Discipline: MECHANICAL	Semester: 5th	Name of the Teaching Faculty: Rakesh kr. Rout PTGF : Mechanical
Subject: DME	No. of days/per week class allotted: 4	Semester From date: 15.7.22 To date: No of weeks: 15
Week	Class Day	Theory Topics:
1st	1st	Introduction to Machine Design and Classify it.
	2nd	Different mechanical engineering materials used in design.
	3rd	Their mechanical and physical properties.
	4th	Define working stress, yield stress
2nd	1st	Define ultimate stress & factor of safety.
	2nd	stress –strain curve for M.S & C.I.
	3rd	Modes of Failure (By elastic deflection, general yielding & fracture)
	4th	State the factors governing the design of machine elements.
3rd	1st	Describe design procedure.
	2nd	Joints and their classification.
	3rd	State types of welded joints .
	4th	State advantages of welded joints over other joints.
4th	1st	Design of welded joints for eccentric loads.
	2nd	State types of riveted joints and types of rivets.
	3rd	Describe failure of riveted joints.
	4th	Determine strength
5th	1st	Efficiency of riveted joints.
	2nd	Design riveted joints for pressure vessel.
	3rd	Solve numerical on Welded Joint
	4th	Solve numerical on Riveted Joints.

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6th	1st	INTRODUCTION OF SHAFT AND KEY DESIGN
	2nd	State function of shafts.
	3rd	State materials for shafts.
	4th	Design solid & hollow shafts to transmit a given power at given rpm based .
7th	1st	Strength: (i) Shear stress, (ii) Combined bending tension;
	2nd	Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity
	3rd	State standard size of shaft as per I.S.
	4th	State function of keys, types of keys & material of keys.
8th	1st	Describe failure of key, effect of key way.
	2nd	Design rectangular sunk key considering its failure against shear & crushing.
	3rd	Design rectangular sunk key by using empirical relation for given diameter of shaft.
	4th	State specification of parallel key, gib-head key, taper key as per I.S.
9th	1st	Solve numerical on Design of Shaft
	2nd	Solve numerical on Design of Key
	3rd	Introduction of Design of Coupling
	4th	Design of Shaft Coupling
10th	1st	Problem on shaft coupling
	2nd	Requirements of a good shaft coupling
	3rd	Types of Coupling.
	4th	Design of Sleeve or Muff-Coupling.
11th	1st	Poblem on sleeve coupling
	2nd	Design of Clamp or Compression Coupling.
	3rd	Problem on sleeve coupling.
	4th	Slove numerical on above coupling
12th	1st	Introduction of Design a closed coil helical spring
	2nd	Materials used for helical spring.
	3rd	Standard size spring wire. (SWG).
	4th	Terms used in compression spring.
13th	1st	Stress in helical spring of a circular wire.
	2nd	Deflection of helical spring of circular wire.
	3rd	Surge in spring.
	4th	Solve numerical on design of closed coil helical compression spring.
14th	1st	Solve numerical on helical spring
	2nd	Solve numerical on surge in spring
	3rd	Solve numerical on deflection of spring.
	4th	Revision class
15th	1st	Revision class
	2nd	Discussion of PYQ
	3rd	Discussion of PYQ
	4th	Discussion of PYQ

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