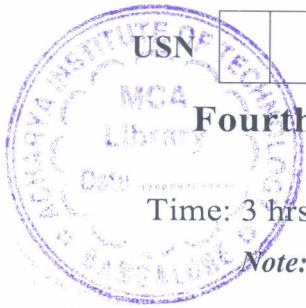


CBCS SCHEME

BMT403



Fourth Semester B.E./B.Tech. Degree Examination, June/July 2025
Hydraulics and Pneumatics

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module - 1		M	L	C
Q.1	a.	Explain basic components of Hydraulic. Power Systems with a neat sketch.		10	L2	CO1
	b.	Explain advantages and applications of fluid power.		10	L2	CO1
OR						
Q.2	a.	Explain constructions and working of following pumps with neat diagram : i) GED Pump ii) Vane Pump		10	L2	CO1
	b.	List and explain pump performance characteristics.		10	L2	CO1
Module - 2						
Q.3	a.	Describe the actuation of single acting and double acting hydraulic cylinder?		08	L2	CO2
	b.	Write a short note on operation of cylinder cushions.		04	L2	CO2
	c.	A hydraulic motor has an 82 cm ³ (0.082-L) volumetric displacement. If it has a pressure rating of 70 bars and it relieves oil from a 0.0006-m ³ /s (0.6 L/S @ 36 L/min) pump. Find the motor i) speed ii) Torque capacity iii) Power capacity.		08	L2	CO2
OR						
Q.4	a.	Explain pressure compensated flow control valve?		08	L2	CO2
	b.	Explain construction and operation of spot type 3/2 valve?		08	L2	CO2
	c.	Find the flow rate in unit of L/S that an axial piston pump delivers at 1000rpm. The pump has nine 15 mm diameter piston arranged on a 125 mm piston circle diameter. The offset angle is set at 10°.		04	L3	CO2
Module - 3						
Q.5	a.	Explain control of single acting cylinder with suitable diagram?		10	L2	CO3
	b.	Explain : i) Hydraulic cylinder sequencing circuit and ii) Automatic cylinder reciprocating system.		10	L2	CO3
OR						
Q.6	a.	Explain sealing devices in brief?		10	L2	CO4
	b.	Discuss wear of moving parts due to solid particle contamination.		10	L2	CO4
Module - 4						
Q.7	a.	Explain Fluid conditioners (FRL limit) in brief?		10	L2	CO4
	b.	Write a note on Pneumatic actuator : Linear cylinder?		10	L2	CO4
OR						
Q.8	a.	Describe following poppet direction control valves with suitable diagram : i) Ball Seat Valve ii) Disc Seat Poppet Valve		12	L2	CO4
	b.	Explain operation of double acting cylinder pneumatic circuit?		08	L2	CO4
Module - 5						
Q.9	a.	Explain Moving Part Logic (MPL) control circuit using following control functions: i) AND ii) OR		10	L2	CO5
	b.	Explain moving part logic sequencing circuit with suitable diagram?		10	L2	CO5
OR						
Q.10	a.	Explain Electro-Pneumatic control circuits for simple single cylinder application using single limit switch?		10	L2	CO5
	b.	Write a note on Electro-Pneumatic box sorting system.		10	L2	CO1
