GANGA TECHNICAL CAMPUS

DEPARTMENT OF APPLIED SCIENCES AND HUMANITIES

LESSON PLAN

NAME: Ms Preetam/ Ms Vishakha

COURSE: DIPLOMA

SEMESTER: Second

SUBJECT: APPLIED CHEMISTRY -2

LESSON PLAN DURATION: 15 weeks (January to April 2017)

LECTURE: 3 Practical: 2

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC	PRACTICAL DAY	TOPIC
1	1	UNIT-1(Introduction)1.1 General metallurgical terms .		
	2	Metallurgical operations with reference to iron, copper and aluminium.	1	1. Gravimetric analysis and apparatus used in gravimetric analysis
	3	1.2 Manufacture of steel- Open hearth process.		
2	1	1.3 Alloys- definition and purpose of alloying,		
	2	Type of alloys – ferrous and nonferrous alloys	2	2. Determination of percentage purity of commercial sample of blue vitriol usin
	3	properties and applications of ferrous alloys.		Na2S2O3.
3	1	invar, nichrome,stainless steel, alnico .		
	2	non-ferrous alloys – brass, bronze, magnalium and solder.	3	3. Gravimetric estimation of moisture in the given coal sample (proximate anal
	3	REVISION OF UNIT 1		
4	1	2.1 Definition of corrosion, its types and factors affecting corrosion rate.		
	2	a) Dry (chemical) corrosion- Pilling Bedworth rule	4	4. Determination of percentage composition of volatile/non volatile matter in th
	3	b) Wet corrosion in acidic atmosphere by hydrogen evolution mechanism		coal sample
5	1	2.3 Definition of passivity in metals as per galvanic series		
	2	Corrosion control a) Metal coatings – Cathodic protection	5	5. Gravimetric estimation of ash content in the given coal sample (proximate a
	3	Cementation on Base Metal Steel –Application of Metal Zn (Sheradizing),Cr (Chromozing) and Al.		
6	1	b) Inorganic coatings – Anodizing and phosphating,		
	2	c) Organic coatings - use of paints varnishes and enamels	6	6. Determination of viscosity of given liquid using Redwood viscometers
	3	d) Internal corrosion preventive measures- alloying and heat treatment.		
7	1	REVISION OF UNIT 2		
	2	unit-3(Introduction)Definition of fuel	7	7. Determination of flash point of given lubricating oil using Able's flash point
	3	classification of fuels, characteristics of good fuel, relative merits (gas,liquid,solid)		apparatus
8	1	Calorific value-higher calorific value, lower calorific value,determination of calorific value of solid or liquid fuel using Bomb calorimeter		
	2	3.3 Coal - types of coal and proximate analysis of coal	8	8. To study the effect of metal coupling on corrosion of iron
	3	3.4 Fuel rating – Octane number and Cetane number, fuel-structural influence on Octane and Cetane numbers		
9	1	3.5 Gaseous fuels – chemical composition, calorific value		
	2	applications of natural gas (CNG), LPG, producer gas, water gas and biogas.	9	9. Detection of iron metal in the given solution of rust(solution of rust in HCl be
	3	3.6 Elementary ideal on – hydrogen as future fuels, nuclear fuels.		provided)
10	1	REVISION OF UNIT-3		
	2	.4.1 Definition of Lubricant and lubrication, type of lubrications –hydrodynamic, boundary lubrication with illustrative diagrams	10	REVISION OF ALL EXPERIMENTS
	3	4.2 Classification of lubricants –liquid lubricants, solid lubricants, semi-solid lubricants and synthetic lubricants with examples		
11	1	Properties of lubricant a. Physical properties –viscosity and viscosity index, cloud point and pour point, flash point and fire point, oiliness.		
	2	b. Chemical properties- total acid value or number (TAV or TAN), carbon residue, emulsification factor and iodine value	11	VIVA
	3	4.4 Designation of lubricating oils according to Society of Automotive Engineers		
12	1	4.5 Cutting fluids – applications of cutting fluids, types and the factors that govern the selection of cutting fluids		
	2	REVISION OF UNIT 4	12	ASSESSMENT
	3	5.1 Definition and types with suitable examples and applications of- Ceramics, Refractory and Composite materials		
13	1	Refractory and Composite materials		

	2	5.2 Glass-chemical composition and application of Soda, Borosilicate and lead glasses only		
	3	5.3 Paint, varnish and enamels- definition, constituents and advantages of these organic coatings		
14	1	REVISION OF UNIT 5		
	2	6.1 Definition of polymer, monomer and degree of polymerization		
	3	6.3 Definition of plastics, thermo plastics and thermo setting plastics with suitable examples, distinctions between thermo plastics and thermo settings		
15	1	6.2 Brief introduction to addition and condensation polymers		
	2	6.4 Applications of polymers in industry and daily life		
	3	REVISION OF UNIT 6		