**PERFORMA OF LESSON PLAN**



|  |  |  |  |  |  |  |  |  |  |  |
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| **NAME OF THE FACULTY** | | | **: MR. SHIV GAURAV RANA** |  |  |  |  |  |  |  |
| **DISCIPLINE** | |  | **: MECH, CIVIL,ELECT,COMP.** |  |  |  |  |  |  |  |
| **SEMESTER** | |  | **: SECOND** |  |  |  |  |  |  |  |
| **SUBJECT** | |  | **: APPLIED CHEMISTRY** |  |  |  |  |  |  |  |
| **LESSION PLAN DURATION** | | | **: 15 WEEKS** |  |  |  |  |  |  |  |
| **WORK LOAD PER WEEK** | | | **: Lectures = 3+3+3 Practicals = 4+4+4** | |  |  |  |  |  |  |
|  |  |  |  |  |  |  | | |  |  |
|  |  |  | **THEORY** |  | **PRACTICAL** | | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **WEEK** | **LECTURE** |  |  | **PRACTI** |  |  |  |  |  |  |
|  | **TOPIC (WITH ASSIGNMENT & TESTS)** | | **CAL** |  | **TOPIC** | | |  |  |
|  | **DAY** |  |  |  |
|  |  |  | **DAY** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | 1 | General metallurgical terms | |  |  |  |  |  |  |  |
| 1 | 2 | Metallurgy operations with reference to iron | | 1 |  | Gravimetric analysis | | | |  |
|  | 3 | Metallurgy operations with copper | |  |  |  |  |  |  |  |
|  |  |  | |  |  |  | | |  |  |
|  | 4 | Metallurgy operations with aluminium | |  |  | Determination | | | of |  |
|  | 5 | Manufacture of steel- Open hearth process. | |  |  | percentage | | purity of | |  |
| 2 | 6 |  |  | 2 |  | commercial sample | | | |  |
|  | Alloys, properties and applications of ferrous alloys | |  |  | of blue | vitriol | | using |  |
|  |  |  |  |  |
|  |  |  |  |  |  | N/20 Na2S2O3. | | | |  |
|  | 7 | Alloys- different alloys their uses | |  |  |  |  |  |  |  |
| 3 | 8 | Revision |  | 3 |  | Revision and Viva | | | |  |
|  |  |  |  |  |  |  |  |  |  |
| 9 | Test |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | 10 | Definition of corrosion , its types and factors affecting | |  |  | Gravimetric | | |  |  |
|  | corrosion rate |  |  |  |  |  |
|  |  |  |  |  | estimation of | | |  |  |
| 4 | 11 | Wet corrosion, Positivity | | 4 |  |  |  |
|  | moisture in the given | | | |  |
|  |  |  |  |  |  |  |
|  | 12 | Metallic Coating |  |  |  | coal sample | | |  |  |
|  |  |  | |  |  |  | | |  |  |
|  | 13 | Inorganic coatings, Organic coatings heat treatment | |  |  | Determination | | | of |  |
|  | 14 | Revision |  |  |  | percentage | |  |  |  |
| 5 |  |  |  | 5 |  | composition | | | of |  |
|  |  |  |  |  | volatile/non-volatile | | | |  |
|  | 15 | Sessional Test |  |  |  |  |
|  |  |  |  | matter | in | the | given |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  | coal sample | | |  |  |
|  |  |  | |  |  |  |  |  |  |  |
|  | 16 | Definition of fuel, classification, characteristics | |  |  |  |  |  |  |  |
| 6 | 17 | Comparison of fuels, Calorific value | | 6 |  | Revision and Viva | | | |  |
|  | 18 | Bomb Calorimeter and numerical | |  |  |  |  |  |  |  |
|  | 19 | Types of Coal and Proximate Analysis | |  |  | Gravimetric | | |  |  |
| 7 | 20 | Octave number and Cetane number | | 7 |  | estimation of ash | | | |  |
| 21 | Gaseous fuel- CNG, LPG, Producer gas | |  | content | in the given | | |  |
|  |  |  |  |
|  |  |  | coal sample | | |  |  |
|  |  |  |  |  |  |  |  |
|  | 22 | Water gas and biogas, hydrogen as future fuels, | |  |  | Determination | | | of |  |
|  |  |  |  |  |  | viscosity | | of | given |  |
|  | 23 | Revision |  |  |  |  |
| 8 |  | 8 |  | liquid |  |  | using |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | 24 | Test |  |  |  | Redwood | |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | viscometers | | |  |  |
|  | 25 | Definition of Lubricant and boundary Lubricant | |  |  | Determination | | | of |  |
|  | hydrodynamic, boundary lubrication | |  |  | flash point | | of | given |  |
| 9 |  | 9 |  |  |
|  |  |  |  | lubricating | | oil | using |  |
|  | liquid lubricants, solid lubricants, semi-solid lubricants | |  |  |
|  |  |  |  |  |
|  | 26 |  |  | Able’s | flash | | point |  |
|  | and synthetic lubricants | |  |  |  |
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|  | 27 | Physical properties of Lubricant |  |  | apparatus |  |
|  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | 28 | Chemical properties of Lubricant |  |  |  |  |
| 10 |  |  |  | 10 | Revision and Viva |  |
| 29 | Revision |  |  |
|  |  |  |  |  |  |  |
|  | 30 | Sessional Test |  |  |  |  |
|  |  |  | |  |  |  |
|  |  | Applications of cutting fluids, types and the that | |  |  |  |
|  | 31 | govern the selection of cutting fluids |  |  | To study the effect |  |
| 11 |  | factors |  | 11 | of metal coupling on |  |
|  |  |  | corrosion of iron |  |
|  | 32 | Definition and types and applications of- Ceramics, |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | 33 | Refractory and Composite materials |  |  |  |  |
|  | 34 | Glass-chemical composition and application of Soda, | |  |  |  |
|  |  |  |  |  |  |  |
| 12 | 35 | Definition of polymer, monomer and degree | of | 12 | Revision and Viva |  |
| polymerization |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | 36 | Addition and condensation polymers |  |  |  |  |
|  |  |  |  |  |  |  |
|  | 37 | (PE, PS, PVC, Teflon, Nylon -66 and Bakelite) |  |  |  |  |
|  |  |  |  |  | Detection of iron |  |
|  |  | Definition of plastics, thermo plastics and thermo |  |  |  |
| 13 | 38 |  | 13 | metal in the given |  |
| setting plastics |  |  |
|  |  |  |  | solution of rust |  |
|  |  |  |  |  |  |
|  | 39 | Distinctions between thermo plastics and thermo | |  |  |  |
|  |  |  |  |  |  |  |
|  | 40 | Applications of polymers in industry and daily life |  |  |  |  |
|  |  |  |  |  |  |  |
| 14 | 41 | Revision |  | 14 | Revision and Viva |  |
|  | 42 | Doubt Quarries and Revision |  |  |  |  |
|  |  |  |  |  |  |  |
|  | 43 | Revision and discussion of previous year Q. Papers |  |  |  |  |
| 15 |  |  |  | 15 | Revision and Viva |  |
| 44 | Revision and discussion of previous year Q. Papers |  |  |
|  |  |  |  |  |  |  |
|  | 45 | Sessional Test |  |  |  |  |
|  |  |  |  |  |  |  |