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| PNS SCHOOL OF ENGG. & TECH., MARSHAGHAI  DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING  LESSON PLAN | | |
| BRANCH:  Mechanical  ENGINEERING | SEMESTER :  4th | NAME OF TEACHING FACULTY :  ER. JYOTIRMAY JENA |
| SUBJECT :  THERMAL ENGINEERING -II | NO. OF DAYS/  PER WEEK  CLASS  ALLOTTED : 05 | SEMESTER FROM DATE : 14.02.2023 TO 23.05.2023  NO. OF WEEKS : 12 |
| WEEK | CLASSDAY | THEORY TOPICS |
| 1ST | 1st | CHAPTER-1 Performance of I.C engine Introduction |
| 2nd | Define mechanical efficiency, Indicated  thermal efficiency, Relative Efficiency, |
| 3rd | brake thermal efficiency |
| 4th | Overall efficiency ,Mean effective pressure |
| 5th | specific fuel consumption |
| 2ND | 1st | Define air-fuel ratio & calorific value of fuel. |
| 2nd | Work out problems to determine efficiencies & specific fuel consumption. |
| 3rd | Numerical solving |
|  | 4th | CHAPTER-2 Air Compressor INTRODUCTION |
| 5th | Explain functions of compressor & industrial use of compressor air |
| 3RD | 1st | Classify air compressor & principle of operation. |
| 2nd | Describe the parts and working principle  of reciprocating Air compressor |
| 3rd | Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered  &Volumetric efficiency. |
| 4th | Derive the work done of single stage & two stage compressor with and without  clearance. |
| 5th | Numerical Solving |
| 4TH | 1st | Numerical Solving |
| 2nd | Numerical Solving |
| 3rd | Ch-3. Properties of Steam |
| 4th | Difference between gas & vapours. |
| 5th | Formation of steam. |
| 5TH | 1st | Representation on P-V, T-S, H-S, & T-H Diagram  d |
| 2nd | Definition & Properties of Steam. |
| 3rd | Use of steam table & mollier chart for  finding unknown properties. |
| 4th | Non flow & flow process of vapour |
| 5th | P-V, T-S & H-S, diagram |
| 6TH | 1st | CLASS TEST |
| 2nd | Determine the changes in properties & solve simple numerical |
| 3rd | Solving numerical |
| 4th | Solving numerical |
| 5th | Solving numerical |
| 7TH | 1st | CH.-4 Steam Generator INTRODUCTION |
| 2nd | Classification & types of Boiler. |
| 3rd | Important terms for Boiler. |
| 4th | Comparison between fire tube & Water BOILER |
| 5th | Comparison between fire tube & Water BOILER |
| 8TH | 1st | Description & working of common boilers (Cochran, Lancashire, Babcock &  Wilcox Boiler) |
| 2nd | Description & working of common boilers (Cochran, Lancashire, Babcock &  Wilcox Boiler) |
| 3rd | CLASS TEST |
| 4th | Description & working of common boilers (Cochran, Lancashire, Babcock &  Wilcox Boiler) |
| 5th | Description & working of common boilers (Cochran, Lancashire, Babcock &  Wilcox Boiler) |
| 9TH | 1st | Description & working of common boilers (Cochran, Lancashire, Babcock &  Wilcox Boiler) |
| 2nd | Boiler Draught (Forced, induced &  balanced) |
| 3rd | Boiler Draught (Forced, induced &  balanced) |
| 4th | Boiler mountings & accessories |
| 5th | Boiler mountings & accessories |
| 10TH | 1st | Ch-5: Steam Power Cycles INTRODUCTION |
| 2nd | Carnot cycle with vapour. Derive work &  efficiency of the cycle. |
| 3rd | Rankine cycle. Representation in P-V, T-S  & h-s diagram. |
| 4th | Derive Work & Efficiency. |
| 5th | Effect of Various end conditions in  Rankine cycle. |
| 11TH | 1st | Reheat cycle & regenerative Cycle |
| 2nd | Solve simple numerical on Carnot vapour  Cycle & Rankine Cycle |
| 3rd | CH.-6 Heat Transfer INTRODUCTION |
| 4th | Modes of Heat Transfer (Conduction,  Convection, Radiation |
| 5th | Modes of Heat Transfer (Conduction,  Convection, Radiation |
| 12TH | 1st | Fourier law of heat conduction and  thermal conductivity (k). |
| 2nd | Newton’s laws of cooling. |
| 3rd | Radiation heat transfer (Stefan, Boltzmann & Kirchhoff’s law) only statement,  no derivation & no numerical problem |
| 4th | Black body Radiation, Definition of  Emissivity, absorptivity, & transmissibility |
| 5th | Previous year qus discussion |

SIGNATURE OF LECTURER SIGNATURE OF H.O.D