



CBCS SCHEME

BMT403

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024 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 structure of hydraulic control system with neat sketch.	10	L1	CO1
	b.	What are the advantages and application of hydraulic system?	10	L1	CO1
OR					
Q.2	a.	Explain with neat sketch the working of variable displacement pump.	10	L2	CO2
	b.	An external gear pump has 125mm outside diameter 85mm inside diameter and 40mm width. For a pump speed of 1500rpm, determine the theoretical volumetric displacement and theoretical flow rate. If the volumetric efficiency is 90%, what is the actual flow rate?	10	L3	CO2
Module – 2					
Q.3	a.	Explain working of double acting cylinder with neat sketch. Mention any four advantages of linear cylinders.	10	L2	CO2
	b.	Explain working of swash plate type axial piston motor.	10	L1	CO2
OR					
Q.4	a.	List classification of control valves. Explain working of poppet valve with neat sketch.	10	L1	CO2
	b.	With neat sketch and explain non-pressure compensated FCV with symbolic representation.	10	L3	CO2
Module – 3					
Q.5	a.	With neat hydraulic circuit explain function of regenerative circuit. Mention the ratio of extending and retracting speeds.	10	L3	CO3
	b.	With neat sketch and explain bladder types accumulator with symbolic representation.	10	L2	CO3
OR					
Q.6	a.	With neat sketch and explain constructional features of hydraulic reservoir.	10	L2	CO3
	b.	Explain any five trouble shooting in hydraulic system.	10	L1	CO3

Module – 4

Q.7	a.	What are the advantages, limitation and application of pneumatic system?	10	L1	CO4
	b.	Explain working of end position cushioning seals with neat sketch.	10	L2	CO4

OR

Q.8	a.	Explain types of flow control valves, with neat sketch mention symbolic representation of FCV.	10	L2	CO4
	b.	With neat sketch and explain supply air throttling and exhaust air throttling.	10	L2	CO4

Module – 5

Q.9	a.	With neat sketch, explain how the following functions are generated in pneumatic system: i) AND ii) OR.	10	L2	CO5
	b.	With neat sketch and explain time dependent control circuit.	10	L3	CO5

OR

Q.10	a.	With neat sketch and explain two cylinder circuit for co-ordinated motion control.	10	L3	CO5
	b.	With neat sketch and explain working of solenoid controlled pilot operated DCV.	10	L3	CO5
