| Discipline: Mechanical Engineering | Semester : 4th Semester-2020-21 | Name of the Teaching Faculty: Shri SHEKHAR KUMAR SAHU, PTGF mechanical Engineering |
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| Subject: Theory Of Machine | No. of Days/week Class Allotted: 60 | Semester from date: 05/04/ 2021 to date: 30/06/2021 No of weeks: 18 |
| week | Class Day | Theory Topics |
| 1st | 1st | Link ,kinematic chain, mechanism, machine |
| | 2nd | Inversion, four bar link mechanism and its inversion |
| | 3rd | Lower pair and higher pair |
| | 4th | Cam and followers |
| 2nd | 1st | Friction between nut and screw for square thread, screw jack |
| | 2nd | Solving Basic Problems |
| | 3rd | Bearing and its classification, Description of roller, needle roller& ball bearings. |
| | 4th | Torque transmission in flat pivot & conical pivot bearings. |
| 3rd | 1st | Solving Basic Problems |
| | 2nd | Flat collar bearing of single and multiple types. |
| | 3rd | Solving Basic Problems |
| | 4th | Torque transmission for single and multiple clutches |
| 4th | 1st | Solving Basic Problems |
| | 2nd | Working of simple frictional brakes. |
| | 3rd | Working of Absorption type of dynamometer |
| | 4th | Solving Basic Problems |
| 5th | 1st | Concept of power transmission |
| | 2nd | Type of drives, belt, gear and chain drive. |
| | 3rd | Computation of velocity ratio, length of belts (open and cross) with and without slip. |
| | 4th | Solving Basic Problems |
| 6th | 1st | Ratio of belt tensions, centrifugal tension and initial tension. |
| | 2nd | Solving Basic Problems |
| | 3rd | Power transmitted by the belt. |
| | 4th | Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension. |
| 7th | 1st | V-belts and V-belts pulleys. |

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| | 2nd | Concept of crowning of pulleys. |
| | 3rd | Gear drives and its terminology. |
| | 4th | Gear trains, working principle of simple, compound |
| 8th | 1st | Problems on Gear Ratio |
| | 2nd | Reverted and epicyclic gear trains. |
| | 3rd | Problems on Gear Ratio |
| | 4th | Function of governor |
| 9th | 1st | Classification of governor |
| | 2nd | Working of Watt governor |
| | 3rd | Solving Some Basic Problems |
| | 4th | Working of Porter governor. |
| 10th | 1st | Solving Some Basic Problems |
| | 2nd | Working of Proel governor. |
| | 3rd | Solving Some Basic Problems |
| | 4th | Working of Hartnell governors. |
| 11th | 1st | Solving Some Basic Problems |
| | 2nd | Conceptual explanation of sensitivity, stability and isochronisms |
| | 3rd | Function of flywheel. |
| | 4th | Fluctuation of energy and coefficient of fluctuation of speed. |
| 12th | 1st | Basic Problem On Fly Wheel |
| | 2nd | Concept of static and dynamic balancing. |
| | 3rd | Static balancing of rotating parts. |
| | 4th | Principles of balancing of reciprocating parts. |
| 13th | 1st | Solving Some Basic Problems |
| | 2nd | Causes and effect of unbalance. |
| | 3rd | Difference between static and dynamic balancing |
| | 4th | Introduction to Vibration and related terms (Amplitude, time period and frequency, cycle) |
| 14th | 1st | Classification of vibration. |
| | 2nd | Basic concept of natural, forced & damped vibration |
| | 3rd | Torsional and Longitudinal vibration. |
| | 4th | Solving Some Basic Problems |
| 15th | 1st | Causes & remedies of vibration |
| | 2nd | Revision chapter 1 |
| | 3rd | Revision chapter 2 |
| | 4th | Revision chapter 3 |
| 16th | 1st | Revision chapter 3 |
| | 2nd | Revision chapter 4 |
| | 3rd | Revision chapter 4 |
| | 4th | Revision chapter 5 and 6 |
| 17th | 1st | Model test 1 |
| | 2nd | Model test 2 |
| | 3rd | Model test 3 |
| | 4th | Model test 4 |
| 18th | 1st | Model test 5 |
| | 2nd | Model test 6 |
| | 3rd | Model test 7 |
| | 4th | Model test 8 |