Fifth Semester B.E. Degree Examination, Jan./Feb. 2023
Hydraulics and Pneumatics

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1	a.	Define Pascal's law with neat sketch.	(06 Marks)
	b.	Explain pumping theory.	(06 Marks)
	c.	With neat sketch, describe the variable displacement pump (any one).	(08 Marks)

OR

2	a.	List and briefly explain linear hydraulic actuators of single acting cylinder type.	(10 Marks)
	b.	Discuss classification of positive displacement pumps with advantages.	(10 Marks)

Module-2

3	a.	Explain 3/2 – way valve DCV of 3 ports and 2 position.	(10 Marks)
	b.	List and explain the desirable properties of hydraulic oils.	(10 Marks)

OR

4	a.	Discuss the pressure compensated flow control valve with neat sketch.	(10 Marks)
	b.	Classify the filters in hydraulic system.	(05 Marks)
	c.	Explain Beat ratio and Beat efficiency.	(05 Marks)

Module-3

5	a.	What is regenerative circuit? Discrete with neat sketch.	(10 Marks)
	b.	Discuss the double acting hydraulic cylinder with sketch.	(10 Marks)

OR

6	a.	With neat sketch, explain plot operated pressure control valve.	(10 Marks)
	b.	List hydraulic accumulators and explain spring loaded accumulator.	(10 Marks)

Module-4

7	a.	Discuss the advantages and disadvantages of compressed air.	(10 Marks)
	b.	Explain with sketch the poppet valves.	(10 Marks)

OR

8	a.	Classify the air cylinders and explain briefly any four.	(10 Marks)
	b.	Describe Quick Exhaust Valve with line diagram.	(10 Marks)

Module-5

9	a.	Discuss the applications of multi-cylinders of coordinated motion control type.	(10 Marks)
	b.	Explain principle of cascade system.	(10 Marks)

OR

10		Write notes on:	
	a.	Relay b. Contractor	
	c.	Control Valves (speed/flow) d. Sequential motion control	(20 Marks)