

Discipline -  
Mechanical  
Subject :

Semester 4th

Name of the Faculty -  
Smita Kanti Saha  
Sudipto Das - 05/04/20

Theory of Machine

no of days/  
classes allotted - 6

3

Week	Class day	Theory Topics
	1st	Introduction
5 <sup>th</sup> April	2nd	Kinematic Link and it's types
to	3rd	Difference between Machine & structure
10 <sup>th</sup> April	4 <sup>th</sup>	Kinematic Pair, Kinematic Chain
	5 <sup>th</sup>	Classification of Kinematic Pair
	6 <sup>th</sup>	Types of Constrained Motion.
12 <sup>th</sup> Apr	1st	Types link of kinematic pair (Continued)
to	2nd	Types of Constrained motion, joints
17 <sup>th</sup> Apr		and inversion of mechanism.
	3rd	Inversion of four bar chain.
	4 <sup>th</sup>	Maha Visuba Sankranti :
	5 <sup>th</sup>	Inversion of single slider crank chain
	6 <sup>th</sup>	Law of frictions, limiting friction force.
19 <sup>th</sup> Apr	1st	Friction between nut and screw for screw
to	2nd	jack, thread.
23 <sup>rd</sup> Apr	3rd	Bearing and it's classification
	4 <sup>th</sup>	Description of roller, needle roller & ball bearing
	5 <sup>th</sup>	Ram Navami
	6 <sup>th</sup>	Torque transmission in flat pin & conical pin
		Flat collar bearing of single & multiple type.
25 <sup>th</sup> Apr	1st	Working of simple frictional brakes
to	2nd	Working of Absorption type of dynamometer.
30 <sup>th</sup> Apr	3rd	Concept of power transmission
	4 <sup>th</sup>	Type of drives, belt, gear chain drive.
	5 <sup>th</sup>	Computation of vel. ratio, length of
	6 <sup>th</sup>	belts (open and cross) with and without S.

Week	Class day	Theory Topics
	1st	Ratio of belt tensions.
3rd may to	2nd	centrifugal tension & initial tension.
	3rd	Power transmitted by the belt.
8th may	4th	Determine belt thickness and width for
	5th	given permissible stress for open and
	6th	crossed belt considering centrifugal tension.
10th may to	1st	V-belts and V-belt pulleys
	2nd	Concept of crowning of pulleys.
15th may	3rd	Gear drives and it's terminology.
	4th	Gear trains, working principle of
	5th	simple, compound, reverted and epicyclic gear
	6th	Id-VI - Fitre
	1st	Function of governor
17th may to	2nd	Classification of governor.
	3rd	Working of Watt, porter, porter
29st may	4th	and Hartnell governors
	5th	Conceptual explanation of sensitivity,
	6th	stability and isochronism.
	1st	Function of Flywheel
27th may to	2nd	Comparison bet <sup>n</sup> flywheel & governor.
	3rd	Fluctuation of energy.
29th may	4th	Coeff. of fluctuation of speed
	5th	Previous topic Discussion
	6th	Revision
	1st	Concept of static & dynamic
	2nd	balancing.

Week	Class day	Theory Topics
3 <sup>rd</sup> May to 5 <sup>th</sup> June	2 <sup>nd</sup> 4 <sup>th</sup> 5 <sup>th</sup> 6 <sup>th</sup>	Static balancing of rotating parts Revision Principles of balancing of reciprocating parts. Cause and effects of unbalance.
7 <sup>th</sup> June to 12 <sup>th</sup> June	1 <sup>st</sup> 2 <sup>nd</sup> 3 <sup>rd</sup> 4 <sup>th</sup> 5 <sup>th</sup> 6 <sup>th</sup>	Difference between static and dynamic balancing. Revision Introduction to vibration and related Sabitai Amabaya terms (Amplitude, time period & frequency cycle.
14 <sup>th</sup> June to 19 <sup>th</sup> June	1 <sup>st</sup> 2 <sup>nd</sup> 3 <sup>rd</sup> 4 <sup>th</sup> 5 <sup>th</sup> 6 <sup>th</sup>	Discussion of previous topics. Problems on above. class Raja Sankranti Classification of vibration. Continue. Revision.
21 <sup>st</sup> June to 26 <sup>th</sup> June	1 <sup>st</sup> 2 <sup>nd</sup> 3 <sup>rd</sup> 4 <sup>th</sup> 5 <sup>th</sup> 6 <sup>th</sup>	Basic concept of natural, forced & damped vibration. Continuation. Torsional vibration. Longitudinal vibration. Revision.
27 <sup>th</sup> June		

Week	Class day	Theory Topics
28 <sup>th</sup> June to 30 <sup>th</sup> June	1 <sup>st</sup>	Causes & Remedies of vibration
	2 <sup>nd</sup>	Practice previous problems.
	3 <sup>rd</sup>	Previous questions Discussion.
	4 <sup>th</sup>	Revision.
	5 <sup>th</sup>	Revision
	6 <sup>th</sup>	Revision

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05/04/2021