R.K INSTITUTE OF ENGINEERING & TECHNOLOGY At/Po:Kantapada-Apuja, Niali, Dist-Cuttack, Odisha DEPARTMENT OF MECHANICAL ENGINEERING

| -: LESSON PLAN: | | ES | 50 | N | PL | A | N | 0, | - |
|-----------------|--|----|----|---|----|---|---|----|---|
|-----------------|--|----|----|---|----|---|---|----|---|

| Discipline:- MECHANICAL | Semester: 6 TH | Name of the teaching faculty:- Ramachandra Brothan |
|----------------------------|------------------------------|--|
| Subject. | No. Of | Semester したり To Date: 36、04・21 |
| AE & HV | days / per week | from date: 35.01.21 To Date: 36.04.21 No. Of weeks:- 15 |
| | class allotted:- 04 | No. of weeks. |
| Week | Class day | Theory/ Practical Topics : |
| | 1st | Automobiles: Definition, need and classification |
| 1 ST | 2nd | Automobiles: Definition, need and classification |
| | 3rd | Layout of automobile chassis with major components (Line diagram) |
| | 4th | Layout of automobile chassis with major components (Line diagram) |
| 2 ND | 1st | Manufacturer's specification of auto engines ofmotorcycle, scooter, car & bus one from each. |
| | 2nd | State the classification of engines basing on working principle, fuel used, position of cylinder, |
| - | 3rd , | arrangement of cylinder. |
| | 4th | Clutch System: Need, Types (Single & Multiple) and Working principle with sketch |
| | 1st | Clutch System: Need, Types (Single & Multiple) and Working principle with sketch |
| 3 RD | 2nd | Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box, Concept of automatic gear changing mechanisms |
| | 3rd | Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box, Concept of automatic gear changing mechanisms |
| | 4th | Propeller shaft: Constructional features |
| | 1st | Differential: Need, Types and Working principle |
| ₁ [™] | 2nd | Braking systems in automobiles: Need and types. |

| | 3rd | Braking systems in automobiles: Need and types. |
|---|-----|--|
| Children and American Approximation of the Control | 4th | Mechanical Brake |
| | 1st | Mechanical Brake |
| ТН | 2nd | Hydraulic brake |
| | 3rd | Air brake |
| | 4th | Air brake |
| | 1st | Air assisted hydraulic brake |
| TH D. | 2nd | Air assisted hydraulic brake |
| | 3rd | Vacuum Brake |
| | 4th | Vacuum Brake |
| 4 | 1st | Revision |
| 7 TH | 2nd | Wiring diagram of Horn circuit, Lighting circuit, Cut-out circuit, |
| | 3rd | Voltage |
| | 4th | current regulator circuit and Flasher circuit (Sketch and description) State the common ignition troubles and its remedies. |
| | 1st | Spark plugs: Purpose, construction and specifications |
| 8 TH | 2nd | Description of the conventional suspension system for Rear and |
| 5 | 3rd | Front axle. Description of the conventional suspension system for Rear and |
| | 4th | Front axle. Description of independent suspension system used in cars (coil |
| | | spring andtension bars) |
| | 1st | Description of independent suspension system used in cars (coil spring and |
| 9 TH | 2nd | tension bars) Constructional features and working of a telescopic shock absorber |
| | 3rd | Constructional features and working of a telescopic shock absorber |
| | 4th | State tyre specifications. |
| | 1st | Explain the causes and remedies of tyre wear. |
| 4 OTH | 2nd | Describe necessity of engine cooling. |
| 10 TH | 3rd | Describe defects of cooling and their remedial measures. |
| | 4th | Describe defects of cooling and their remedial measures. |

| | 1st | | |
|------------------|-------|--|-----|
| | 230 | Describe the Function of lubrication. | |
| 11 TH | 2nd | Describe the Function of Iubrication. | * |
| | 3rd | Describe the lubrication System of I.C. engine. | 40- |
| | 4th | Describe the lubrication System of I.C. engine. | |
| | 1st | | |
| 12 [™] | 2nd | Fuel and Ignition system: For petrol Engine: | |
| | 3rd | Revision | |
| - | 4th | Describe carburetion and Air fuel ratio. | |
| | 1st | Describe carburetion and Air fuel ratio. | |
| 13 TH | 2nd | Describe the Battery ignition and Magnet ignition system. | |
| | 3rd | Describe the Battery ignition and Magnet ignition system. | |
| | | Revision | |
| | 4th | Describe Multipoint fuel injection system | |
| | 1st | Describe Multipoint fuel injection system For Diesel engine: | |
| 14 TH | 2nd | Describe Multipoint fuel injection system For Diesel engine: | |
| | 3rd | Describe the working principle of Fuel feed pump | |
| | 4th | Describe the working principle of Fuel feed pump | |
| | 1st . | Injector and Fuel filter | |
| L5 [™] | 2nd | Describe the working principle of fuel injection system for multi cylinder | |
| | 3rd | engine. Describe the working principle of fuel injection system for multi | |
| | 4th | cylinderengine. Revision | |



R.K INSTITUTE OF ENGINEERING & TECHNOLOGY At/Po:Kantapada-Apuja,Niali,Dist-Cuttack,Odisha DEPARTMENT OF MECHANICAL ENGINEERING -: LESSON PLAN:-

| Discipline:- MECHANICAL | Semester: 6 TH | Name of the teaching faculty:- Rama chandra Pradhan |
|----------------------------|---|--|
| Subject. AE & HV | No. Of days / per week class allotted:- | Semester 6th from date: 03/02/22 To Date: 35.64. 22 No. Of weeks:- 15 |
| Week | Class day | Theory/ Practical Topics : |
| | 1st | Automobiles: Definition, need and classification |
| ST | 2nd | Automobiles: Definition, need and classification |
| 1 ST | 3rd | Layout of automobile chassis with major components (Line diagram) |
| | 4th | Layout of automobile chassis with major components (Line diagram) |
| | 1st | Manufacturer's specification of auto engines ofmotorcycle, scooter, car & bus one from each. |
| 2 ND | 2nd | State the classification of engines basing on working principle, fuel used, position of cylinder, |
| 2 | 3rd . | arrangement of cylinder. |
| | 4th | Clutch System: Need, Types (Single & Multiple) and Working principle with sketch |
| | 1st | Clutch System: Need, Types (Single & Multiple) and Working principle with sketch |
| 3 RD | 2nd | Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box, Concept of automatic gear changing mechanisms |
| | 3rd | Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box, Concept of automatic gear changing mechanisms |
| | 4th | Propeller shaft: Constructional reasons |
| | 1st | Differential: Need, Types and Working principle |
| 4 TH | 2nd | Braking systems in automobiles: Need and types. |

| | 3rd | Braking systems in automobiles: Need and types. |
|------------------|-----|--|
| | 4th | Mechanical Brake |
| | 1st | |
| | | Mechanical Brake |
| 5 TH | 2nd | Hydraulic brake |
| | 3rd | Air brake |
| | 4th | Air brake |
| | 1st | Air assisted hydraulic brake |
| 5 [™] | 2nd | Air assisted hydraulic brake |
| | 3rd | Vacuum Brake |
| | 4th | Vacuum Brake |
| | 1st | Revision |
| 7 TH | 2nd | Wiring diagram of Horn circuit, Lighting circuit, Cut-out circuit, |
| | 3rd | Voltage current regulator circuit and Flasher circuit (Sketch and description) |
| | 4th | State the common ignition troubles and its remedies. |
| | 1st | Spark plugs: Purpose, construction and specifications |
| B^TH | 2nd | Description of the conventional suspension system for Rear and Front axle. |
| | 3rd | Description of the conventional suspension system for Rear and Front axle. |
| | 4th | Description of independent suspension system used in cars (coil spring andtension bars) |
| | 1st | Description of independent suspension system used in cars (coil spring and tension bars) |
|) TH | 2nd | Constructional features and working of a telescopic shock absorber |
| | 3rd | Constructional features and working of a telescopic shock absorber |
| | 4th | State tyre specifications. |
| | 1st | Explain the causes and remedies of tyre wear. |
| .0 TH | 2nd | Describe necessity of engine cooling. |
| .0 | 3rd | Describe defects of cooling and their remedial measures. |
| | 4th | Describe defects of cooling and their remedial measures. |

| | 1st | Describe the Function of Iubrication. | 3.46 |
|------------------|-------|--|-----------------|
| 11 TH | 2nd | Describe the Function of Iubrication. | Section Control |
| | 3rd | Describe the lubrication System of I.C. engine. | , and colours |
| | 4th | Describe the Iubrication System of I.C. engine. | |
| | 1st | Fuel and Ignition system: For petrol Engine: | 1 |
| 12 TH | 2nd | Revision | |
| | 3rd | Describe carburetion and Air fuel ratio. | |
| - | 4th | Describe carburetion and Air fuel ratio. | |
| 13 TH | 1st | Describe the Battery ignition and Magnet ignition system. | |
| | 2nd | Describe the Battery ignition and Magnet ignition system. | |
| | 3rd | Revision | |
| | 4th | Describe Multipoint fuel injection system | |
| | 1st | Describe Multipoint fuel injection system For Diesel engine: | |
| 14 TH | 2nd | Describe Multipoint fuel injection system For Diesel engine: | |
| | 3rd | Describe the working principle of Fuel feed pump | |
| | 4th | Describe the working principle of Fuel feed pump | |
| | 1st . | Injector and Fuel filter | |
| 15 TH | 2nd | Describe the working principle of fuel injection system for multi cylinder engine. | |
| | 3rd | Describe the working principle of fuel injection system for multi cylinderengine. | |
| | 4th | Revision | |
| | | The state of the s | |

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R.K INSTITUTE OF ENGINEERING & TECHNOLOGY At/Po:Kantapada-Apuja, Niali, Dist-Cuttack, Odisha DEPARTMENT OF MECHANICAL ENGINEERING -:LESSON PLAN:-

| Discipline:- MECHANICAL | Semester: 6 TH | Name of the teaching faculty:- Ramachandra pradhan | |
|----------------------------|---|--|--|
| Subject. AE & HV | No. Of days / per week class allotted:- | Semester 6 th from date: (4.02.23 To Date: 23.05.23 No. Of weeks:- | |
| Week | Class day | Theory/ Practical Topics : | |
| | 1st | Automobiles: Definition, need and classification | |
| 1 ST | 2nd | Automobiles: Definition, need and classification | |
| - | 3rd | Layout of automobile chassis with major components (Line diagram) | |
| | 4th | Layout of automobile chassis with major components (Line diagram) | |
| | 1st | Manufacturer's specification of auto engines ofmotorcycle, scooter, car & bus one from each. | |
| 2 ND | 2nd | State the classification of engines basing on working principle, fuel used, position of cylinder, | |
| | 3rd | arrangement of cylinder. | |
| | 4th | Clutch System: Need, Types (Single & Multiple) and Working principle with sketch | |
| | 1st | Clutch System: Need, Types (Single & Multiple) and Working principle with sketch | |
| 3 RD | 2nd | Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box, Concept of automatic gear changing mechanisms | |
| | 3rd | Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box. Concept of automatic gear changing mechanisms | |
| - | 4th | Propeller shaft: Constructional features | |
| | 1st | Differential: Need, Types and Working principle | |
| 4 ^{тн} | 2nd | Braking systems in automobiles: Need and types. | |

| | 3rd | Braking systems in automobiles: Need and types. | |
|------------------|-----|--|--|
| , | 4th | Mechanical Brake | 1 |
| | 1st | Mechanical Brake | |
| 5 TH | 2nd | Hydraulic brake | |
| 3 | 3rd | Air brake | |
| | 4th | Air brake | |
| | 1st | Air assisted hydraulic brake | |
| 6 [™] | 2nd | Air assisted hydraulic brake | idanoplose-tilda en- |
| 0 | 3rd | Vacuum Brake | |
| | 4th | Vacuum Brake | |
| | 1st | Revision | |
| 7 TH | 2nd | Wiring diagram of Horn circuit, Lighting circuit, Cut-out circuit, | <u>. </u> |
| | 3rd | Voltage current regulator circuit and Flasher circuit (Sketch and description) | |
| | 4th | State the common ignition troubles and its remedies. | - |
| | 1st | Spark plugs: Purpose, construction and specifications | |
| 8 TH | 2nd | Description of the conventional suspension system for Rear and Front axle. | |
| | 3rd | Description of the conventional suspension system for Rear and Front axle. | |
| | 4th | Description of independent suspension system used in cars (coil spring andtension bars) | The same provided |
| | 1st | Description of independent suspension system used in cars (coil spring and tension bars) | |
| 9 TH | 2nd | Constructional features and working of a telescopic shock absorber | |
| | 3rd | Constructional features and working of a telescopic shock absorber | |
| | 4th | State tyre specifications. | regards (Strip 1 |
| | 1st | Explain the causes and remedies of tyre wear. | 511 |
| 10 TH | 2nd | Describe necessity of engine cooling. | |
| 10 | 3rd | Describe defects of cooling and their remedial measures. | |
| | 4th | Describe defects of cooling and their remedial measures. | |
| | | | |

| | 1st | | |
|------------------|---------------|--|--------|
| 11 TH | 2nd | Describe the Function of lubrication. | |
| | 3rd | Describe the Function of Jubrication | |
| | 4th | Describe the lubrication System of I.C. engine. | |
| - | in the second | Describe the lubrication System of I.C. engine. | - |
| | 1st | | |
| 12 TH | 2nd | Fuel and Ignition system: For petrol Engine: | - mail |
| | 3rd | Revision | |
| | 4th | Describe carburetion and Air fuel ratio. | |
| | 1st | Describe carburetion and Air fuel ratio. | |
| 13 TH | 2nd | Describe the Battery ignition and Magnet ignition system. | |
| | 3rd | Describe the Battery ignition and Magnet ignition system. | |
| | | Revision | |
| | 4th | Describe Multipoint fuel injection system | |
| | 1st | Describe Multipoint fuel injection system For Diesel engine: | |
| 14 [™] | 2nd | Describe Multipoint fuel injection system For Diesel engine: | |
| | 3rd | Describe the working principle of Fuel feed pump | |
| | 4th | Describe the working principle of Fuel feed pump | |
| | 1st | Injector and Fuel filter | |
| 15 TH | 2nd | Describe the working principle of fuel injection system for multi cylinder engine. | |
| | 3rd | Describe the working principle of fuel injection system for multi cylinderengine. | |
| | 4th | Revision | |



R.K INSTITUTE OF ENGINEERING & TECHNOLOGY At/Po:Kantapada-Apuja, Niali, Dist-Cuttack, Odisha DEPARTMENT OF MECHANICAL ENGINEERING -: LESSON PLAN:-

| Discipline:- MECHANICAL | Semester: 4 TH | Name of the teaching faculty:- Debasi's Dash |
|---------------------------------------|---|--|
| Subject. THERMAL ENGINEERING-II | No. Of days / per week class allotted:- 64 | Semester 4-ty from date: 35/01/21 To Date: 30/04/21 No. Of weeks:- 15 |
| Week | Class day | Theory/ Practical Topics : |
| | 1st | Performance of I.C engine Define mechanical efficiency, Indicated thermal efficiency, |
| 1 ST | 2nd | Define mechanical efficiency, Indicated thermal efficiency, |
| | 3rd | Relative Efficiency, brake thermal efficiency overall efficiency Mean effective pressure & specific fuel consumption. |
| | 4th | Relative Efficiency, brake thermal efficiency overall efficiency Mean effective pressure &specific fuel consumption. |
| | 1st | Define air-fuel ratio & calorific value of fuel. |
| ND | 2nd | Define air-fuel ratio & calorific value of fuel. |
| 2 ND | 3rd | Work out problems to determine efficiencies & specific fuel consumption. |
| | 4th | Work out problems to determine efficiencies & specific fuel consumption. |
| _ | 1st | Air Compressor Explain functions of compressor & industrial use of compressor air |
| 3 RD | 2nd | Explain functions of compressor & industrial use of compressor an |
| 3 | 3rd | Classify air compressor & principle of operation. |
| | 4th | Classify air compressor & principle of operation. |
| | 1st | Describe the parts and working principle of reciprocating Air compressor |
| | 2nd | Describe the parts and working principle of reciprocating Air compressor |
| 4 TH | 3rd | Explain the terminology of reciprocating compressor such as bore, stroke, Pressure ratio free air delivered & Volumetric efficiency. |
| | 4th | Explain the terminology of reciprocating compressor such as both, or only |
| | 1st | Pressure ratio free air delivered & Volumetre of Pressure ratio free air delivered & Volumetre ratio free air delivered & Volumetre rat |

| | 2nd | Derive the work done of single stage & two stage compressor with and witho |
|--|------|--|
| TH C | | Clearance. |
| | 3rd | Solve simple problems (without clearance only) |
| | 4th | Solve simple problems (without clearance only) |
| | 1st | Properties of Steam |
| | 130 | Difference between gas & vapors. |
| | 2nd | Difference between gas & vapors. |
| 6 TH | 1 | Formation of steam. |
| | 3rd | Representation on P-V, T-S, H-S, & T-H diagram. |
| | | Formation of steam. |
| | 4th | Representation on P-V, T-S, H-S, & T-H diagram. |
| | | Definition & Properties of Steam. |
| | 1st | Use of steam table & mollier chart for finding unknown properties. |
| | | Definition & Properties of Steam. |
| 7 TH | 2nd | Use of steam table & mollier chart for finding unknown properties. |
| | | Non flow & flow process of vapour. |
| | 3rd | NON TIOW & HOW PROCESS OF VAPORITY |
| | | P-V, T-S & H-S, diagram. |
| | 4th | Non flow & flow process of vapour. |
| | | P-V, T-S & H-S, diagram. |
| | 1st | Determine the changes in properties & solve simple numerical. |
| | 2nd | Determine the changes in properties & solve simple numerical. |
| 8 TH | 3rd | Steam Generator |
| | 3,4 | Classification & types of Boiler. |
| | 4th | Classification & types of Boiler. |
| | | Important terms for Boiler. |
| | 1st | |
| | 2nd | Important terms for Boiler. |
| 9 TH | | Comparison between fire tube & Water tube Boiler. |
| | 3rd | |
| | 4th | Comparison between fire tube & Water tube Boiler. |
| 40000 | 1.01 | Description & working of common boilers (Cochran, Lancashire, Babcock & |
| | 1st | Wilcox Boiler) |
| | 2 1 | Description & working of common boilers (Cochran, Lancashire, Babcock & |
| 10 TH | 2nd | Wilcox Boiler) |
| 10 | 3rd | Boiler Draught (Forced, induced & balanced) |
| | Siu | |
| | 4th | Boiler Draught (Forced, induced & balanced) |
| , | 1st | Boiler mountings & accessories. |
| | | Boiler mountings & accessories. |
| 11 TH | 2nd | |
| 11 | 3rd | Steam Power Cycles |
| | | Carnot cycle with vapour. |

| | 4th | Carnot cycle with vapour. |
|------------------|------|--|
| | 1st | Derive work & efficiency of the cycle. |
| | 130 | Rankine cycle. |
| | | Representation in P-V, T-S & h-s diagram. |
| 12 TH | 2nd | Derive work & efficiency of the cycle. |
| | 2110 | Rankine cycle. |
| | | Representation in P-V, T-S & h-s diagram. |
| | 2 rd | Derive Work & Efficiency. |
| | 3rd | Effect of Various end conditions in Rankine cycle. |
| | | Reheat cycle & regenerative Cycle. |
| | 4.1 | Derive Work & Efficiency. |
| | 4th | Effect of Various end conditions in Rankine cycle. |
| | | Reheat cycle & regenerative Cycle. |
| | | Solve simple numerical on Carnot vapour Cycle & Rankine Cycle. |
| | 1st | |
| TU | | Solve simple numerical on Carnot vapour Cycle & Rankine Cycle. |
| 13 TH | 2nd | Solve simple numerical on carry |
| | 0.1 | Heat Transfer |
| | 3rd | Modes of Heat Transfer (Conduction, Convection, Radiation). |
| | | Modes of Heat Transfer (Conduction, Convection, Radiation). |
| | 4th | |
| | | Fourier law of heat conduction and thermal conductivity (k). |
| | 1st | |
| | | Fourier law of heat conduction and thermal conductivity (k). |
| T 11 | 2nd | Tourier law of heavy |
| 14 TH | | Newton's laws of cooling |
| | 3rd | |
| | 4th | Newton's laws of cooling |
| | 4111 | a Virghhoff's law) onlystatement |
| | 1st | Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) onlystatement |
| | 150 | -l-wivetion V, no numerical propicity |
| 15 [™] | 2nd | Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) onlystatement |
| | Zilu | no derivation & no numerical problem. |
| | 2 | |
| | 3rd | Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility |
| | 4.1 | |
| | 4th | Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility |
| | | Diden body Indiana. |

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R.K INSTITUTE OF ENGINEERING & TECHNOLOGY At/Po:Kantapada-Apuja, Niali, Dist-Cuttack, Odisha DEPARTMENT OF MECHANICAL ENGINEERING -:LESSON PLAN:-

| | | OLILANA VIVE E BACTAVE |
|-----------------|------------------------|--|
| Discipline:- | Semester: | Name of the teaching faculty:- |
| MECHANICAL | 4 TH | Semester 4th from date: 63.02,22 To Date: 30.04.22 |
| Subject. | No. Of | Semester 4th |
| THERMAL | days / per | from date: 63.02-22 To Date: 30-04-22 |
| ENGINEERING-II | week class | No. Of weeks:- US |
| N) | allotted:- by | |
| Week | Class day | Theory/ Practical Topics : |
| | 1st | Performance of I.C engine |
| | | Define mechanical efficiency, Indicated thermal efficiency, |
| 1 ST | 2nd | Define mechanical efficiency, Indicated thermal efficiency, |
| | 3rd | Relative Efficiency, brake thermal efficiency overall efficiency |
| | | Mean effective pressure &specific fuel consumption. |
| | 4th | Relative Efficiency, brake thermal efficiency overall efficiency |
| | | Mean effective pressure &specific fuel consumption. |
| | 1st | Define air-fuel ratio & calorific value of fuel. |
| 2 ND | 2nd | Define air-fuel ratio & calorific value of fuel. |
| _ | 3rd | Work out problems to determine efficiencies & specific fuel consumption. |
| | 4th | Work out problems to determine efficiencies & specific fuel consumption. |
| | 1st | Air Compressor |
| | | Explain functions of compressor & industrial use of compressor air |
| 3^{RD} | 2nd | Explain functions of compressor & industrial use of compressor air |
| | 3rd | Classify air compressor & principle of operation. |
| | 4th | Classify air compressor & principle of operation. |
| | 1st | Describe the parts and working principle of reciprocating Air compressor |
| Į TH | 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 | Explain the terminology of reciprocating compressor such as bore, stroke, |
| | 1-1 | Pressure ratio free air delivered &Volumetric efficiency. |
| | 1st | Derive the work done of single stage & two stage compressor with and without |
| | | Clearance. |

| 5 TH | 2nd | Derive the work done of single stage & two stage compressor with and without Clearance. |
|------------------|--|---|
| | 3rd | Solve simple problems (without clearance only) |
| | 4th | Solve simple problems (without clearance only) |
| | 1st | Properties of Steam |
| | | Difference between gas & vapors. |
| 6 TH | 2nd | Difference between gas & vapors. |
| | 3rd | Formation of steam. |
| | Jiu | Representation on P-V, T-S, H-S, & T-H diagram. |
| | 4th | Formation of steam. |
| | 401 | Representation on P-V, T-S, H-S, & T-H diagram. |
| | 1.0+ | Definition & Properties of Steam. |
| | 1st | Use of steam table & mollier chart for finding unknown properties. |
| | 3-4 | Definition & Properties of Steam. |
| 7 TH | 2nd | Use of steam table & mollier chart for finding unknown properties. |
| / | 2 -1 | Non flow & flow process of vapour. |
| | 3rd | P-V, T-S & H-S, diagram. |
| | | Non flow & flow process of vapour. |
| | 4th | |
| | | P-V, T-S & H-S, diagram. |
| | 1st | Determine the changes in properties & solve simple numerical. |
| ÷⊔ | 2nd | Determine the changes in properties & solve simple numerical. |
| 8 TH | 3rd | Steam Generator |
| | | Classification & types of Boiler. |
| | 4th | Classification & types of Boiler. |
| | 1st | Important terms for Boiler. |
| | | Important terms for Boiler. |
| 9 TH | 2nd | |
| 5 | 3rd | Comparison between fire tube & Water tube Boiler. |
| | 4th | Comparison between fire tube & Water tube Boiler. |
| | | Description & working of common boilers (Cochran, Lancashire, Babcock & |
| | 1st | Wilcox Boiler) |
| | | Description & working of common boilers (Cochran, Lancashire, Babcock & |
| 구니 | 2nd | Description & working of common boners (coefficient particular) |
| 10 TH | | Boiler Draught (Forced, induced & balanced) |
| | 3rd | |
| | 4th | Boiler Draught (Forced, induced & balanced) |
| | 1st | Boiler mountings & accessories. |
| | | Boiler mountings & accessories. |
| TU | 2nd | Rôllet Hioniguês & access |
| 1 TH | The state of the s | |
| 11 TH | 3rd | Steam Power Cycles |

| | 4th | Carnot cycle with vapour. |
|------------------------|-----|--|
| | 1st | Derive work & efficiency of the cycle. |
| | | Rankine cycle. |
| 12 TH | | Representation in P-V, T-S & h-s diagram. |
| | 2nd | Derive work & efficiency of the cycle. |
| | | Rankine cycle. |
| | | Representation in P-V, T-S & h-s diagram. |
| | 3rd | Derive Work & Efficiency. |
| | | Effect of Various end conditions in Rankine cycle. |
| | | Reheat cycle & regenerative Cycle. |
| | 4th | Derive Work & Efficiency. |
| | | Effect of Various end conditions in Rankine cycle. |
| | | Reheat cycle & regenerative Cycle. |
| | 1st | Solve simple numerical on Carnot vapour Cycle & Rankine Cycle. |
| 13 TH | 2nd | Solve simple numerical on Carnot vapour Cycle & Rankine Cycle. |
| | 3rd | Heat Transfer |
| | | Modes of Heat Transfer (Conduction, Convection, Radiation). |
| | 4th | Modes of Heat Transfer (Conduction, Convection, Radiation). |
| 14 TH | 1st | Fourier law of heat conduction and thermal conductivity (k). |
| | 2nd | Fourier law of heat conduction and thermal conductivity (k). |
| | 3rd | Newton's laws of cooling |
| | 4th | Newton's laws of cooling |
| 15 [™] | 1st | Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) onlystatement, |
| | • | no derivation & no numerical problem. |
| | 2nd | Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) onlystatement, |
| | | no derivation & no numerical problem. |
| | 3rd | |
| | | Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility |
| | 4th | |
| | | Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility |



R.K INSTITUTE OF ENGINEERING & TECHNOLOGY At/Po:Kantapada-Apuja, Niali, Dist-Cuttack, Odisha DEPARTMENT OF MECHANICAL ENGINEERING

-: LESSON PLAN:-

| Discipline:- MECHANICAL | Semester: 4 TH | Name of the teaching faculty: Debols S Dash & Semester hey sem Song hamabee Beherry from date: 14.62.23 To Date: 23.05.23 |
|----------------------------|------------------------------|--|
| Subject. | No. Of | Semester hey sem |
| THERMAL | days / per | from date: 14.62.23 To Date: 23.65.23 |
| ENGINEERING-II | week class | No. Of weeks:- |
| ÷ | allotted:- by | |
| Week | Class day | Theory/ Practical Topics : |
| · · | 1st | Performance of I.C engine |
| | | Define mechanical efficiency, Indicated thermal efficiency, |
| 1 ST | 2nd | Define mechanical efficiency, Indicated thermal efficiency, |
| | 3rd | Relative Efficiency, brake thermal efficiency overall efficiency |
| | | Mean effective pressure &specific fuel consumption. |
| | 4th | Relative Efficiency, brake thermal efficiency overall efficiency |
| | | Mean effective pressure &specific fuel consumption. |
| | 1st | Define air-fuel ratio & calorific value of fuel. |
| 2 ND | 2nd | Define air-fuel ratio & calorific value of fuel. |
| _ | 3rd | Work out problems to determine efficiencies & specific fuel consumption. |
| | 4th | Work out problems to determine efficiencies & specific fuel consumption. |
| deconstructed | 1st | Air Compressor |
| | | Explain functions of compressor & industrial use of compressor air |
| 3 RD | 2nd | Explain functions of compressor & industrial use of compressor air |
| | 3rd | Classify air compressor & principle of operation. |
| | 4th | Classify air compressor & principle of operation. |
| enge 17 | 1st | Describe the parts and working principle of reciprocating Air compressor |
| 4 TH | 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 | Explain the terminology of reciprocating compressor such as bore, stroke, Pressure ratio free air delivered &Volumetric efficiency. |
| September 1 | 1st | Derive the work done of single stage & two stage compressor with and without Clearance. |

| -TH | 2nd | Derive the work done of single stage & two stage compressor with and without Clearance. |
|------------------------|--------------|---|
| | 3rd | Solve simple problems (without clearance only) |
| | 4th | Solve simple problems (without clearance only) |
| | 1st | Properties of Steam |
| | | Difference between gas & vapors. |
| TU | 2nd | Difference between gas & vapors. |
| o [™] | 1 harden and | Formation of steam. |
| | 3rd | |
| | | Representation on P-V, T-S, H-S, & T-H diagram. Formation of steam. |
| | 4th | |
| -16 | | Representation on P-V, T-S, H-S, & T-H diagram. |
| | 1st | Definition & Properties of Steam. |
| | | Use of steam table & mollier chart for finding unknown properties. |
| | 2nd | Definition & Properties of Steam. |
| 7 TH | | Use of steam table & mollier chart for finding unknown properties. |
| , | 3rd | Non flow & flow process of vapour. |
| | | P-V, T-S & H-S, diagram. |
| | 4th | Non flow & flow process of vapour. |
| | 1000 | P-V, T-S & H-S, diagram. |
| | 1st | Determine the changes in properties & solve simple numerical. |
| | 2nd | Determine the changes in properties & solve simple numerical. |
| 8 TH | 3rd | Steam Generator |
| | | Classification & types of Boiler. |
| | 4th | Classification & types of Boiler. |
| | 1st | Important terms for Boiler. |
| | 2nd | Important terms for Boiler. |
| 9 TH | | Comparison between fire tube & Water tube Boiler. |
| | 3rd | |
| | 4th | Comparison between fire tube & Water tube Boiler. |
| | 1st | Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler) |
| 4 OTH | 2nd | Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler) |
| 10 TH | 3rd | Boiler Draught (Forced, induced & balanced) |
| | | Boiler Draught (Forced, induced & balanced) |
| | 4th | |
| | 1st | Boiler mountings & accessories. |
| | 2nd | Boiler mountings & accessories. |
| 11 [™] | 3rd | Steam Power Cycles |
| | Siu | Carnot cycle with vapour. |

| | 4th | Carnot cycle with vapour. |
|------------------|------|--|
| | 1st | Derive work & efficiency of the cycle. |
| | | Rankine cycle. |
| | | Representation in P-V, T-S & h-s diagram. |
| 12 TH | 2nd | Derive work & efficiency of the cycle. |
| | | Rankine cycle. |
| | | Representation in P-V, T-S & h-s diagram. |
| | 3rd | Derive Work & Efficiency. |
| | 310 | Effect of Various end conditions in Rankine cycle. |
| | | Reheat cycle & regenerative Cycle. |
| | 4th | Derive Work & Efficiency. |
| | 401 | Effect of Various end conditions in Rankine cycle. |
| | | Reheat cycle & regenerative Cycle. |
| - | 1st | Solve simple numerical on Carnot vapour Cycle & Rankine Cycle. |
| | 150 | |
| 13 TH | 2nd | Solve simple numerical on Carnot vapour Cycle & Rankine Cycle. |
| | 3rd | Heat Transfer |
| | 0.0 | Modes of Heat Transfer (Conduction, Convection, Radiation). |
| | 4th | Modes of Heat Transfer (Conduction, Convection, Radiation). |
| | | |
| | 1st | Fourier law of heat conduction and thermal conductivity (k). |
| | | Fourier law of heat conduction and thermal conductivity (k). |
| | 2nd | Fourier law of heat conduction and thermal conduction, () |
| 14 TH | | Newton's laws of cooling |
| | 3rd | Herres, e and e |
| | 4th | Newton's laws of cooling |
| | 4111 | |
| 15 TH | 1st | Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) onlystatement, |
| | | no derivation & no numerical problem. |
| | 2nd | Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) onlystatement, |
| | 2110 | no derivation & no numerical problem. |
| | 3rd | |
| | Siu | Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility |
| | 4th | |
| | 401 | Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility |

PRINCIPAL
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