

# CBCS SCHEME

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22MIA/MAR22

## Second Semester M.Tech. Degree Examination, June/July 2023 Hydraulics and Pneumatics Control System

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 the applications of pneumatic system.	10	L1	CO1
	b.	With block diagram explain the principle of hydraulic system.	10	L2	CO2
<b>OR</b>					
Q.2	a.	Explain the following : i) Boyle's law ii) Newton's law	10	L1	CO1
	b.	Explain the properties of air.	10	L1	CO1
<b>Module - 2</b>					
Q.3	a.	With an illustration explain AIR pressure relations.	10	L2	CO1
	b.	Design and explain the circuit for copying control for production system.	10	L3	CO3
<b>OR</b>					
Q.4	a.	Explain advantages and distinguish characteristics of compressed air and hydraulic system.	10	L1	CO1
	b.	With an illustration explain the following i) Double acting cylinder ii) 4/3 way valve closed neutral position	10	L2	CO2
<b>Module - 3</b>					
Q.5	a.	With block diagram, explain air generation and distribution system in pneumatic controls.	10	L2	CO2
	b.	With an illustration explain i) Rotary vane compressor ii) Diaphragm compressor	10	L1	CO2
<b>OR</b>					
Q.6	a.	With an illustration explain direction control valves.	10	L1	CO2
	b.	Sketch the symbols of mechanically operated systems in valves.	10	L1	CO2
<b>Module - 4</b>					
Q.7	a.	With an illustration explain the following time delay valve. i) Time delay valve - normally closed ii) Time delay valve - normally open	10	L2	CO3

	b.	With an illustration explain pressure resulting valve used in pneumatic circuits.	10	L2	CO3
<b>OR</b>					
Q.8	a.	With block diagrams, explain direct control and indirect control of a single acting cylinder.	10	L2	CO3
	b.	With an illustration, explain Hydro-Pneumatic systems.	10	L2	CO3
<b>Module - 5</b>					
Q.9	a.	With a circuit diagram, explain fluid power logic OR circuit.	10	L3	CO4
	b.	With an illustration explain fluid power latched (memory) circuit using 5/2 way directional control valve.	10	L3	CO4
<b>OR</b>					
Q.10	a.	With an illustration explain the Bourdon tube pressure gauge.	10	L2	CO4
	b.	With an illustration, explain Wheatstone bridge used for temperature measurement in measuring system.	10	L2	CO4

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