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| **Discipline:-MECHANICAL ENGG.** | | **SEM:-4TH** | | **Name of Teaching Faculty:- Saurav Ranjan Pradhan** |
| **SUB:-Theory of Machines** | | **No of Days /per week class allotted:-4** | | **Semester From Date:-02.01.19 To Date:-15.04.19 No of Weeks-13** |
| **Week** | | **Class Day** | | **Theory Topics** |
| **1ST** | | 1st | | Introduction, Link, kinematic chain |
| 2nd | | Mechanism, machine |
| 3rd | | Four bar link mechanism |
| 4th | | Inversion |
| **2ND** | | 1st | | Lower pair and higher pair, Cam and followers |
| 2nd | | Chapter-1 Discussion & Assignment Questions |
| 3rd | | Friction, Related Problem |
| 4th | | Friction between nut and screw for square thread |
| **3RD** | | 1st | | Screw jack |
| 2nd | | Bearing and its classification, Description of roller, needle roller & ball bearings |
| 3rd | | Torque transmission in flat pivot bearings, Related Problem |
| 4th | | Torque transmission in conical pivot bearings, Related Problem |
| 4TH | | 1st | | Flat collar bearing of single and multiple types, Related Problem |
| 2nd | | Torque transmission for single and multiple clutches, Related Problem |
| 3rd | | Working of simple frictional brakes |
| 4th | | Working of Absorption type of dynamometer |
| 5TH | | 1st | | Chapter-2 Discussion & Assignment Questions |
| 2nd | | Concept of power transmission, Type of drives, belt, gear and chain drive |
| 3rd | | Computation of velocity ratio |
| 4th | | Length of belts (open) , Related Problem |
| 6TH | | 1st | | Length of belts (cross), Related Problem |
| 2nd | | Ratio of belt tensions, Related Problem |
| 3rd | | Centrifugal tension, Related Problem |
| 4th | | Initial tension, Related Problem |
| 7TH | | 1st | | V-belts and V-belts pulleys, crowning of pulleys |
| 2nd | | Gear drives and its terminology |
| 3rd | | Gear trains, Working principle of simple gear trains |
| 4th | | Working principle of compound gear trains |
| 8TH | | 1st | | Working principle of reverted gear trains |
| 2nd | | Working principle of epicyclic gear trains |
| 3rd | | Chapter-3 Discussion & Assignment Questions |
| 4th | | Function of governor, Classification of governor |
| 9TH | | 1st | | Working of Watt governors, Related Problem |
| 2nd | | Working of Porter governors, Related Problem |
| 3rd | | Working of Proel governors, Related Problem |
| 4th | | Working of Hartnell governors, Related Problem |
| 10TH | | 1st | | Sensitivity, stability and isochronism |
| 2nd | | Function of flywheel, Comparison between flywheel & governor |
| 3rd | | Fluctuation of energy and coefficient of fluctuation of speed |
| 4th | | Chapter-4 Discussion & Assignment Questions |
| 11TH | | 1st | | Concept of static and dynamic balancing |
| 2nd | | Static balancing of rotating parts |
| 3rd | | Principles of balancing of reciprocating parts |
| 4th | | Causes and effect of unbalance, Difference between static and dynamic balancing |
| 12TH | | 1st | | Chapter-5 Discussion & Assignment Questions |
| 2nd | | Vibration and related terms (Amplitude, time period and frequency, cycle) |
| 3rd | | Classification of vibration |
| 4th | | Basic concept of natural vibration |
| 13TH | | 1st | | Basic concept of forced vibration |
| 2nd | | Basic concept of damped vibration |
| 3rd | | Causes & remedies of vibration |
| 4th | | Chapter-6 Discussion & Assignment Questions |
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| **Faculty Signature HOD Academic Co-ordinator** | | | | |
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| **PRINCIPAL** | | | | |
| **Govt. Polytechnic, Puri** | | | | |