Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) - EXAMINATION - SUMMER 2017

Subject Code: 2142302 Date: 06/06/2017

Subject Name: Industrial Hydraulics and Pneumatics

Time: 10:30 AM to 01:00 PM Total Marks: 70

Instructions:

1. Attempt all questions.

neat sketch

- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

			MARKS
Q.1		Short Questions	14
	1	Define Pressure	
	2	Draw Hydraulic symbol of single acting cylinder	
	3	Write the functions of filter in hydraulic system.	
	4	What is the function of pilot operated check valve?	
	5	Draw Hydraulic symbol of gas charge accumulator	
	6	Draw Hydraulic symbol of Pressure Relief valve.	
	7	List out the types of heat exchangers.	
	8	Draw hydraulic symbol of fixed displacement dual direction	
		hydraulic motor.	
	9	Hydraulic cylinders are(linear/ angular) actuators.	
	10	Write any two application of Pneumatic system.	
	11	Centrifugal pumps aredisplacement pumps.	
	12	Draw hydraulic symbol of sequence valve.	
	13	Draw symbol of 4/3 DCV with solenoid single winding operation	
	14	Write function of counter balance valve.	
Q.2	(a)	State Pascal Law. Explain the importance of it in hydraulic.	03
Q.2	(a) (b)	What is the purpose of a heat exchanger? Name the important	03
	(D)	factors to consider when selecting a heat exchanger	04
	(c)	Discuss types of accumulators in detail.	07
		OR	
	(c)	Discuss external gear motor in detail	07
Q.3	(a)	Write any three requirements for hydraulic oil	03
	(b)	Discuss deceleration circuit.	04
	(c)	Discuss about Radial Piston pumps	07
		OR	
Q.3	(a)	What is a check valve? List out various types of check valves	03
	(b)	Discuss Pressure Reducing valves.	04
	(c)	What is servo valve? List types of servo valve and explain any one in detail.	07
Q.4	(a)	Explain in brief: Packing& Seals used in Hydraulics System.	03
	(b)	What is the purpose of Pressure Intensifier?	04
	(c)	Explain Four-Way DCV with neat sketch	07
		OR	
Q.4	(a)	Compare: Hydraulics System with Pneumatics System	03
	(h)	Give the Classification of Pump, Explain External Gear Pump with	04

	(c)	What is Pressure Intensifiers? Explain single stage pressure intensifiers	07
Q.5	(a)	Explain the classification of pressure control valves with their symbols	03
	(b)	What is the working principle & applications of FRL unit?	04
	(c)	What are the different parts of an air compressor? Explain about the Working of piston compressors.	07
		OR	
Q.5	(a)	What are the functions of a Reservoir? List out the components of a Reservoir.	03
	(b)	Explain about Bypass type pressure compensated flow control	04
	(c)	What is the Function of Air Compressor? Give classification of Air Compressor. Draw Pneumatics Circuit for Any one of the Plastics Processing Machine	07
