

PNS SCHOOL OF ENGG. & TECH., MARSHAGHAI

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

SUB: HYDRAULIC MACHINE & INDUSTRIAL FLUID POWER (5TH SEM)

NAME OF THE LECTURER: Er. RAMAKANTA SWAIN

CHAPTER	MONTH	DATE	TOPIC TO BE COVERED
HYDRAULIC TURBINES	SEP	15.09.22	Definition and classification of hydraulic turbines
		16.06.22	Construction and working principle of impulse turbine
		19.09.22	Velocity diagram of moving blades, work done of impulse turbine
		20.09.22	derivation of various efficiencies of impulse turbine
		21.09.22	Velocity diagram of moving blades, work done of francis turbine
		22.09.22	Numerical on turbines
		23.09.22	derivation of various efficiencies of Francis turbine
		24.09.22	Velocity diagram of moving blades, work done of Kaplan turbine
		26.09.22	Numerical on turbines
		27.09.22	Derivation of various efficiencies of Kaplan turbine
		28.09.22	Numerical on turbines
		29.09.22	Numerical on turbines
		30.09.22	Distinguish between impulse turbine and reaction turbine.
	OCT	10.10.22	Doubt clearing
CENTRIFUGAL PUMP	OCT	11.10.22	Construction and working principle of single stage centrifugal pumps
		12.10.22	Construction and working principle of multi stage centrifugal pumps
		13.10.22	work done and derivation of various efficiencies of centrifugal pumps.
		14.10.22	Numerical on centrifugal pumps
		15.10.22	Numerical on centrifugal pumps
		18.10.22	Class Test
		19.10.22	Doubt clearing
RECIPROCATING PUMP	OCT	20.10.22	Describe construction ; working of single acting reciprocating pump.
		21.10.22	Describe construction ; working of double acting reciprocating pump
		22.10.22	13 Derive the formula foe power required to drive the pump (Single acting ; double acting)
		26.10.22	Definition & description of slip
		27.10.22	State positive slip; negative slip; establish relation between slip & coefficient of discharge
		28.10.22	Solving of numerical on above
		29.10.22	Solving of numerical on above
		31.10.22	Solving of numerical on above
	NOV	01.11.22	Doubt clearing
PNEUMATIC CONTROL SYSTEM	NOV	02.11.22	Elements –filter-regulator-lubrication unit
		03.11.22	Pressure control valves
		04.11.22	Pressure relief valves
		05.11.22	Pressure regulation valves
		09.11.22	Direction control valves
		10.11.22	3/2DCV,5/2 DCV,5/3DCV
		11.11.22	Flow control valves
		12.11.22	Throttle valves
		14.11.22	ISO Symbols of pneumatic components
		15.11.22	Pneumatic circuits
		17.11.22	Direct control of single acting cylinder
		18.11.22	Operation of double acting cylinder
		19.11.22	Operation of double acting cylinder with metering in and metering out control
		21.11.22	Class Test
22.11.22	Doubt clearing		
		23.11.22	Hydraulic system, its merit and demerits

HYDRAULIC CONTROL SYSTEM	NOV	24.11.22	Hydraulic accumulators
		25.11.22	Pressure control valves
		26.11.22	Pressure relief valves
		28.11.22	Pressure regulation valves
		29.11.22	Direction control valves
		30.11.22	3/2DCV,5/2 DCV,5/3DCV
	DEC	01.12.22	Flow control valves
		02.12.22	Throttle valves
		03.12.22	Fluid power pumps
		05.12.22	External and internal gear pumps
		06.12.22	Vane pump
		07.12.22	Radial piston pumps
		08.12.22	ISO Symbols for hydraulic components
		09.12.22	Actuators
		10.12.22	Hydraulic circuits
		12.12.22	Direct control of single acting cylinder
		13.12.22	Operation of double acting cylinder
		14.12.22	Operation of double acting cylinder with metering in and metering out control
		15.12.22	Comparison of hydraulic and pneumatic system
		16.12.22	Doubt clearing
		17.12.22	Class Test
		19.12.22	DISCUSSION OF ASSIGNMENT QUESTION
		20.12.22	DISCUSSION OF ASSIGNMENT QUESTION
		21.12.22	PREVIOUS SEMESTER QUESTION DISCUSSION
	22.12.22	PREVIOUS SEMESTER QUESTION DISCUSSION	

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