JHARSUGUDA ENGINEERING SCHOOL,JHARSUGUDA
MECHANICAL ENGINEERING DEPARTMENT

Name of the Faculty: RAKESH KUMAR MAHANTA	Session: 2021-22
Course code.:Th.-2	Course Name: DME
Programe: Diploma	Department: Mechanical
Semester: 5th	Section:M1
Branch:MECHANICAL	

Week	Period	Unit	Hours	Topic to be Covered
1.	1.			Introduction to Machine Design and Classification of machine design
	2.			mechanical properties of engineering materials used in design
	3.			physical properties of engineering materials used in design
	4.			Definition of working stress, yield stress, ultimate stress & factor of safety
2.	5.	1	12	stress –strain curve for C.I.
	6.			stress –strain curve for C.I
	7.			Modes of Failure :By elastic deflection
	8.			Modes of Failure : general yielding
3.	9.			Modes of Failure : fracture
	10.			factors governing the design of machine elements.
	11.			design procedure
	12.			design procedure
4.	13.			Joints and their classification
	14.			State types of welded joints
	15.			State advantages of welded joints over other joints
	16.			Design of welded joints for eccentric loads
5.	17.			Problem on Design of welded joints under different load
	18.			State types of riveted joints and types of rivets
	19.			Describe failure of riveted joints
	20.			strength & efficiency of riveted joints
6.	21.	2	12	Problem on riveted joints
	22.			Problem on riveted joints
	23.			riveted joints for pressure vessel
	24.			Problem on Design of riveted joints for pressure vessel.
7.	25.			function of shafts and materials for shafts
	26.			Design of solid shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension
	27.			Design of hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension
	28.	3	12	Design of solid shafts to transmit a given power at given rpm based on b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity

8.	29.			Design of solid shafts to transmit a given power at given rpm based on b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity
	30.			Problem on Design of Shaft
	31.			Standard size of shaft as per I.S. Function of keys, types of keys & material of keys.
	32.			Describe failure of key, effect of key way.
9.	33.			Design of rectangular sunk key considering its failure against shear & crushing.
	34.			Design of rectangular sunk key by using empirical relation for given diameter of shaft.
	35.			State specification of parallel key, gib-head key, taper key as per I.S.
	36.			Problem on Design of keys.
10.	37.	4	12	Design of Shaft Coupling
	38.			Design of Shaft Coupling
	39.			Requirements of a good shaft coupling
	40.			Types of Coupling.
11.	41.			Problem on Design of Sleeve or Muff-Coupling.
	42.			Problem on Design of Sleeve or Muff-Coupling.
	43.			Design of Sleeve or Muff-Coupling.
	44.			Problem on Design of Sleeve or Muff-Coupling.
12.	45.			Problem on Design of Sleeve or Muff-Coupling.
	46.			Design of Clamp or Compression Coupling.
	47.			Problem on Design of Clamp or Compression Coupling.
	48.			Problem on Design of Clamp or Compression Coupling.
13.	49.	5	12	Materials used for helical spring.
	50.			Standard size spring wire. (SWG)
	51.			Terms used in compression spring.
	52.			Stress in helical spring of a circular wire.
14.	53.			Problem on Stress in helical spring of a circular wire.
	54.			Problem on Stress in helical spring of a circular wire
	55.			Deflection of helical spring of circular wire.
	56.			Problem on Deflection of helical spring of circular wire.
15.	57.			Problem on Deflection of helical spring of circular wire.
	58.			Surge in spring.
	59.			Problem on helical spring
	60.			Problem on helical spring