

ACADEMIC SESSION: 2022-23 (Winter-2022)

| Discipline : Electrical Engineering | | Semester : 3 rd | Name of the Teaching Faculty : Baneswar Munda Designation: Workshop Superintendent | |
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| Subject : Elements of Mechanical Engineering | | Semester From date: 01/07/2024 to 08/11/2024 | | |
| SL NO. | DATE | CHAPTER | THEORY TOPIC NAME | NO.OF PERIODS |
| 1 | 01.07.24 | 1.Thermodynamics | Thermodynamics, Different form of energy, Conversion of energy | 1 |
| 2 | 01.07.24 | | Heat, work and its unit, similarity and dissimilarity b/w heat & work | 1 |
| 3 | 01.07.24 | | 1st law of thermodynamics.. | 1 |
| 4 | 01.07.24 | | | 1 |
| 5 | 01.07.24 | | Specific heat, Latent heat, Sensible heat | 1 |
| 6 | 01.07.24 | | Relationship b/w specific heat of gases at constant volume and constant pressure. | 1 |
| 7 | 01.07.24 | 2.Properties of steam | Steam, Different types of steam | 1 |
| 8 | 01.07.24 | | Properties and uses of steam | 1 |
| 9 | 01.07.24 | | Formation of steam at constant pressure | 1 |
| 10 | 1.10.22 | | Total heat of wet, dry and super heated steam | 1 |
| 11 | 10.10.22 | | Use of steam table for solution of simple problem | 1 |
| 12 | 11.10.22 | 3.Boilers | Boiler, Advantages of using steam in power generation | 1 |
| 13 | 14.10.22 | | Main application of steam, boiler systems | 1 |
| 14 | 15.10.22 | | Broad classification of boiler with examples | 1 |
| 15 | 17.10.22 | | Parts and function of Cochran boiler | 1 |
| 16 | 18.10.22 | | Parts and function of Babcock Wilcox boiler | 1 |
| 17 | 21.10.22 | | Boiler mountings for safety and control | 1 |
| 18 | 25.10.22 | | Safety valve, pressure valve, water level indicator, fusible plug | 1 |
| 19 | 28.10.22 | Pressure gauge,steam stop valve,Feed check valve,Blow off cock, man hole and mud box. | 1 | |

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| 20 | 29.10.22 | | Different accessories of boiler, Purpose of using boiler accessories | 1 |
| 21 | 31.10.22 | | Function of Economizer, Super heater, air pre heater, feed pump etc. | 1 |
| 22 | 01.11.22 | 4.Steam Engines | Classification of steam engines | 1 |
| 23 | 04.11.22 | | Construction of steam engine | 1 |
| 24 | 05.11.22 | | Working of single acting steam engine | 1 |
| 25 | 07.11.22 | | Working of double acting steam engine | 1 |
| 26 | 11.11.22 | | Hypothetical Indicator diagram of steam engine | 1 |
| 27 | 12.11.22 | | Actual Indicator diagram of steam engine | 1 |
| 28 | 14.11.22 | | Cylinder condensation | 1 |
| 29 | 15.11.22 | | Mass of steam in cylinder and steam consumption | 1 |
| 30 | 18.11.22 | | Calculation of Mean effective pressure, IHP and BHP and mechanical efficiency | 1 |
| 31 | 19.11.22 | | Simple problem solving on above | 1 |
| 32 | 21.11.22 | | 5.Steam Turbines | History of steam steam turbine |
| 33 | 22.11.22 | Working principle of steam turbine | | 1 |
| 34 | 25.11.22 | Classification of steam turbine | | 1 |
| 35 | 26.11.22 | Impulse turbine & reaction turbine | | 1 |
| 36 | 28.11.22 | Difference b/w Impulse turbine & reaction turbine | | 1 |
| 37 | 29.11.22 | Simple problems on above. | | 1 |
| 38 | 02.12.22 | 6.Condenser | Condenser, Function of condenser | 1 |
| 39 | 03.11.22 | | Elements of a condensing plant | 1 |
| 40 | 05.12.22 | | Types of condensers, Jet condenser and surface condenser | 1 |
| | 06.12.22 | | Advantages and disadvantages of different condenser | 1 |
| 42 | 09.12.22 | 7. I.C. Engine | I.C Engine, Classification of I.C engines | 1 |

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| 43 | 10.12.22 | | Components and function of I.C engine | 1 |
| 44 | 12.12.22 | | Two stroke and 4 stroke petrol engines | 1 |
| 45 | 13.12.22 | | Two stroke and 4 stroke Diesel engines | 1 |
| 46 | 16.12.22 | 8.Hydrostatics | Fluid and properties of fluid | 1 |
| 47 | 17.12.22 | | Pressure in fluids at rest | 1 |
| 48 | 19.12.22 | | Liquids (fluids with free surfaces) | 1 |
| 49 | 20.12.22 | | Determine static and dynamic pressure at a point | 1 |
| 50 | | | Different pressure measuring Instruments | |
| 51 | | 9.Hydrokinetics | Hydrokinetics and Hydrokinetics energy conversion system | |
| 52 | | | Derivation of equation of continuity of flow | |
| 53 | | | Explain about energy of flowing liquid | |
| 54 | | | Derivation and explanation of Bernoulli's theorem | |
| 55 | | | Derivation and explanation of Bernoulli's theorem | |
| 56 | | 10.Hydraulic Devices & Numerics | Difference between hydraulic and Pneumatics | |
| 57 | | | Operation of Hydraulic intensifier | |
| 58 | | | Construction and working of Hydraulic lift | |
| 59 | | | Types and function of hydraulic Accumulator | |
| 60 | | | Working principle of Hydraulic ram | |
| TOTAL CLASS | | | | 60 |

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