GOVERNMENT POLYTECHNIC, KORAPUT

DEPARTMENT OF MECHANICAL ENGINEERING

scipline: ECHANICAL NGG	Semester: 4th	Name of the Teaching Faculty: SHARMILA SABAR
Subject: THEORY OF MACHINE	No. of days/per week class allotted:4	Semester From date: 20/4/22 To Date: 03/8/22 . No. of Weeks:15

COURSE OUTCOMES

Students will develop an ability towards

1.Understanding machine system consisting of different link assemblies as components

2.Comprehending Working principle of machine components such as clutch, brakes, bearings based on friction

3. Comprehending working principles related to power transmission systems and predicting the work involved and efficiency.

4.Comprehending working principle in speed and torque regulating devices such as governor and flywheels

5.Determination of amount and position of masses required towards static and dynamic balancing

6. Comprehending types and causes of vibration in machines and predicting remedies measure

Week	Class Day	Theory/Practical Topics
1ST	1ST	Introduction, kinamatic link,kinematic pair, classification of kinamatic pair
	2ND	Types of constrained motion,kinamatic chain
	3RD	Mechanism, machine ,inversion
	4TH	Four bar link mechanism & inversions
2ND	1ST	Continued....
	2ND	Lower pair, higher pair, cam & follower
	3RD	Cam & follower
	4TH	Review of the chapter....
3RD	1ST	Friction, friction between nut & screw for square thread
	2ND	Screwjack
	3RD	Bearing & it's classification
	4TH	Description of roller, needle roller & ball bearing
4TH	1ST	Toque transmission in flat pivot bearing & related numerical
	2ND	Torque transmission in conical pivot bearing & related numerical
	3RD	Flat collar bearing of single & multiple types related numerical
	4TH	Torque transmission for single plate clutch & related numerical
5TH	1ST	Torque transmission for multiple clutch & related numerical
	2ND	Working of simple frictional brake
	3RD	Working of absorption type of dynamometer

	4TH	Review of the chapter...
6TH	1ST	Concept of power transmission, types of drives
	2ND	Types of belt, gear & chain drives, computation of velocity ratio
	3RD	Length of open belt & related numerical
	4TH	Length of cross belt& related numerical
7TH	1ST	Ratio of belt tension, centrifugal tension , initial tension
	2ND	Vbelts & v belt pulleys crowning
	3RD	Gear drives & terminology
	4TH	Gear trains , working of simple gear train
8TH	1ST	Working of reverted & compound gear train
	2ND	Working of epicyclic gear train
	3RD	Numericals
	4TH	Review of the chapter....
9TH	1ST	Governor, classification of governors
	2ND	Working of watt governor & related numerical
	3RD	Working of proel governor & related numerical
	4TH	Working of porter governor & related numerical
10TH	1ST	Working of hartnell governor & related numerical
	2ND	Continued..
	3RD	Sensitivity, stability, isochronism
	4TH	Flywheel, function of flywheel, difference between flywheel & governo
11TH	1ST	Fluctuation of energy & cofficieant of fluctuation speed
	2ND	Numerical
	3RD	Numerical
	4TH	Review of the chapter....
12TH	1ST	Balancing , concept of static balancing
	2ND	Static balancing
	3RD	Dynamic balancing
	4TH	Dynamic balancing
13TH	1ST	Principle of balancing of reciprocating parts
	2ND	Causes & effect of balancing
	3RD	Difference between static & dynamic balancing
	4TH	Review of the chapter....
14TH	1ST	Introduction to vibration & related terms
	2ND	Classification of vibration
	3RD	Basic concept of natural vibration
	4TH	Basic concept of forced vibration
15TH	1ST	Basic concept of damped vibration
	2ND	Torsional & longitudinal vibration
	3RD	Causes & remedies of vibration
	4TH	Review of the chapter.....

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3RD

TYPES OF INSPECTION

ADVANTAGES &

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NING RESOURCES:

1. **Text Book of Theory of Machine R.S Khurmi S.Chand**
2. **Text Book of Theory of Machine R.K. Rajput S.Chand**
3. **Text Book of Theory of Machine P.L.Ballany Dhanpat Rai**
4. **Text Book of Theory of Machine Thomas Bevan Pearsion**

Sign. Of Faculty concerned

Sharmila Sabar

Signature. Of HOD

Principal