand ionDefinitionofisotopes, isobarsandisotoneswithexample
	3rd	PostulatesofRutherford'satomic modelandit'sdrawbacks
	4th	Bohr'satomicModel(postulatesonly)
2nd	1st	Doubt Clearing&PracticeClass
	2nd	Bohr-Buryscheme,Explainquantumno,Aufbau'sprinciple,Findout The(n+l) valueofsub-shell
	3rd	Hund'srule,Electronicconfiguration(uptoatomicno.30)andions
	4th	Whybondingoccur, definechemicalbond,typesofbonding Defineionicbond,explainit withtheformationofNaCl&$MgCl_2$.
3rd	1st	DefinecovalentbondwiththeformationofH_2,Cl_2,O_2,N_2,H_2O,CH_4
	2nd	Doubt Clearing&PracticeClass
	3dr	DiscusstheformationofNH_3,definedativebondwiththeformationof NH_4^+,SO_2,Arrhenius(Postulate&limitation),
	4th	PostulateofBronstedLowry&limitation
4th	1st	Conjugateacid-basepairwithexample,AmphotericnatureofH_2O. PostulatesofLewisconceptanddrawbacks

	2nd	Neutralizationofacid&baseandit'stypewithexample
	3dr	Definitionofsalt,typesofsalt(definitionwith2examples)conceptof acid-base.
	4th	Expressionoftheconcentrations(Molarity,Normality&Molality)with simpleproblems.
5th	1st	DescribePHofasolutionwithsimplenumerical
	2nd	Doubt Clearing&PracticeClass
	3rd	IndustrialapplicationofpHinsugar,textile,paperindustries
	4th	Sourcesofwater,softwater, Hardwater,typesofhardness(temporary& permanent)
6th	1st	Removalofhardnessbylimesodamethod(hot &coldlime-principle, process&advantages),advantagesofHotlimeovercoldlimeprocess.
	2nd	Doubt Clearing&PracticeClass
	3rd	Removal ofpermanent hardness byionexchangeresinmethod
	4th	Describelubricantandit'stypewithexamples&specificusesof lubricants(graphite,oils,grease)
7th	1st	Purposeoflubrication,Describefuel&it'stype, Choiceofgoodfuel, composition&uses ofDiesel,petrol
	2nd	Composition&uses ofKerosene,producergas,watergas, coalgas
	3rd	DescribeMonomer,Polymer,Homo-polymer,Co-polymer,Degreeof polymerizationwithexamination
	4th	Doubt Clearing&PracticeClass
8th	1st	DifferencebetweenThermosetting&thermoplastic, compositionand usesofpolyethene,poly-vinylchloride
	2nd	Composition&usesofBakelite,DefinitionofElastomer(Rubber),Natural Rubber(it'sdrawbacks)
	3rd	VulcanisationofRubber,advantagesofVulcanisedrubber overraw rubber
	4th	Doubt Clearing&PracticeClass
9th	1st	Pesticides,Insecticides,herbicides,Fungicides(Examples&uses),Bio fertilizers(Definition,examples&uses)
	2nd	Doubt Clearing&PracticeClass
	3rd	Describeelectrolytesandit'stypewithexample
	4th	Electrolysis(Principle&processwithexampleoffusedNaClandaq.

		NaCl
10th	1st	StateandexplainFaraday's1st&2ndlawofelectrolysis& mathematicalexpression.
	2nd	IndustrialapplicationofElectrolysis-Electroplating(Zinconly)Definition ofCorrosionandit'stypesAtmosphericCorrosion.
	3rd	Doubt Clearing&PracticeClass
	4th	Mechanismof rustingofIron.Waterlinecorrosion,protectionfrom CorrosionbyAlloyingofmetaland
11th	1st	GalvanizationProcess
	2nd	DefinitionofMineral,ores,ganguewithexample.Explainthedifference betweenoresandminerals.
	3rd	Generalmethodsofextractionofmetals,i)OreDressingii)Concentration(Gravi tyseparation, magneticseparation,Frothfloatation &leaching)iii)Oxidation(calcinations,Roasting)
	4th	Doubt Clearing&PracticeClass
12th	1st	iv)Reduction(smelting, Definition&examplesofflux,slag)
	2nd	v)Electrorefiningof themetal
	3rd	Describealloyandit'stype(ferro,nonferro&amalgum)withexample
	4th	Composition&uses ofBrass,Bronze,Alnico,Duralumin
13th	1st	Doubt Clearing&PracticeClass
	2nd	Hydrocarbons(saturatedandunsaturated),Aliphatic&Aromatichydrocarbons .(Huckle'srule).
	3rd	DifferencebetweenAliphaticandAromatichydrocarbons,IUPACsystemof nomenclatureof Alkane,Alkene,alkyne.
	4th	Alkylhalideandalcohol(upto6 carbons)
14th	1st	Differencebetweensaturatedandunsaturatedhydrocarbon,IUPAC systemof nomenclatureofalkanol,alkenolandalkynol
	2nd	Doubt Clearing&PracticeClass
	3rd	Usesofsomecommonaromaticcompounds(Benzene,Toluene, BHC,Phenol,Naphthalene,Anthracene& Benzoicacid)indailylife.
	4th	Doubt Clearing&PracticeClass
15th	1st	ExpectedQuestionsDiscussion&PracticeTest1
	2nd	ExpectedQuestionsDiscussion&PracticeTest2
	3rd	ExpectedQuestionsDiscussion&PracticeTest3

	4th	ExpectedQuestionsDiscussion&PracticeTest4