Lecture Plan - APPLIED CHEMISTRY II					
Text Book	**Engineering Chemistry by P.C. Jain & Monika Jain, Dhanapat Rai Publishing Company, New Delhi**				
	Engineering Chemistry – A Text Book by H. K. Chopra & A. Parmar, Narosa Publishing House, New Delhi.				
Course	**DIPLOMA**	**Branch**	**CIVIL/ME**		**2nd Semester**
Paper code:				**Name of the Subject:**	**APPLIED CHEMISTRY – II**
Lecture No.	**Topics to be covered**	**Learning Objective**		**Books**	**Mode of Teaching**
1	General metallurgical terms and operations with reference to iron, copper and aluminium	The Student will Learn about General metallurgical terms and operations with reference to iron, copper and aluminium		Text Books	White Board/PPT
2	General metallurgical terms and operations with reference to iron, copper and aluminium	The Student will Learn about General metallurgical terms and operations with reference to iron, copper and aluminium		Text Books	White Board/PPT
3	Manufacture of steel- Open hearth process.	The Student will Learn about Manufacture of steel- Open hearth process.		Text Books	White Board/PPT
4	Manufacture of steel- Open hearth process.	The Student will Learn about Manufacture of steel- Open hearth process.		Text Books	White Board/PPT
5	Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome	The Student will Learn about Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome		Text Books	White Board/PPT
6	Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome	The Student will Learn about Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome		Text Books	White Board/PPT
7	Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome	The Student will Learn about Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome		Text Books	White Board/PPT
8	Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome	The Student will Learn about Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome		Text Books	White Board/PPT
9	Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome	The Student will Learn about Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome		Text Books	White Board/PPT
10	Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome	The Student will Learn about Alloys- definition and purpose of alloying, Type of alloys – ferrous and nonferrous alloys, properties and applications of ferrous alloys- invar, nichrome		Text Books	White Board/PPT
11	Definition of corrosion, its types and factors affecting corrosion rate.	The Student will Learn about Definition of corrosion, its types and factors affecting corrosion rate.		Text Books	White Board/PPT
12	Theories of a) Dry (chemical) corrosion- Pilling Bedworth rule b) Wet corrosion in acidic atmosphere by hydrogen evolution mechanism	The Student will Learn about Theories of a) Dry (chemical) corrosion- Pilling Bedworth rule b) Wet corrosion in acidic atmosphere by hydrogen evolution mechanism		Text Books	White Board/PPT
13	Theories of a) Dry (chemical) corrosion- Pilling Bedworth rule b) Wet corrosion in acidic atmosphere by hydrogen evolution mechanism	The Student will Learn about Theories of a) Dry (chemical) corrosion- Pilling Bedworth rule b) Wet corrosion in acidic atmosphere by hydrogen evolution mechanism		Text Books	White Board/PPT
14	Definition of passivity in metals as per galvanic series	The Student will Learn about Definition of passivity in metals as per galvanic series		Text Books	White Board/PPT
15	Definition of passivity in metals as per galvanic series	The Student will Learn about Definition of passivity in metals as per galvanic series		Text Books	White Board/PPT
16	Corrosion control: a) Metal coatings – Cathodic protection(Sacrificial protection and impressed current voltage), Cementation on Base Metal Steel	The Student will Learn about Corrosion control: a) Metal coatings – Cathodic protection(Sacrificial protection and impressed current voltage), Cementation on Base Metal Steel		Text Books	White Board/PPT

17	Corrosion control: a) Metal coatings – Cathodic protection(Sacrificial protection and impressed current voltage), Cementation on Base Metal Steel	The Student will Learn about Corrosion control: a) Metal coatings – Cathodic protection(Sacrificial protection and impressed current voltage), Cementation on Base Metal Steel	Text Books	White Board/PPT
18	Corrosion control: a) Metal coatings – Cathodic protection(Sacrificial protection and impressed current voltage), Cementation on Base Metal Steel	The Student will Learn about Corrosion control: a) Metal coatings – Cathodic protection(Sacrificial protection and impressed current voltage), Cementation on Base Metal Steel	Text Books	White Board/PPT
19	Definition of fuel, classification of fuels, characteristics of good fuel, relative merits of gaseous, liquid and solid fuels	The Student will Learn about Definition of fuel, classification of fuels, characteristics of good fuel, relative merits of gaseous, liquid and solid fuels	Text Books	White Board/PPT
20	Calorific value-higher calorific value, lower calorific value, determination of calorific value of solid or liquid fuel using Bomb calorimeter and numerical examples	The Student will Learn about Calorific value-higher calorific value, lower calorific value, determination of calorific value of solid or liquid fuel using Bomb calorimeter and numerical examples	Text Books	White Board/PPT
21	Calorific value-higher calorific value, lower calorific value, determination of calorific value of solid or liquid fuel using Bomb calorimeter and numerical examples	The Student will Learn about Calorific value-higher calorific value, lower calorific value, determination of calorific value of solid or liquid fuel using Bomb calorimeter and numerical examples	Text Books	White Board/PPT
22	Coal - types of coal and proximate analysis of coal	The Student will Learn about Coal - types of coal and proximate analysis of coal	Text Books	White Board/PPT
23	Coal - types of coal and proximate analysis of coal	The Student will Learn about Coal - types of coal and proximate analysis of coal	Text Books	White Board/PPT
24	Fuel rating – Octane number and Cetane number, fuel-structural influence on Octane and Cetane numbers	The Student will Learn about Fuel rating – Octane number and Cetane number, fuel-structural influence on Octane and Cetane numbers	Text Books	White Board/PPT
25	Fuel rating – Octane number and Cetane number, fuel-structural influence on Octane and Cetane numbers	The Student will Learn about Fuel rating – Octane number and Cetane number, fuel-structural influence on Octane and Cetane numbers	Text Books	White Board/PPT
26	Gaseous fuels – chemical composition, calorific value and applications of natural gas (CNG), LPG, producer gas, water gas and biogas	The Student will Learn about Gaseous fuels – chemical composition, calorific value and applications of natural gas (CNG), LPG, producer gas, water gas and biogas	Text Books	White Board/PPT
27	Gaseous fuels – chemical composition, calorific value and applications of natural gas (CNG), LPG, producer gas, water gas and biogas	The Student will Learn about Gaseous fuels – chemical composition, calorific value and applications of natural gas (CNG), LPG, producer gas, water gas and biogas	Text Books	White Board/PPT
28	Elementary ideal on – hydrogen as future fuels, nuclear fuels.	The Student will Learn about Elementary ideal on – hydrogen as future fuels, nuclear fuels.	Text Books	White Board/PPT
29	Definition of Lubricant and lubrication, type of lubrications –hydrodynamic, boundary lubrication with illustrative diagrams	The Student will Learn about Definition of Lubricant and lubrication, type of lubrications –hydrodynamic, boundary lubrication with illustrative diagrams	Text Books	White Board/PPT
30	Classification of lubricants –liquid lubricants, solid lubricants, semi-solid lubricants and synthetic lubricants with examples	The Student will Learn about Classification of lubricants –liquid lubricants, solid lubricants, semi-solid lubricants and synthetic lubricants with examples	Text Books	White Board/PPT
31	Classification of lubricants –liquid lubricants, solid lubricants, semi-solid lubricants and synthetic lubricants with examples	The Student will Learn about Classification of lubricants –liquid lubricants, solid lubricants, semi-solid lubricants and synthetic lubricants with examples	Text Books	White Board/PPT
32	Properties of lubricant a. Physical properties –viscosity and viscosity index, cloud point and pour point, flash point and fire point, oiliness. b. Chemical properties, total acid value	The Student will Learn about Properties of lubricant a. Physical properties –viscosity and viscosity index, cloud point and pour point, flash point and fire point, oiliness. b. Chemical properties, total acid value or number (TAV or	Text Books	White Board/PPT
33	Properties of lubricant a. Physical properties –viscosity and viscosity index, cloud point and pour point, flash point and fire point, oiliness. b. Chemical properties, total acid value	The Student will Learn about Properties of lubricant a. Physical properties –viscosity and viscosity index, cloud point and pour point, flash point and fire point, oiliness. b. Chemical properties, total acid value or number (TAV or	Text Books	White Board/PPT
34	Designation of lubricating oils according to Society of Automotive Engineers (SAE)	The Student will Learn about Designation of lubricating oils according to Society of Automotive Engineers (SAE)	Text Books	White Board/PPT

35	Designation of lubricating oils according to Society of Automotive Engineers (SAE)	The Student will Learn about Designation of lubricating oils according to Society of Automotive Engineers (SAE)	Text Books	White Board/PPT
36	Cutting fluids – applications of cutting fluids, types and the factors that govern the selection of cutting fluids	The Student will Learn about Cutting fluids – applications of cutting fluids, types and the factors that govern the selection of cutting fluids	Text Books	White Board/PPT
37	Cutting fluids – applications of cutting fluids, types and the factors that govern the selection of cutting fluids	The Student will Learn about Cutting fluids – applications of cutting fluids, types and the factors that govern the selection of cutting fluids	Text Books	White Board/PPT
38	Definition and types with suitable examples and applications of- Ceramics, Refractory and Composite materials	The Student will Learn about Definition and types with suitable examples and applications of- Ceramics, Refractory and Composite materials	Text Books	White Board/PPT
39	Definition and types with suitable examples and applications of- Ceramics, Refractory and Composite materials	The Student will Learn about Definition and types with suitable examples and applications of- Ceramics, Refractory and Composite materials	Text Books	White Board/PPT
40	Glass-chemical composition and application of Soda, Borosilicate and lead glasses only	The Student will Learn about Glass-chemical composition and application of Soda, Borosilicate and lead glasses only	Text Books	White Board/PPT
41	Glass-chemical composition and application of Soda, Borosilicate and lead glasses only	The Student will Learn about Glass-chemical composition and application of Soda, Borosilicate and lead glasses only	Text Books	White Board/PPT
42	Paint, varnish and enamels- definition, constituents and advantages of these organic coatings	The Student will Learn about Paint, varnish and enamels- definition, constituents and advantages of these organic coatings	Text Books	White Board/PPT
43	Paint, varnish and enamels- definition, constituents and advantages of these organic coatings	The Student will Learn about Paint, varnish and enamels- definition, constituents and advantages of these organic coatings	Text Books	White Board/PPT
44	Definition of polymer, monomer and degree of polymerization	The Student will Learn about Definition of polymer, monomer and degree of polymerization	Text Books	White Board/PPT
45	Brief introduction to addition and condensation polymers with suitable examples (PE, PS, PVC, Teflon, Nylon -66 and Bakelite)	The Student will Learn about Brief introduction to addition and condensation polymers with suitable examples (PE, PS, PVC, Teflon, Nylon -66 and Bakelite)	Text Books	White Board/PPT
46	Brief introduction to addition and condensation polymers with suitable examples (PE, PS, PVC, Teflon, Nylon -66 and Bakelite)	The Student will Learn about Brief introduction to addition and condensation polymers with suitable examples (PE, PS, PVC, Teflon, Nylon -66 and Bakelite)	Text Books	White Board/PPT
47	Definition of plastics, thermo plastics and thermo setting plastics with suitable examples, distinctions between thermo plastics and thermo settings	The Student will Learn about Definition of plastics, thermo plastics and thermo setting plastics with suitable examples, distinctions between thermo plastics and thermo settings	Text Books	White Board/PPT
48	Applications of polymers in industry and daily life	The Student will Learn about Applications of polymers in industry and daily life	Text Books	White Board/PPT

Note for Faculty: Any varation in Leture plan and actual syllabus coverage is to be notified to HOD/Principal with valid reason and measures to cover that variation.