|  |
| --- |
| PNS SCHOOL OF ENGG. & TECH., MARSHAGHAIDEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERINGLESSON 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 23.05.2023NO. OF WEEKS : 12 |
| WEEK | CLASSDAY |  THEORY TOPICS |
| 1ST | 1st | CHAPTER-1 Performance of I.C engine Introduction |
| 2nd | Define mechanical efficiency, Indicatedthermal 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 principleof 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 withoutclearance. |
| 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 Diagramd |
| 2nd |  Definition & Properties of Steam. |
| 3rd |  Use of steam table & mollier chart forfinding 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 inRankine cycle. |
| 11TH | 1st |  Reheat cycle & regenerative Cycle |
| 2nd |  Solve simple numerical on Carnot vapourCycle & 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 andthermal 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 ofEmissivity, absorptivity, & transmissibility |
| 5th  |  Previous year qus discussion |

SIGNATURE OF LECTURER SIGNATURE OF H.O.D