BHADRAK ENGINEERING SCHOOL & TECHNOLOGY (BEST), ASURALI, BHADRAK

THEORY OF MACHINES (Th- 01)

TOPIC WISE DISTRIBUTION OF PERIODS

Chapter No.	Topics	Periods as per Syllabus	Required period	Expected Marks
01	Simple Mechanism	08	06	15
02	Friction	12	16	25
03	Power Transmission	12	18	25
04	Governor & Flywheel	12	09	15
05	Balancing of Machines	08	04	10
06	Vibration of Machine Parts	08	04	10
	TOTAL	**60**	**57**	100

Sign of Lect. **Sign of HOD.** **Sign of AIC** **Sign of Vice Principal**

LESSON PLAN

Discipline: Mechanical Engg.	**Semester:** Fourth (4^{th})	**Name Of The Faculty:** Er Surya Kanta Kar
Subject: Theory of Machines	**No of days/ week class allotted:** Six(6)	**Semester from date:** 14. 02.2023 **to Date:** 23. 05.2023 **No of weeks: 15**
WEEK	**CLASS DAY**	**THEORY TOPICS**
1^{st}	1^{st}	**Chapter No.- 1: Simple Mechanism** Introduction
	2^{nd}	Link
	3^{rd}	Kinematic Chain
	4^{th}	Kinematic pair, Lower pair and higher pair
	5^{th}	Mechanism, Machine
	6^{th}	Inversion, four bar link mechanism
2^{nd}	1^{st}	Inversion of four bar chain
	2^{nd}	Cam and followers
	3^{rd}	***Possible Question Answer Discussion***
	4^{th}	**Chapter No.- 2: Friction** Revision of Friction previously taught in Engg Mechanics
	5^{th}	Friction between nut and screw for square thread, screw jack
	6^{th}	Numerical problem
3^{rd}	1^{st}	Numerical problem
	2^{nd}	Bearing and its classification,
	3^{rd}	Roller, needle roller & ball bearings.
	4^{th}	Torque transmission in flat pivot bearing
	5^{th}	Torque transmission in conical pivot bearings.
	6^{th}	Numerical problem
4^{th}	1^{st}	***Monthly Test- 1***
	2^{nd}	Single flat collar bearing
	3^{rd}	Multiple flat collar bearing
	4^{th}	Numerical problem
	5^{th}	Torque transmission for single clutches
	6^{th}	Torque transmission for multiple clutches
5^{th}	1^{st}	Numerical problem
	2^{nd}	Working of simple frictional brakes.
	3^{rd}	Working of Absorption type of dynamometer
	4^{th}	***Possible Question Answer Discussion***
	5^{th}	**Chapter No.- 3: Power Transmission** Concept of power transmission
	6^{th}	Type of drives, belt, gear and chain drive.
6^{th}	1^{st}	Computation of velocity ratio
	2^{nd}	Length of belt of open belt drive with and without slip
	3^{rd}	Length of belt of cross belt drive with and without slip

	4th	Ratio of belt tensions,
	5th	Centrifugal tension
	6th	Initial Tension.
7th	1st	***Monthly Test- 2***
	2nd	Power transmitted by the belt. Numerical problem
	3rd	Numerical problem
	4th	Determine The belt thickness and width for permissible stress for open and cross belt drive considering centrifugal tension
	5th	V-belts and V-belts pulleys.
	6th	Concept of crowning of pulleys.
8th	1st	Gear drives and its terminology.
	2nd	Gear trains, Working principle of simple gear trains.
	3rd	Working principle of compound gear trains.
	4th	Working principle of reverted gear trains.
	5th	Working principle of epicyclic gear trains.
	6th	Numerical problem
9th	1st	Numerical problem
	2nd	***Possible Question Answer Discussion***
	3rd	**Chapter No.- 4: Governors and Flywheel** Function of governor
	4th	Classification of governor
	5th	Working of Watt governors.
	6th	Working of Porter governors.
10th	1st	***Monthly Test- 3***
	2nd	Working of Proel governors.
	3rd	Working of Hartnell governors.
	4th	Conceptual explanation of sensitivity, stability and isochronism.
	5th	Function of flywheel.
	6th	Comparison between flywheel & governor.
11th	1st	Fluctuation of energy and coefficient of fluctuation of speed.
	2nd	Numerical problem
	3rd	***Possible Question Answer Discussion***
	4th	**Chapter No.- 5: Balancing of Machine** Concept of static and dynamic balancing
	5th	Static balancing of rotating parts
	6th	Principles of balancing of reciprocating parts
12th	1st	Causes and effect of unbalance
	2nd	Difference between static and dynamic balancing
	3rd	***Possible Question Answer Discussion***
	4th	**Chapter No.- 6: Vibration of Machine Parts** Introduction to Vibration
	5th	Related terms (Amplitude, time period and frequency, cycle)
	6th	Classification of vibration.

13th	1st	***Monthly Test- 4***
	2nd	Basic concept of natural, forced & damped vibration
	3rd	Torsional and Longitudinal vibration. Causes & remedies of vibration.
	4th	***Possible Question Answer Discussion***
	5th	Review Class for Chapter No.- 01
	6th	Review Class for Chapter No.- 02
14th	1st	Review Class for Chapter No.- 02
	2nd	Review Class for Chapter No.- 02
	3rd	Review Class for Chapter No.- 03
	4th	Review Class for Chapter No.- 03
	5th	Review Class for Chapter No.- 03
	6th	Review Class for Chapter No.- 04
15th	1st	Review Class for Chapter No.- 05
	2nd	Review Class for Chapter No.- 06
	3rd	Previous Year (S- 22) Question Answer Discussion
	4th	Previous Year (S- 22) Question Answer Discussion
	5th	Previous Year (S- 21) Question Answer Discussion
	6th	Previous Year (S- 21) Question Answer Discussion

Chapters covered up to IA: ***1, 2 & 3.***